An activity theoretical perspective on inter-organizational collaboration in instructional technology development and implementation

Robin Angela Medley

Follow this and additional works at: https://huskiecommons.lib.niu.edu/allgraduate-thesesdissertations

Recommended Citation
Medley, Robin Angela, "An activity theoretical perspective on inter-organizational collaboration in instructional technology development and implementation" (2016). Graduate Research Theses & Dissertations. 1074.
https://huskiecommons.lib.niu.edu/allgraduate-thesesdissertations/1074

This Dissertation/Thesis is brought to you for free and open access by the Graduate Research & Artistry at Huskie Commons. It has been accepted for inclusion in Graduate Research Theses & Dissertations by an authorized administrator of Huskie Commons. For more information, please contact jschumacher@niu.edu.
ABSTRACT

AN ACTIVITY THEORETICAL PERSPECTIVE ON INTER-ORGANIZATIONAL COLLABORATION IN INSTRUCTIONAL TECHNOLOGY DEVELOPMENT AND IMPLEMENTATION

Robin Angela Medley, PhD
Department of Educational Technology, Research, and Assessment
Northern Illinois University, 2016
Dr. Sharon Smaldino, Director

This study examined the collaborative aspects of instructional technology development and implementation on the P.R.I.D.E. Digital Curriculum (PDC). The PDC training product was developed through an inter-organizational collaboration among several agencies and organizations. An increase in globalization and decentralization of organizations is changing how instructional designers communicate with the design and development teams. Cultural differences between institutions are significant when designing and developing collaborative material. This study utilized activity theory and activity systems analysis to examine communication practices, cultural influences, and synergy of the partners with a developer’s perspective on instructional design and development. The findings revealed cultural differences did influence activities. The findings also revealed a historical influence on communication and decision-making practices. Additionally, the study uncovered some techniques used for improving synergistic properties while cautioning of antagonistic behaviors that threaten inter-organization collaboration.
AN ACTIVITY THEORETICAL PERSPECTIVE ON INTER-ORGANIZATIONAL COLLABORATION IN INSTRUCTIONAL TECHNOLOGY DEVELOPMENT AND IMPLEMENTATION

BY
ROBIN ANGELA MEDLEY
© 2016 Robin Angela Medley

A DISSERTATION SUBMITTED TO THE GRADUATE SCHOOL IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE DOCTOR OF PHILOSOPHY

DEPARTMENT OF EDUCATIONAL TECHNOLOGY,
RESEARCH AND ASSESSMENT

Dissertation Director:
Dr. Sharon Smaldino
ACKNOWLEDGEMENTS

I express my sincere gratitude for those who made this research possible through their support, guidance, and faith in me.

To my dissertation committee: Dr. Sharon Smaldino, Dr. Lisa Yamagata-Lynch, and Dr. Cynthia York. Your wisdom, experience, and encouragement have been a torch that has guided me through these challenging years. I am proud to have your names, as leaders in the field of educational technology and activity theory, on this dissertation. Thank you for your willingness, patience, and encouragement.

To my mentors in the field: Charles Nolley, Tony Labriola, and Yevette Brown. Your vast knowledge of media development and wisdom to balance perfection with efficiency has educated me beyond my studies. But it was your kindness and support that gave me wings to fly. You shall forever be a part of me and my future success. Thank you.

To my colleagues and network of professionals who participated and/or supported me in this study, your volunteerism and support are what made this research possible. Your time and generosity affirm that success is a collaborative effort. Thank you.

To my family and friends who supported me – I realize that my success came at a cost to you. Too many times I had to sacrifice our time together so that I could work. Thank you for your understanding support.
DEDICATION

To

Amanda, Jessica, Wyatt, and Erica

Of all that I have read, seen, and experienced in this world,

it is you who inspire me the most.

I love you.

And to my husband Scott.

Thank you for seeing the best in me

and believing in me.
TABLE OF CONTENTS

LIST OF TABLES ...................................................................................................................... viii
LIST OF FIGURES ....................................................................................................................... x
LIST OF APPENDICES ............................................................................................................. xiii

Chapter

1 INTRODUCTION .................................................................................................................... 1
   Background of P.R.I.D.E. Digital Curriculum ................................................................. 2
   Background and Rationale for Research ..................................................................... 4
   Problem Statement ...................................................................................................... 8
   Assumptions ............................................................................................................... 10
   Research Questions ..................................................................................................... 11
   Summary ..................................................................................................................... 12

2 LITERATURE REVIEW ...................................................................................................... 13
   Historical Development of Instructional Technology .................................................. 13
   Terms and Definitions ............................................................................................... 16
   Paradigms of the Field ................................................................................................. 18
   Objectives and Outcomes ............................................................................................ 22
   Instructional Design and Development of Multimedia .............................................. 25
   Systems, Models and Limitations .............................................................................. 28
<table>
<thead>
<tr>
<th>Chapter</th>
<th>METHODOLOGY</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>3 METHODOLOGY</td>
</tr>
<tr>
<td>Chapter</td>
<td>Page</td>
</tr>
<tr>
<td>---------</td>
<td>------</td>
</tr>
<tr>
<td>Summary of Assumptions</td>
<td>79</td>
</tr>
<tr>
<td>Methodology</td>
<td>80</td>
</tr>
<tr>
<td>Case-Study Approach</td>
<td>82</td>
</tr>
<tr>
<td>Activity Systems Analysis</td>
<td>84</td>
</tr>
<tr>
<td>Researcher’s Role</td>
<td>88</td>
</tr>
<tr>
<td>Criteria for Selection of Participants</td>
<td>88</td>
</tr>
<tr>
<td>Subject Classification</td>
<td>93</td>
</tr>
<tr>
<td>Data Collection</td>
<td>93</td>
</tr>
<tr>
<td>Stage 1, EDC: Step 1 – Development Data</td>
<td>98</td>
</tr>
<tr>
<td>Stage 1, EDC: Step 2 – Implementation Data</td>
<td>99</td>
</tr>
<tr>
<td>Stage 2, IDC – Interview Data</td>
<td>102</td>
</tr>
<tr>
<td>Data Analysis Procedures</td>
<td>103</td>
</tr>
<tr>
<td>Trustworthiness</td>
<td>106</td>
</tr>
<tr>
<td>FINDINGS</td>
<td>108</td>
</tr>
<tr>
<td>Stage 1 Study</td>
<td>109</td>
</tr>
<tr>
<td>Stage 2 Study</td>
<td>133</td>
</tr>
<tr>
<td>Themes and Activity Systems</td>
<td>135</td>
</tr>
<tr>
<td>Central Questions</td>
<td>137</td>
</tr>
<tr>
<td>Question 1: Communication</td>
<td>141</td>
</tr>
<tr>
<td>Question 2: Influences</td>
<td>173</td>
</tr>
<tr>
<td>Question 3: Synergy</td>
<td>183</td>
</tr>
<tr>
<td>Chapter</td>
<td>DISCUSSION AND CONCLUSION</td>
</tr>
<tr>
<td>---------</td>
<td>----------------------------</td>
</tr>
<tr>
<td>5</td>
<td>Summary and Discussion of Study Findings</td>
</tr>
<tr>
<td></td>
<td>Communication</td>
</tr>
<tr>
<td></td>
<td>Influences</td>
</tr>
<tr>
<td></td>
<td>Synergy</td>
</tr>
<tr>
<td></td>
<td>PDC Implementation</td>
</tr>
<tr>
<td></td>
<td>Significance of Study</td>
</tr>
<tr>
<td></td>
<td>Historical Development of Instructional Technology</td>
</tr>
<tr>
<td></td>
<td>Instructional Design and Development of Multimedia</td>
</tr>
<tr>
<td></td>
<td>The Social Process of Instruction</td>
</tr>
<tr>
<td></td>
<td>Activity Theory for Examining Collaboration</td>
</tr>
<tr>
<td></td>
<td>Limitations</td>
</tr>
<tr>
<td></td>
<td>Recommendations for Future Research</td>
</tr>
<tr>
<td></td>
<td>REFERENCES</td>
</tr>
<tr>
<td></td>
<td>APPENDICES</td>
</tr>
</tbody>
</table>
# LIST OF TABLES

<table>
<thead>
<tr>
<th>Table</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Organizational subjects.</td>
<td>94</td>
</tr>
<tr>
<td>2</td>
<td>Data Sources Summary.</td>
<td>96</td>
</tr>
<tr>
<td>3</td>
<td>Instrument and Documents.</td>
<td>97</td>
</tr>
<tr>
<td>4</td>
<td>Data Collection Timeline.</td>
<td>104</td>
</tr>
<tr>
<td>5</td>
<td>Data Analysis Procedures Timeline.</td>
<td>104</td>
</tr>
<tr>
<td>6</td>
<td>Technical Experience.</td>
<td>113</td>
</tr>
<tr>
<td>7</td>
<td>Previous CD/DVD Training.</td>
<td>114</td>
</tr>
<tr>
<td>8</td>
<td>What were the reasons for any interruptions?</td>
<td>115</td>
</tr>
<tr>
<td>9</td>
<td>Strengths of PDC.</td>
<td>120</td>
</tr>
<tr>
<td>10</td>
<td>Perceptions on Distance Education.</td>
<td>124</td>
</tr>
<tr>
<td>11</td>
<td>Trainer versus Staff Perception.</td>
<td>124</td>
</tr>
<tr>
<td>12</td>
<td>Different Perspectives on Feedback.</td>
<td>127</td>
</tr>
<tr>
<td>13</td>
<td>Limitations of PDC.</td>
<td>128</td>
</tr>
<tr>
<td>14</td>
<td>Suggested Techniques to Overcome Limitations</td>
<td>129</td>
</tr>
<tr>
<td>15</td>
<td>Reviewing Saved Files.</td>
<td>131</td>
</tr>
<tr>
<td>16</td>
<td>Support for Trainers.</td>
<td>132</td>
</tr>
<tr>
<td>17</td>
<td>Outline of Determination and Design Theme</td>
<td>138</td>
</tr>
<tr>
<td>18</td>
<td>Outline of Development Theme</td>
<td>139</td>
</tr>
<tr>
<td>19</td>
<td>Outline of Diffusion Theme</td>
<td>140</td>
</tr>
<tr>
<td>20</td>
<td>Types of Meetings.</td>
<td>142</td>
</tr>
<tr>
<td></td>
<td>Activity System Elements of Design Theme</td>
<td>175</td>
</tr>
<tr>
<td>---</td>
<td>----------------------------------------</td>
<td>-----</td>
</tr>
<tr>
<td>22</td>
<td>Activity System Elements of Development Theme</td>
<td>178</td>
</tr>
<tr>
<td>23</td>
<td>Activity System Elements of Diffusion Theme</td>
<td>181</td>
</tr>
<tr>
<td>24</td>
<td>Outcome Based Approach to Multimedia</td>
<td>398</td>
</tr>
<tr>
<td>Figure</td>
<td>Description</td>
<td>Page</td>
</tr>
<tr>
<td>--------</td>
<td>------------------------------------------------------------------------------</td>
<td>------</td>
</tr>
<tr>
<td>1</td>
<td>Sample screen of PDC.</td>
<td>3</td>
</tr>
<tr>
<td>2</td>
<td>Proposed basic structure of instructional product development activity.</td>
<td>68</td>
</tr>
<tr>
<td>3</td>
<td>Three-dimensional activity system.</td>
<td>87</td>
</tr>
<tr>
<td>4</td>
<td>Sample size percentage of End Users.</td>
<td>110</td>
</tr>
<tr>
<td>5</td>
<td>Age of participants in study.</td>
<td>111</td>
</tr>
<tr>
<td>6</td>
<td>Participants by roles.</td>
<td>112</td>
</tr>
<tr>
<td>7</td>
<td>Learner-centered benefits.</td>
<td>116</td>
</tr>
<tr>
<td>8</td>
<td>Preferred method of training.</td>
<td>117</td>
</tr>
<tr>
<td>9</td>
<td>Training preference.</td>
<td>117</td>
</tr>
<tr>
<td>10</td>
<td>Opinion of components.</td>
<td>119</td>
</tr>
<tr>
<td>11</td>
<td>Strengths tag cloud.</td>
<td>121</td>
</tr>
<tr>
<td>12</td>
<td>Comparable evaluation of skills.</td>
<td>122</td>
</tr>
<tr>
<td>13</td>
<td>Staff training.</td>
<td>125</td>
</tr>
<tr>
<td>14</td>
<td>Support needs of families.</td>
<td>126</td>
</tr>
<tr>
<td>15</td>
<td>Limitations tag cloud.</td>
<td>130</td>
</tr>
<tr>
<td>16</td>
<td>Instructional developer model.</td>
<td>211</td>
</tr>
<tr>
<td>17</td>
<td>Activity System #1, grant buy-in.</td>
<td>281</td>
</tr>
<tr>
<td>18</td>
<td>Activity System #1, contradictions and tensions.</td>
<td>285</td>
</tr>
<tr>
<td>19</td>
<td>Activity System #2, shared vision.</td>
<td>290</td>
</tr>
<tr>
<td>20</td>
<td>Activity System #2, contradictions and tensions.</td>
<td>294</td>
</tr>
<tr>
<td>Page</td>
<td>Description</td>
<td></td>
</tr>
<tr>
<td>------</td>
<td>-------------</td>
<td></td>
</tr>
<tr>
<td>44</td>
<td>Significance of graphics</td>
<td></td>
</tr>
<tr>
<td>45</td>
<td>Competencies and objectives screen</td>
<td></td>
</tr>
<tr>
<td>46</td>
<td>Original training script</td>
<td></td>
</tr>
<tr>
<td>47</td>
<td>Example interactive script</td>
<td></td>
</tr>
<tr>
<td>48</td>
<td>Translated script into screen</td>
<td></td>
</tr>
<tr>
<td>49</td>
<td>Screencoding</td>
<td></td>
</tr>
<tr>
<td>50</td>
<td>Example of module outline</td>
<td></td>
</tr>
<tr>
<td>51</td>
<td>Example navigation</td>
<td></td>
</tr>
<tr>
<td>52</td>
<td>Contents screen</td>
<td></td>
</tr>
<tr>
<td>53</td>
<td>Narration screen</td>
<td></td>
</tr>
<tr>
<td>54</td>
<td>Review</td>
<td></td>
</tr>
<tr>
<td>55</td>
<td>Speaking from experience 1</td>
<td></td>
</tr>
<tr>
<td>56</td>
<td>Speaking from experience 2</td>
<td></td>
</tr>
<tr>
<td>57</td>
<td>Case study, read</td>
<td></td>
</tr>
<tr>
<td>58</td>
<td>Case study, watch</td>
<td></td>
</tr>
<tr>
<td>59</td>
<td>Vignettes</td>
<td></td>
</tr>
<tr>
<td>60</td>
<td>Example video</td>
<td></td>
</tr>
<tr>
<td>61</td>
<td>Example animation, image</td>
<td></td>
</tr>
<tr>
<td>62</td>
<td>Example animation, concepts</td>
<td></td>
</tr>
<tr>
<td>63</td>
<td>Example text animation with audio</td>
<td></td>
</tr>
<tr>
<td>64</td>
<td>Example text animation with bullet points</td>
<td></td>
</tr>
</tbody>
</table>
# LIST OF APPENDICES

<table>
<thead>
<tr>
<th>Appendix</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>A.</td>
<td>University Sponsored Research Agreement</td>
<td>231</td>
</tr>
<tr>
<td>B.</td>
<td>Association Sponsored Research Agreement</td>
<td>234</td>
</tr>
<tr>
<td>C.</td>
<td>IRB Approval 2007</td>
<td>237</td>
</tr>
<tr>
<td>D.</td>
<td>IRB Approval 2010</td>
<td>239</td>
</tr>
<tr>
<td>E.</td>
<td>Agency Participation Guidelines</td>
<td>241</td>
</tr>
<tr>
<td>F.</td>
<td>Invitation to Participate – Stage 1 Study</td>
<td>246</td>
</tr>
<tr>
<td>G.</td>
<td>Sample Stage 1 Study Agency: Distributed announcement</td>
<td>248</td>
</tr>
<tr>
<td>H.</td>
<td>PDC User Questionnaire</td>
<td>251</td>
</tr>
<tr>
<td>I.</td>
<td>Stage 1 Study Focus Group Agenda</td>
<td>264</td>
</tr>
<tr>
<td>J.</td>
<td>Focus Group Questions</td>
<td>266</td>
</tr>
<tr>
<td>K.</td>
<td>Recruitment Letter to Participate - Interviews</td>
<td>268</td>
</tr>
<tr>
<td>L.</td>
<td>Consent for Participation</td>
<td>271</td>
</tr>
<tr>
<td>M.</td>
<td>Interview Questions</td>
<td>273</td>
</tr>
<tr>
<td>N.</td>
<td>Activity System #1: Buy-in</td>
<td>279</td>
</tr>
<tr>
<td>O.</td>
<td>Activity System #2: Storyboards</td>
<td>288</td>
</tr>
<tr>
<td>P.</td>
<td>Activity System #3: Design</td>
<td>295</td>
</tr>
<tr>
<td>Q.</td>
<td>Activity System #4: Screencoding</td>
<td>310</td>
</tr>
<tr>
<td>R.</td>
<td>Activity System #5: Storyboards</td>
<td>317</td>
</tr>
<tr>
<td>S.</td>
<td>Activity System #6: Development</td>
<td>326</td>
</tr>
<tr>
<td>T.</td>
<td>Activity System #7: Video Production</td>
<td>339</td>
</tr>
<tr>
<td>Section</td>
<td>Title</td>
<td>Page</td>
</tr>
<tr>
<td>---------</td>
<td>--------------------------------------------</td>
<td>------</td>
</tr>
<tr>
<td>U.</td>
<td>Activity System #8: Evaluation</td>
<td>350</td>
</tr>
<tr>
<td>V.</td>
<td>Activity System #9: Implementation</td>
<td>365</td>
</tr>
<tr>
<td>W.</td>
<td>Activity System #10: Evaluation</td>
<td>379</td>
</tr>
<tr>
<td>X.</td>
<td>Design and Development Narrative Analysis</td>
<td>391</td>
</tr>
</tbody>
</table>
The advances in technology have made planning and producing more difficult and labor intensive (Spector, 2002). Merrill and the ID2 Research Group (1998) stated that multimedia instruction requires 300 person hours of development time for the creation of a single hour of interactive instruction. Further, as Spector (2002) noted, “as project complexity grows, so does the need to collaborate and to coordinate activities” (p. 31). Saettler (2004) asserted that one of the most critical elements of a team working on an instructional design project for successful completion is "accurate, genuine, and timely communication" (p. 115). An increase in globalization and decentralization of organizations is changing how instructional designers communicate with design and development teams, such as through virtual methods of communication (Richey et al., 2007). Instructional development projects can also occur through a partnership with other organizations, and large-scale development of instructional technology may involve the collaboration of different organizations with specialized skills and knowledge.

Each agency has certain rules and procedures within its workplace environment that influence collaborative activities. These inter-organizational collaborations refer to the joint effort of two or more organizations working together to achieve a shared goal (Pfeffer & Novak, 1976). A case study conducted by Durham and Arrell (2007) identified that the cultural difference between institutions is significant when designing and developing collaborative
material. An example of this type of inter-organizational collaboration is the P.R.I.D.E. Digital Curriculum (PDC).

Background of P.R.I.D.E. Digital Curriculum

PDC was produced through the collaborative effort of different agencies: an academic institution (university), a national child advocacy organization, and six public state child welfare agencies. P.R.I.D.E. (Parent Resources for Information, Development, and Education) is an informative and instructional model to support foster parents on issues such as meeting the development needs of children at risk, caring for children who have been abused, working in professional teams, and promoting cultural identity. The original content came from pre-existing in-class training materials. The P.R.I.D.E. model was developed for both pre-service (prior to receiving children) and in-service (after receiving approval to foster children). Christenson (2006) studied the pre-service P.R.I.D.E. model and found it to be an effective tool for training. The P.R.I.D.E. model consisted of face-to-face training often led by co-trainers: one agency representative and one experienced foster parent. The co-trainers verbally described policies and examples while supplementing their training with video scenarios and handouts. The in-service materials were broken down into nine modules, each containing two to four lessons and was originally entitled Foster P.R.I.D.E. Digital Curriculum (see Figure 1 for sample screen shot). The child welfare agencies and child welfare advocacy organization acted as consultants and subject-matter experts (SME), and the university was the primary developer in charge of converting the original training materials into a revised and scripted 24-disk multimedia training product.
The university was the recipient of a $1.3 million Fund for the Improvement of Post-Secondary Education (FIPSE) grant under the Learning Anytime Anywhere Partnerships (LAAP) program, which provided the seed money to translate the PDC in-class training into a multimedia digital curriculum. The project began in October 2000 and development ended in late 2006. PDC is currently in the marketing and implementation stage and has since been converted to an online format. Several hundred people took part in the PDC development, with over 300 actors and experienced experts videotaped. The development team at the university consisted of a project director, producer, instructional design team coordinator, assistant design team coordinator (the researcher of this study), a video production crew, two audio engineers, a multimedia technologist group, graphic artists, and administrative staff. External partners and collaborating contributors to the development team included content partners from the child welfare advocacy organization, the child welfare agencies in six states (Illinois, California, Kentucky, Michigan, North Dakota, and Texas), trainers and foster parents from across the
country, and an external evaluator. These organizations participated in the process of converting the traditional training into multimedia, distance learning training. Texas provided a field test on the first completed module. The completed P.R.I.D.E. Digital Curriculum is comprised of roughly 75 hours of multimedia components delivered on CD-ROM.

**Background and Rationale for Research**

Current trends and issues in educational technology recognize that design and development research is scarce within the field’s literature. Richey and Klein (2007) defined design and development research as "the systemic study of design, development and evaluation processes with the aim of establishing an empirical basis for the creation of instructional and non-instructional products and tools and new or enhanced models that govern their development" (p. 1). Gustafson and Branch (2007) identified design and development research as pragmatic research that helps to test theory, validate practice, and establish new procedures, techniques, and tools, typically based on case studies. Pragmatic research differs from basic research as it is prescriptive driven. In other words, pragmatic research looks at how solutions actually occur in the field of practice rather than looking at theoretical solutions. How multimedia like the P.R.I.D.E. project are developed, therefore, is a part of the pragmatic design and development research area. Multimedia development processes are influenced by a multitude of elements, including but not limited to designers and practitioners, cultural environments, scale of project, and instructional design models. Each of these components influences and interconnects to create a product. While the solutions to problems that occur during multimedia development may be
unique to each given environment, the potential influences may not be individual to the P.R.I.D.E. project but are shared by other large-scale multimedia development projects.

Design and development research seeks to create knowledge grounded in data systematically derived from practice (Richey & Klein, 2007). Richey and Klein divided the instructional design and development research into two general types of research: product and tool research and model research, noting the need for research is especially "critical" on models and practices employed by designers and developers (p. 3). Kim, Lee, Merrill, Spector, and van Merrienboer (2008) add that "the study of instructional design includes the study of designers" (p. 812). Designers' performance and actions can vary greatly based on their experience level, and additional variables and complexities take place when a team is required to develop instruction, particularly in large-scale multimedia products. Larson and Lockee (2009) noted that instructional design practitioners differ in respect to the organizational culture in which they work. They defined culture as "shared beliefs and values, behavioral norms, and communication patterns that are reflected in an organization's policies" and asserted that organizational culture affects the design of instruction (p. 2). As processes and objects change, these variables will affect the design team and require new competencies of the team members (Kim et al., 2008).

Today, many research topics relate to the development and uses of emerging technologies and how to best take advantage of these new technologies (Jacobs & Dempsey, 2007; Ross et al., 2008). These questions lead to research on product development. Design and development research is expanding (Richey & Klein, 2007; Ross et al., 2008; Wang & Hannafin, 2005) as new products and programs are being empirically studied. According to Ross et al., design and development research will expand into disciplinary and workplace problems. Furthermore, Kim et al. (2008) predicted that instructional models will become better adapted to handle the current
views of flexible learning scenarios, just-in-time/task performance, and instructional supports as a result of recent interest and emphasis of design and development research (p. 810). Other trends in research on the creation function pertain to design cycle time reductions; effectiveness and efficiency of training (Richey et al., 2007); instructional project management at a distance (Litchfield, 2006); benefits of partnerships in developing content (Howell, Williams, & Lindsay, 2003); local, dynamic, and systemic interactions (Wilson, 2002); and evolution of media and technology use in the field (Richey et al., 2007). The expansion of research correlates to the significant increase in the use of instruction media in a variety of settings (Reiser & Dempsey, 2006). Over the last 20 years, expenditures on university campuses for these new digital technologies have grown rapidly from millions to billions of dollars and hundreds to thousands of staff and system designers (Woolsey, 2008). However, Woolsey asserted that while expenditures and staff in the new technologies have increased, universities have not organized themselves to invest directly in the development of the newer materials and environments (p. 217).

Wilson (2002) argued that future models of instructional design need to stop looking at linear cause-and-effect relationships outside of systemic interactions. For instance, rather than asking questions such as which is better – distance education or traditional delivery – Wilson suggested practitioners should examine local, dynamic, and systemic interactions. The models in the literature are limiting because they are "too abstract to inspire and support designers in their professional practice" (Ross et al., 2008). Richey et al. (2007) stated, "The complexities and pressures of these work settings shape not only the roles of designers, but also in many cases the design processes themselves" (p. 181). Instructional designers must respond directly to their environment; however, research on instructional design models is limiting because it does not
examine local, dynamic, and systemic interactions (Wilson, 2002) and is descriptive rather than prescriptive, in which solutions are provided to the designers and practitioners of the field. When the study of models and theory lacks authentic prescriptive solutions, new designers and practitioners, such as those in Larson's (2005) study of educational technology students, are not adequately prepared for the workplace culture. The relevance here is that designers and practitioners influence the development process. Their ability to handle areas such as workplace politics and organizational rules and procedures will impact the choices made during the processes. The quality of interaction in various cultural environments and among different members of the development process will also impact communication.

Product development requires the actions of multiple members with varied skill sets. The individual and collaborative character of the team members influences the chosen techniques, tools, and solutions. The need to examine the interaction and activities involved in instructional technology product development draws attention to the team aspect of development and implementation. However, there are unique challenges in managing instructional design teams due to the cultural nature of creative people. Approaching creative people in a traditional manner may cause the team members to be resistant and misunderstood (Litchfield, 2006). One method of studying this cultural aspect within a team is through activity systems analysis. Wilson (2002) stated that practitioners are forced to merge contradictory and incommensurate theories on their own and claimed that while he has not found models in the educational or social science literatures that successfully integrate these elements, activity theory comes close. Kuutti (1995) defined activity theory as "a philosophical and cross-disciplinary framework for studying different forms of human practices as development processes, both individual and social levels interlinked at the same time" (p. 23). Hyysalo (2005) suggested that activity theory may be
useful for studying these complex, undefined, and situated elements of design, as this theoretical approach can examine long-term processes and collaboration within design work. While the theoretical framework of this research is discussed in more detail later, the research interest here is geared toward the human practices and processes of the development team. Current research points to unresolved knowledge of processes, communication methods, workplace cultures and collaborative efforts in instructional design models. Emphasis is focused on the intra-organizational and inter-organizational relationships. Intra-organizational relationships refers to the relationships between the members within an organization, while inter-organizational refers to relationships external to the organization, such as clients, consultants, partners, and customers/users of the produced product.

Problem Statement

Problems in product development often are rooted in the choices and processes chosen by the practitioners in the instructional design field. Gustafson and Branch (2007) asserted workplace problems worthy of research should be 1) recurring and common to many settings, 2) viewed as basically solvable, and 3) reflective of broad areas of current interest in the field (p. 17). Examples are the reduction of development design cycle time (Richey et al., 2007) and reduction of costs as well as extracting knowledge from subject-matter experts. Gustafson and Branch claimed the problems considered critical in technology-related design and development research relate to effective techniques and tools for producing products. "How to do development?" "What problems can be expected?" and "How can the development team avoid these problems?" are questions that lead to studies within this research base. Research should offer useful solutions for recurring and common problems in practice, addressing solvable
problems and being broad enough to tackle current interest in the field. Effective techniques, useful tools and authentic workplace solutions are needed to assist practitioners in the field.

Traditional research in this area has focused on descriptive knowledge instead of the prescriptive knowledge that could lead to useful solutions in design and development problems (van den Akker, 1999). Smith and Ragan (1999) state that descriptive theory "describes phenomena as they are hypothesized," while prescriptive theory "prescribe[s] actions to take that will lead to certain results" (p. 18). Snyder (2009) also concurs that a new "design theory" should emphasize prescriptions. She stated the key difference between her proposed design theory and descriptive theory is that design theory would be goal oriented, whereas descriptive theory is outcome oriented. Snyder asserted design theory should prescribe paths to accomplish a given end, whereas descriptive theories focus on describing how things work. A prescriptive approach to solutions in areas such as choosing effective technique and tools, effective processes for extracting knowledge from subject-matter experts, and reducing costs and time on development are more goal oriented, guiding designers and practitioners on solvable problems. Pragmatic research through case study methodology provides an opportunity to gather data in a prescriptive nature, revealing chosen solutions of the team in a real-world example. As the case study examines the development team, the processes of the development team within the whole of the instructional design and development project provide insight for instructional designers, subject-matter experts, and other participants on the challenges in communicating and avoiding resistance from the development team (Litchfield, 2006). Case studies can involve conditions that facilitate the development or unique processes used by the development team. This research approach also provides insight into the cultural environment of development teams when instructional designers consider design expectations and timelines within their project plans and
proposals. Thus, the research focus addresses model development from inter- and intra-organizational activity standpoints. The study is situation specific and focused on data collected from the development and implementation phases of the P.R.I.D.E. Digital Curriculum product, interviews, and questionnaires.

Assumptions

Assumptions are interpreted as something taken for granted rather than tested or checked (Fraenkel & Wallen, 2003). The following assumptions were made as part of this study. The theory of activity, as described by Vygotsky (1978) and Leontiev (1978), can help explain the instructional development phenomenon by examining the social-cultural and mediated activities involved in said processes. A second assumption in this study is that the relationships among concepts in activity theory are necessary, sufficient and clear for investigation of instructional development models. The third assumption is that the instruments used in the mixed-method approach are congruent with the conceptual framework and the data analysis described in Chapter 3 adequately captures the core concepts of activity theory. A fourth assumption presented here is that the evidence generated through the methods were sufficient were for uncovering activity. Last, and most important, it is the motivating assumption of this researcher that the findings in this study will be valuable to the instructional technology field and practitioners in the instructional development processes of inter-organizational collaboration. These assumptions will be elaborated on in more detail in Chapter 3, the methodology.
Research Questions

A prescriptive model of the instructional product development process from an activity theoretical perspective on inter-organizational partnership is missing from the educational technology literature. Research collected from this study provides an activity theoretical perspective on instructional design models and practices. When considering the cultural impact of both the inter- and intra-organizational partnerships, questions arise on how these relationships transform an idea into a product (goal). The models of instructional design provide a descriptive process involved in the transformation, but a prescriptive study digs deeper into the cultural and relationship aspects of the activities that exist within the process. Investigating and documenting this activity-based process can contribute to a knowledge base for future practitioners within instructional design. The following research questions were explored to examine this phenomenon:

1. How do inter-organizational and intra-organizational workplace cultures shape the communication process during the collaborative transformation from design to development and development to implementation of an instructional product?

2. Based on the basic triangular structure of activity systems, what tools and rules influence the development team's participation level during the development and implementation process?

3. In which ways did culture, resources, and the division of roles influence instructional product development in a large-scale, joint collaboration?
Summary

An examination of PDC development lends insight into a prescriptive activity-based model for instructional development. This research focuses on two phases of the ADDIE process (Seels & Richey, 1994), development and implementation, while examining how the development team interacts with the other phases (analysis, design, and evaluation). Other areas of examination include the determination to initialize work on the PDC through the grant and buy-in, communication tools involved in the process, and marketing of the product. The study is from the development team's perspective while examining activities associated with the inter-organizational partnership. This case-study approach examines the intra-relationships of the development team (technical personnel) and the inter-relationships with the external designers, clients, and learners. Ross et al. (2008) state one problem gaining research attention is the environmental conditions in the practitioner's workplace. This PDC research examines prescriptive answers to the relationships and collaboration of instructional technology development.
CHAPTER 2
LITERATURE REVIEW

The literature review for this study has been broken into four sections: 1) the cultural-historical development of instructional technology, 2) instructional design and development of multimedia, 3) the social process of instructional development activity, and 4) activity theory as a tool for examining instructional technology development. I review the cultural-historical development of instructional technology because the cognitive processes of an individual or group are an internalization of the tools of one’s culture. Given that tools emerge and change as cultures develop and change, the historical perspective is an important aspect of a cultural perspective. In other words, the tools and signs that have mediated the historical development of instructional development will influence current practitioners. I then examined the instructional design and development processes to different systems, models, and limitations. Afterward, I then reflected on literature related to the social process of instructional development. These sections examine the review of general issues and practices within the field. Last, this chapter reviews literature on activity theory as a viable selection for examining this PDC development case study.

Historical Development of Instructional Technology

The development of large-scale instructional media is a social process that joins multiple individuals with varied skillsets. Multimedia development processes are influenced by a
multitude of elements, including but not limited to designers and practitioners, tools and signs, cultural environments, scale of project, and instructional design (ID) models. Each of these components influences and interconnects to create a product, and each project can take on a life of its own with “a separate existence or history” (OED Online) as unique as an individual. Each project develops through social activity, with pre-existing historical influences and cultural values embedded within the development team and occurring during a specific moment in time. This literature review takes as an assumption that the cultural-historical perspective of a field, such as instructional technology, influences the current state of instructional development. The cultural-historical development of any field provides insight into beliefs, perspectives and values of that field.

Cole (1998) explained the cultural-historical approach as “the structure and development of human psychological processes emerge through culturally mediated, historically developing, practical activity” (p. 108). He provides three basic principles of cultural-historical psychology: 1) mediation through artifacts, 2) historical development, and 3) practical activity. The artifacts or tools are modified and/or used by a team during the development activities to achieve a goal, and in using these artifacts, the people change their environments and are influenced by the artifacts.

The tools instructional designers and developers use to create their projects, such as models, computers, and theories, share the same historical development in the field of educational technology. For instance, photography came before motion images and audio followed soon thereafter, just as modernism came before post-modern perspectives. Therefore, examining the social and cultural history of the educational technology field and the evolving paradigm shifts can provide a starting point for understanding the development processes of
instructional media. Bruner (1990) stated that the distributed consciousness of the mind is not isolated in the present, but it also takes meaning “from the historical circumstances that gave shape to the culture” (p. 138). In other words, the world people live in is influenced by the past generations’ use, creation and manipulation of artifacts. Both Bruner and Vygotsky believed that cognitive processes could not be understood without “reference to the social and cultural context within which such development is embedded” (Driscoll, 2005, p. 247).

However, Vygotsky (1978) focused more on the mechanisms of development. Wertsch (1988) described Vygotsky’s socio-cultural school of thought as having three themes: “1) a reliance on a genetic or developmental method, 2) the claim that higher mental processes in the individual have their origin in social processes, and 3) the claim that mental processes can be understood only if we understand the tools and signs that mediate them” (pp. 14-15). Thus to understand professionals in the field of instructional technology, we could rely on the developmental methods chosen during socially constructed activities in the instructional development process. As Vygotsky purported, an understanding of the social activities and mental processes of professionals in the educational technology field can only be understood if consideration is given to the tools and signs that have mediated this process. Driscoll (2005) explained, “Like Bruner, Vygotsky considered the development of intelligence to be the internalization of the tools of one’s culture. But tools emerge and change as cultures develop and change. This suggested to Vygotsky that an historical perspective is as important as a cultural perspective in understanding human mental functions” (p. 249). Therefore, the tools and signs that have mediated the historical development of instructional technologists must be considered over time and not solely in the present state.
The aim of this research is to integrate characteristics of the development process as it has evolved in the field by drawing on various historical aspects of the production process that pertain to the collaborative effort and management of large-scale production. This purpose establishes a reference point for current research on instructional development, noted as necessary by scholars such as Bruner (1990), Vygotsky (1978), and Wertsch (1988), for the understanding of instructional technologists and their developmental methods. Furthermore, understanding the historical development of the field can arise from examining the artifacts and tools that have been used over time. This review looks at the historical development and paradigms of the educational technology field through the objectives and outcomes of instructional development and the systems, models, and limitations in the field. It is the intention of this section that the social and cultural perspectives of instructional technology professionals can be revealed in the literature review.

**Terms and Definitions**

Before proceeding through the historical development of instructional technology, some terms and definitions need to be clarified. This is partly due to some words having multiple or similar meanings and partly because word usage has changed over time within the culture of the field. For instance, the educational technology field began as the visual communication field and has also been referred to as the instructional technology field. For the purposes of this paper, educational technology and instructional technology are interchangeable. They both represent the field of education in which current technologies are used to create or utilize instructional materials. Likewise, the terms **instructional design** and **instructional development** are used interchangeably (Molenda & Boling, 2008). Branch and Kopcha (2014) explained:
Consistent to both definitions is that the overall instructional design and development process includes activities associated with preparing lesson plans and determining moment-to-moment instructional strategies, sequencing, motivational elements, and learner actions. Thus, the terms instructional design and instructional development have been used interchangeably and often considered synonymous (p. 78).

However, development processes are distinctly different from the design techniques. Instructional design refers to the script or blueprints of the planned project, while instructional development refers to the actual processes by which the plan is converted into an instructional object. Often the term instructional development is used in a broader sense to describe the entire process (e.g., design, management, development and implementation), but this paper refrains from the broader definition so the physical development is clearly understood as the topic of this paper. The broader terminology of instructional development, meaning the whole process from idea to implementation, is referred to by either instructional technology or educational technology depending on the researcher and era in discussion.

Also mentioned above and throughout this literature are three somewhat overlapping words: social, cultural, and historical. Social refers to the interaction of multiple individuals. Cultural, on the other hand, identifies the “distinctive ideas, customs, social behavior, products or way of life of a particular society, people or period” (OED Online). In more recent research, historical studies have examined the cultural aspects of groups. In this sense, historical identifies the timelines of patterns of social and cultural behavior as seen in paradigm shifts. Paradigms are models or patterns of thought within a particular area, and the shift is the changing of these models and patterns (Kuhn, 1996). Hence, the paradigm shifts in this paper describe patterns of changing perspective in the educational technology field. These patterns provide a cultural-historical look through the use of timelines of different artifacts/tools used by instructional developers and their changing perspectives, ideas, social behavior and products.
Paradigms of the Field

Perspectives on instructional product development are identified through historical definitions and paradigm shifts in the field of educational technology. These perspectives represent the development of and changes in social and cultural perspectives. This topic was examined to view how the role of the instructional developer was de-emphasized overtime. The beginning of educational technology, known as the visual instruction (or visual education) movement, began at the turn of the 20th century (Molenda & Boling, 2008, p. 83) when companies commercialized slides, photography and silent film for use as an educational tool. These large commercialized enterprises entered into the educational field, but most of the films lacked educational value (Saettler, 2004). A paradigm shift occurred around the late 1920s with advancement in sound recording, radio broadcasting and motion pictures with sound. Reiser and Dempsey (2006) noted this era through the 1940s was the audiovisual instruction movement era, with most of the educational technology professionals focusing their attention on the media. However, early in this era, the commercialized educational film industry began to fail (Saettler, 2004), which signified the beginning of a shift away from attention on media that would occur over the next thirty years. Increased production of educational media gained momentum during WWII (Reiser & Dempsey, 2006), but there was considerable criticism regarding

- the lack of articulation between educators and commercial entities
- commercial interests’ failure to study the instructional nature
- administrators’ opposition to film in school
- fear the motion pictures would replace teachers
- low financial returns
- poor management or lack of planning (Saettler, 2004, pp. 106–107)
The next paradigm shift began in the 1950s as professionals in the field became interested in various theories and models of communication, claiming it was necessary to consider all the elements of the process and not focus only on the media itself (Reiser & Dempsey, 2006). By the 1960s, the field had shifted to what Molenda and Boling (2008) referred to as the programmed instruction movement and Reiser and Dempsey (2006) referred to as the behavior objectives movement because programmed instruction was primarily based on behavior objectives. The 1963 Association of Educational Communications and Technology (AECT) definition indicated that the field was not just about media. At the time, the definition departed from the traditional view and focused on "the design and use of messages which control the learning process" (Saettler, 2004, p. 9). “The focus shifted to what learners were doing, rather than what they were watching, and so the focus of design and production shifted from making AV [audio/visual] presentations to creating learning environments in which learners had the opportunity to practice new skills under conditions of constant feedback” (Molenda & Boling, 2008, p. 82).

Issues present in the field at the time dealt with behavior management, teaching machines, and programmed instruction. The 1963 definition identified the process steps as planning, production, selection, utilization, and management, which became known as the systematic instructional design, or simply instructional design (Reiser & Dempsey, 2006, p. 4). The shift reveals a change in the cultural perspective of the field. For instance, the first half of Saettler's (2004) seminal work, *The Evolution of American Educational Technology*, focused greatly on the commercialization of the field, but the second half concentrated more on theories, systems and models.

As the definition of the field grew, so did the attention to design instead of development. The 1977 AECT definition placed even greater emphasis on the systematic design process with a
focus on specific steps, such as people, procedures, ideas, devices and organizations. This
definition also added the analysis phase, which at the time was receiving attention among
professionals in the field (Reiser & Dempsey, 2006). During this time, great technological
changes were occurring, such as personal computers and video games (Molenda & Boling,
2008), and the next prominent paradigm shift began around the early 1980s. Computer-assisted
Instruction (CAI) sparked the information technology movement. A new definition came in 1994
(Seels & Richey, 1994) to address these changes. Many changes had occurred in the field, and
the focus shifted from behavioral learning theories to cognitive and constructivist learning
theories. In addition, the profession saw new technological advances such as CD-ROMs,
interactive videos, and the Internet. Distance learning and new instructional strategies like
collaborative learning gained popularity (Reiser & Dempsey, 2006). The 1994 AECT definition
(Seels & Richey, 1994) described the field in five domains: design, development, utilization,
management, and evaluation and the overall process of instructional development as

a systematic approach to the design, production, evaluation, and utilization of complete
systems of instruction, including all appropriate components and a management pattern
for using them; instructional development is larger than instructional product
development, which is concerned with only isolated products, and is larger than
instructional design, which is only one phase of instructional development. (p. 172)

The theories identified within the product development domain consisted of
communication, visual thinking, visual learning, visual communication and aesthetics. Research
in this domain involved media, text design, and visual learning (Seels & Richey, 1994). Seels
and Richey left the term systematic out of the definition to de-emphasize the linear process while
still stressing the steps mentioned in their definition as a systematic process (p. 8). They asserted
the previous perspective limited the then current constructivist theories on learning
environments. In addition, Seels and Richey's definition re-examined the field in terms of theory
and practice, emphasizing the field as both an area of practice, research and study (Reiser & Dempsey, 2006).

The most recent paradigm shift changed focus from CAI to web-based learning environments and e-learning (Kim et al., 2008; Merrill & Wilson, 2007; Molenda & Boling, 2008). According to Januszewski and Molenda (2008), this shift involved the changing influences of postmodernism and constructivism (p. 12). The 2008 AECT definition states, "Educational technology is the study and ethical practice of facilitating learning and improving performance by creating, using, and managing appropriate technological processes and resources" (p. 1). This definition focuses on the three main functions (creating, using, and managing) integrated into the educational technology field. The earlier domains of design, development, and evaluation merged into the creating function in the newer definition. Molenda and Boling (2008) stated in the newer definition that the terminology of the older terms would best be used as technical terms describing steps within the larger process of creation. They felt the term production would also connote more of an application to the creative arts and crafts to generate the actual materials. This creative aspect during the development phase can include the technical expertise of programmers, graphic artists, animators, video directors and audio engineers who join in to create an instructional product pre-scripted by the instructional designers.

After briefly examining the field of educational technology from its inception to its current state, a glimpse at the whole chronological picture reveals an imbalanced pattern. The field began by focusing on the creation of media. It is the consensus that the field grew out of the communication field. But as educational technology developed into its own field, the need for educational value became the focus. As interest in increasing educational value gained
momentum over the last fifty years, the development and production processes began to blur into the distant background. Therefore, the next section examines objectives and outcomes of instructional development both from technical and educational stances.

Objectives and Outcomes

The previous section discussed the evolution of educational technology from a communication field with attention on the media to a field that focuses on educational value and the content of instruction. The objectives and outcomes of the media gained precedence over the technical aspects of media. In discussing the objectives and outcomes of instructional development, it seems fitting to start with one of the best known debates in this area, the Clark/Kozma debate. Clark (1983) published a paper entitled “Reconsidering Research on Learning from Media,” which asserted that media does not “influence learning under any conditions” (p. 445). Clark's argument was that instructional strategies and methods were the primary factors in student achievement. Several years later, Kozma (1991) published an article, “Learning with Media,” that argued media does influence learning and, as such, media selection is significant. Clark used the metaphor of a delivery truck for describing the relationship of content and media.

The best current evidence is that media are mere vehicles that deliver instruction but do not influence student achievement any more than the truck that delivers our groceries causes changes in our nutrition. Basically, the choice of vehicle might influence the cost or extent of distributing instruction, but only the content of the vehicle can influence achievement. (p. 445)

This metaphor was significant because it supposedly proved that the content is more important than the vehicle, as was the developed consensus described in the previous section. Clark (1983) rejected that media attributes, such as font styles (color, size), audio, animation, and
focus techniques, will impact achievement. However, Kozma (1991) argued that what the vehicle metaphor does not address is that the vehicle is still important to the content. Kozma defined three characteristics of media: technology, symbol systems and processing capabilities. The characteristics of technology refer to "the mechanical and electronic aspects that determine its function and other physical features" such as television, radio, and Internet (Kozma, 1991, p. 180). The symbol systems are the elements that give appearance, such as words, text, picture components and diagrams. The processing capabilities refer to what the media can do with information, such as transforming the information (e.g., text to voice).

Several authors (Jonassen, Campbell, & Davidson, 1994; Morrison, 1994; Ross, 1994; Shrock, 1994) in the educational technology field have discussed the significance of the media versus message debate. The debate draws attention to "how researchers and practitioners think about media applications" (Ross, 1994, p. 6). Shrock articulated the importance of this debate as having merit to educational technologists "because it helps us to clarify who we are, what we are trying to do, what we know, and how we might best invest limited resources devoted to future research" (p. 40). Morrison added that it would be "more productive to consider the effectiveness of the whole unit of instruction rather than the individual components" (p. 42). Jonassen et al. also suggested expanding the focus from the comparison of media attributes and instructional methods to "the role of media in supporting, not controlling the learning process" (p. 31). Shrock expressed concern "about increasing indications that our field is being redefined as the application of electronic delivery systems" and discussed concern for acting on either side of the debate (p. 50). Ross concurred.

Assigning too much influence to media can lead to the design/development of sloppy, ineffective instructional materials that are accepted by technologists and users simply because they utilize CBI [computer-based instruction], interactive video, or other 'high-status' delivery media. Assigning too little influence to media, on the other hand, may
discourage reflective thinking by designers about which media can best convey the instructional strategies needed to achieve instruction objectives.  (p. 6)

The Clark/Kozma debate points to the significance of the focus of this research. Through the historical account of the educational technology field, attention originally focused on the media but has since shifted to the attributes of instruction; assigning too much interest to the media development in the early days of instructional development produced material that lacked educational value. However, the field has since shifted its focus to the attributes of instruction and has given little attention to media development processes. Assigning too little attention to the media development processes may discourage the reflective thinking of designers about which media best conveys the best instructional strategies needed to achieve the instruction objectives. In other words, the focus of media effects correlates to the focus of design and development. An imbalance of attention to either design or development may lead to an imbalance in the whole structure of educational technology development. The literature in the field is predominantly written by academics whose attention focuses on the theoretical aspects of educational technology with little impact from practicing developers (Gustafson & Branch, 2007, p. 13). To begin to find a consensus among designers and developers, the following section provides an examination into perceptions of instructional design and development, particularly multimedia development, through current literature on design models, systems, and barriers within the development processes. The instructional design and development systems and models could be considered a sub-section of the cultural and historical foundations of instructional design and development as they are part of the tools and rules of the instructional technology field.
The most notable observation in instructional development research is the broad range of perceptions and environments that fall under the term development. First, instructional development can be distributed through multiple media formats, such as books, images, audio/video, animation, CD-ROM, e-learning, and computer-assisted instruction. These different forms of instruction carry common elements. They are all part of human communication and deliver some form of instructional message. These messages are translated in a language that is linked to social relationships and the means for social activities (Agha, 2007). Second, the various media are almost always used in conjunction with other media, such as images within a textbook or audio within a video. In addition, they are pre-planned, with the contribution level ranging from one person to hundreds. People will learn spontaneously, but instructional development media are planned or designed with a specific goal or outcome of learning. Hence, media development becomes a difficult task in describing such a broad range of materials and contribution levels applied to these materials. Morrison, Ross, Kemp, and Kalman (2010) responded to this ambiguity in their definition of instructional development:

Instructional development is often interpreted in different ways and sometimes used interchangeably with instructional design. Frequently, instructional development is defined as the production process, that is, the translation of the instructional design plan into the instructional materials, such as print, video, multimedia, or Web-based materials. Another definition describes instructional development as the management function in systematic instructional planning. This term includes assigning and supervising personnel, handling allocated budgets, arranging for necessary support services, and checking time schedules for compliance. (p. 7)

Another ambiguous term is multimedia. Multimedia has been called many names over the years, such as computer-aided instruction, programmed instruction, web-based learning and e-learning. This author chooses to stay with the general term of multimedia to accommodate the
changing technology. For instance, computer-aided instruction limits this perspective to computers and may not fully represent newer mobile technologies. Multimedia can combine audio, graphics, interaction, video, and animation. Mayer (2009) asserted the argument for multimedia use is based on the premise that learners can better understand concepts when words and pictures are combined rather than through words alone. This follows Paivio's (1971) dual code theory.

A faculty member can place some images and an audio clip into his/her presentation, and it becomes a multimedia product. Nowadays, with social networking, the Internet, and user-friendly software, everyone can be a multimedia developer. Visit any Myspace page or blog and one would see a multitude of graphics, embedded videos, slideshows and music displayed that in a sense teaches others about that individual. Therefore, how is professional multimedia instruction distinguished from this range of multimedia products? Can it be just as ambiguous as Supreme Court Judge Potter Stewart's 1964 statement on pornography, "I know it [is pornographic] when I see it"? Certainly, a faculty member using such tools as the ASSURE model (Smaldino, Lowther, Russell, & Mims, 2014) can produce effective multimedia instruction. So then, the question is how can this range of multimedia products be distinguished? One method for distinguishing a professional level of multimedia is through its development processes.

Multimedia development involves a complex mix of talents rarely found in a single individual. At one level, it is an artistic exercise in design and production, demanding flexibility and careful attention to imaginative display of content. At another level, it is a disciplined application of systems developers, requiring careful attention to testing, documentation, and scheduling, and imaginative exploitation of an ever-changing technology. At another level, it is a highly professional teasing out of content experts' experience and knowledge of the material. It also demands instructional, editorial, and publishing expertise. (Keen, 1997, p. 275)
The similarities between Morrison et al.'s (2010) and Keen's (1997) definitions of instructional development and multimedia development is apparent. There are different levels of interpretation that call for both various sets of technical skills and management skills. For the purposes of this paper, instructional multimedia development is defined as the systematically planned translation of a scripted instructional objective into a media-enriched product through the collaborative efforts of multiple talents disciplined in the creative, technical and instructional design fields and for the management of these collaborative processes for the purposes of reaching an instructional objective.

Kemp and Smellie (1994) offer three levels of classes or superiority in the creation of media: mechanical, creative, and design. Mechanical is routine actions, such as cutting and pasting, that require little planning or creativity, for example a user on Myspace. The creative level involves more planning and consideration into the choice of words, images or other audio/visual forms. Good design principles are applied. This creative level is comparable to the faculty member producing a PowerPoint presentation or web page. The highest level Kemp and Smellie identified is the technical level. In this level designers and teams assemble materials in a learning environment. The materials may require technical expertise, such as video production or computer programming. Molenda and Boling (2008) state this level requires "combining subject-matter expertise, pedagogical methods, visual design knowledge for screen layout, and Web-programming expertise; and since the project could entail people collaborating over a period of time, project management would also come in to play" (p. 100).

Development research in the educational technology field typically focuses on the development from the outcome perspective. That is, the research identified through the keyword development is seldom on the development processes of this collaborative activity but is oriented
to the intended outcome of the development in areas such as collaborative learning and the impact of the media. Molenda and Boling (2008) stated, "Research on the creation of A/V materials ha[s] revolved around three major issues: the reception, interpretation, and retention of visual images; the perception, interpretations, and retentions of auditory material; and the interaction of the visual and auditory mechanisms in multimedia formats" (p. 90). The lack of literature on development processes makes it difficult for practitioners to gain knowledge in this area of instructional development. Therefore, the models of instructional development discussed in the next section attempt to add some insight into the processes.

**Systems, Models and Limitations**

All levels of instructional multimedia development contain some degree of rules. Rules can be implicit or explicit and interpreted as a set of laws or policies that either guide or place barriers on processes. Rules can be bad or good. They can be within a system; have chosen models as their guidelines; and include other limitations, such as staffing, technical expertise and capability, and organizational rules. As an example, these rules can be interpreted through the classification of Kemp and Smellie's (1994) levels. At the mechanical level, the rules to achieve a goal are mostly defined by technical limitations, both in the software they use and in the skills the individuals attain. Many developers at the lowest level may not use a systemic approach or follow some model and, as Kemp and Smellie stated, would require little planning. The creative level of multimedia production begins to apply good design practice, typically derived from systematic procedures and models. Many of the instructional design models in the field can be used at this level of creation (ADDIE, ASSURE, Kemp model, etc.). Teachers and other individuals at the creative level are still limited by their individual level of technical expertise.
The technical level is the highest level of instructional multimedia development. Here, the development environment is team oriented with solid considerations for systemic processes and instructional design models. The technical expertise comes from multiple members in the production process. Larger product development projects have greater complexity. The characteristics of the project will naturally make up the composition and size of the multimedia development team, the complexity of the project, and the use of various media components and applications (England & Finney, 1996). “As project complexity grows, so does the need to collaborate and to coordinate activities” (Spector, 2001, p. 31). Instructional development teams vary depending on the type of organization and complexity of the project (Litchfield, 2006). Inter-organizational collaboration brings a whole other dimension to the complexity, as the organizations more than likely have different organizational rules and technical experience levels. Thus, the rules that are applicable to large-scale instructional development can come from a multitude of sources: the policies and regulations of an organization, the system’s structure, the chosen model, the complexity of a project, and technical experience (hardware, software, and skill levels). An examination into the strengths and weaknesses of instructional models and the limitation of instructional development follows and provides insight into the systems that need to be considered during large-scale production.

Models of Instructional Design

Instructional design models are often used in the process of instructional development to guide practitioners in the field. No single model matches the various design and development needs of all environments (Gustafson & Branch, 2002), so numerous types of models exist (Andrews & Goodson, 1980; Gustafson & Branch, 2002; Twelker, 1972). Models can take on a
linear form (Reiser & Dick, 1996) or circular form (Kemp, 1977). This section briefly describes a few different instructional systems design (ISD) models with particular focus on the development phase of each model. The instructional systems design models are presented here to provide a sample representation of how the “development” phase of instructional development is depicted in the literature on models. The most generic model is the ADDIE model, which is an acronym for analysis, design, development, implementation and evaluation (Molenda, 2003). Januszewski and Molenda (2008) argued this model is not an actual, fully developed model but instead serves as a convenient labeling system for the instructional design processes. Molenda and Boling (2008) described the processes in the development phase as 1) making decisions pertaining to the type of activities and materials; 2) drafting the materials and activities; 3) testing the materials and activities with a sample of the intended audience; 4) revising, refining, and producing the materials and activities; and 5) training instructors and adjuncts using the material. ADDIE has also been examined in the software development industry. Shor (2012) identified that one of the problems with the ADDIE is that it “does not differentiate between the needs of small instructional design projects… and a multi-year effort to design and implement a blended learning program” (Shor, 2012). Shor suggested utilizing five practices from the information technology (IT) industry to transform ADDIE into an ADDIE+. A hybrid of instructional technology and software development can better support large-scale instructional development projects, such as the PDC. Shor lists these five practices for the ADDIE+ as: 1) guiding principles, 2) a team model, 3) modifications to the traditional ADDIE process, 4) a risk management discipline, and 5) version control (2012, p. 58).
The next model is one of the best known systems approach models that strays from the more generic ADDIE sequential model. The Dick and Carey model (2005) was designed as a planning guide. Molenda and Boling (2008) state:

A distinctive feature of the Dick L. Carey, and J. O. Carey model is that it recommends specifying the assessment instruments prior to developing an instructional strategy. Their concept is that if the developers can be clear enough about what and how they will be testing, they have a much better idea of what sort of instruction will succeed. (p. 110)

This model does not have a clearly defined stage for development, but it has a guided process in which “develop and select instructional materials” and “implement prototype interaction” would commonly fall under the development team (Molenda & Boling, 2008, p. 110).

The next model was developed through a consortium involving Syracuse, Michigan State, U.S. International University, and USC (and was later joined by Indiana University) in the 1970s called the Instructional Development Institute (IDI) model. The IDI model divides the creation process into three major phases (similar to the current AECT definition’s creating phase). This model defined the development stage by identifying objectives, specifying methods, and constructing prototypes.

A fourth model, Inter-service Procedures for Instructional Systems Development (IPISD model), is described by Branson (1978) of Florida State University. Foshay, Villachica, and Stepich (2014) stated that:

Molenda also traces the development of ID methodology. He attributes its origins to the application of operations research to training development in the military, where the emphasis was on training as part of integrated operational systems, such as weapons systems. This training was provided as part of a larger system that defense contractors delivered to the military. The methodology for this systems view of training was developed at Florida State University as the Instructional Systems Development (ISD) model. The methodology was in itself a systematic method for development of training. (p. 42)
Also known as the military services ISD model, it was originally developed by Florida State University in 1973 for the U.S. Department of Defense and was later adopted by the Army, Navy, Air Force, and Marines. This model was designed for large-scale training needs. The development stage consists of 1) specifying the learning activities and/or events, 2) identifying the instructional management plan and the intended delivery systems, 3) reviewing and selecting existing materials, 4) developing the actual instruction, and 5) validating the developed instruction.

A multimedia design model by Reeves (2006) is broken down into four phases: analysis, design, production, and evaluation. Each of those sections is further divided into three categories: process, team, and product. Reeves lists the process of the production phase as authoring interactions, creating graphics, preparing adjunct materials, conducting preproduction, conducting production, conducting post-production, mastering optical media, and integrating optical media and authoring code. Reeves also identified the team members during each phase. While this model mainly touches on the actual processes of multimedia, little additional information is provided in the literature. New perspectives, theoretical foundations and workplace problems strive for prescriptive methods for instructional development. Therefore, the next two articles contribute to model expansion.

Durdu, Yalabik, and Cagiltay (2009) developed and tested a distributed online curriculum and courseware development model (DONC²) for inter-institutional teams. The authors asserted that to develop an effective courseware model, some convergence should occur among instructional design, software engineering and human-computer interaction disciplines. Durdu et al. identified that some recent contributions in instructional design models are the inclusion of project management and omission of the general ADDIE sequence approach (Morrison et al.,
2010), rapid prototyping (Tripp & Bichelmeyer, 1990), iterative development models (Detweiler, 2007), and agile methods (Highsmith, 2002). The agile development approach differs from former models because it emphasizes releasable software in short time periods. It focuses on the functions required to collect, react to, and deliver information quickly. An example of the agile approach and iterative development model is the adaptive software development (ASD) model (Highsmith, 2002), which emphasizes project management and collaboration practices (Highsmith, 2002) and "adaptation rather than optimization" (Durdu et al., 2009, p. 234). The ASD is used as the primary adopted software development approach for the DONC$^2$ study.

Durdu et al. (2009) collected data through three sets of interview questions and examination of four distinctive courses. The DONC$^2$ model was then developed from the results of the study in a circular structure to reveal three layers and four components to each layer. The layers in the model are the management layer, integration layer, and micro layer, each of which proceeded over time in the form of phases and components. The components are iteration, concurrency, continuous feedback, and collaboration. Durda et al. suggested future investigation could examine the DONC$^2$ model as a complete courseware development case.

This model provides a cyclic process for gathering data and conducting research, but it also identifies several components of the development process that most models omit, such as technical support considerations and recruitment/retention, which became relevant to the P.R.I.D.E. Digital Curriculum during the production and implementation process. Issues such as technical support can affect agencies’ restrictions on individuals updating their Flash player for multimedia playback without their IT Department’s support. Retention can hold back the ability to complete projects on time if key members of the team leave. How these workplace problems are handled provides pertinent information to practitioners.
In another design model, Khan (2008) conducted a case study on the use of case studies as a methodology for designing educational software. The study provides descriptive information on the processes the interdisciplinary development team encountered while focusing on design implementation and testing aspects of a computer simulation. Data collection of archived records and the technical reports from an educational software design project contributed to a qualitative analysis on the use of a case study in the designing phase of educational software. Khan cited the following features identified by various researchers about why case studies can be a valuable tool for both assessing and designing instructional material:

- is a highly detailed analysis of an instance in action (Macdonald & Walker, 1975)
- creates deep understanding of particular people, problems, or situations (Patton, 1990)
- permits interplay between theory and data, which allows a closer matching of conceptual intent and empirical evidence than mere quantitative research (Rueschemeyer, 2003)
- has an ability to reveal properties of class to which the study belongs (Guba & Lincoln, 1981)
- provides a basis for subsequent development of theory (Kenny & Grotelueschen, 1984) (as cited in Khan, 2008, pp. 424–425)

Khan also identified key properties of case studies detected in the literature from other researchers:

- smaller sample sizes (Gomm, Hammersley, & Foster, 2000)
- is highly descriptive (Merriam, 1988)
- unveils interactions of “inseparable variables” that are part of the phenomena being studied (Yin, 2003, as cited in Kahn, 2008, p. 425)

Because of these benefits, Khan (2008) asserted case study is an appropriate methodology for designing educational software. The team in Khan's study 1) identified the goals and pedagogical theory, 2) conducted a case study, 3) created the conceptual design of the simulation, 4) created the prototype, 5) field tested the product, and then 6) made appropriate revisions to the product. The methodology of Khan's study consisted of an assessment of the
project being developed to list all the design features and locate the source of these conceptual decisions. The design decisions were coded as originating from disciplinary knowledge, practitioner knowledge or lessons learned from the case study. Results indicated 16 out of the 23 design features came from the case study conducted prior to the design. Practitioner experience and literature review influenced 7 out of 23 design features. Kahn's article did not provide future research, but elaborating further on design team processes, as seen in Kahn’s study, would be in line with this current research. Also this study confirms the use of case study as a useful assessment method and as useful for gathering information on the users, teachers, and others involved to determine content and patterns of learning within the context.

**ADDIE versus Iterative and Agile Models**

The ADDIE model is the basic model for instructional systems development. "Every phase in the ADDIE model identifies specific types of activities and outcomes" (Boot, Nelson, Van Merriënboer, & Gibbons, 2007, p. 918) that different specialists are responsible for. The ADDIE model, and many similar models, is the classical sequential approach (Durdu et al., 2009). Newer models differ in that they do not apply any specific sequence. Visscher-Voerman and Gustafson (2004) state, "Activities from traditional ADDIE models are reflected in practice, but … the design approaches and strategies designers use are far more varied and selective, and also more cyclic and integrated" (p. 72). Khan (2008) stated that educational technology designs "are implemented with a hypothesized learning process of the user in mind" (p. 428). If the hypothesis is refuted, then alternatives are generated, which Khan describes as an iterative process. Durda et al. asserted that commercially proven software practices have introduced iterative and agile methods. A benefit of this method is faster development (Durdu et al., 2009),
which some authors refer to as "rapid prototyping" (Visscher-Voerman & Gustafson, 2004, p. 81). Brill et al. (2006) used this iterative method in their case study, while Boot, Nelson, Van Merrienboer, and Gibbons (2007) argued that approaches such as revisiting preceding phases and rapid prototyping are often not feasible in large projects where the designer and producers may be separated by time and space.

Systemic Models: Strengths and Weaknesses

Gustafson and Branch (2007) identified the benefits of instructional design models as helping to conceptualize representations of reality through simple depictions of a more complex structure. Models are generic enough to be "applicable across multiple contexts" and can "provide conceptual and communication tools that can be used to visualize, direct and manage processes" during product development (p. 1). Merrill, Li, and Jones (1990) suggested benefits of an effective model can mean savings of development time and resources. The models attempt to be narrow enough to address specific types of instruction while still being broad enough to accommodate a larger array of situations. Nevertheless, because of the broad sense in this area, the models do not provide specific events and considerations that actually occur during the development stage. Critics of the current models also claimed they are too slow and clumsy (Gordon & Zemke, 2000) and lack empirical testing (Gustafson & Branch, 2007). Reeves, Herrington and Oliver (2004) asserted that educational technology is a design field and its goal should "inform future development and implementation decisions" (p. 62). Every phase in the ADDIE model identifies specific types of activities and outcomes conducted by “different specialists” (Boot, Nelson, et al., 2007, p. 918). Gustafson and Branch (2007) contend that "while ADDIE illustrates the conceptual components of ID, there remains a need to indicate how
to practice the ID process" (p. 12). Ross et al. (2008) also acknowledged little historical research aims at the design processes and products. According to Ross et al., the ID models continue to be an important part of the educational technology field because they help substantiate the design process, but they are limiting because they are too abstract to inspire and support designers in their professional practice. Design and development research provides a method to test theory and validate practice (Ross et al., 2008). Richey and Klein (2007) defined design and development research as "the systematic study of design, development, and evaluation processes with the aim of establishing an empirical basis for the creation of instructional and non-instructional products and tools and new or enhanced models that govern their development" (p. xv). Research in this area can establish new procedures, techniques, and tools. This research seeks to develop knowledge grounded in data systematically derived from practice.

A critical limitation of the instructional systems model is the lack of integration of the instructional design phases (Merrill et al., 1990). Gustafson and Branch (2007) identify this as a current issue: "Unfortunately, there is [a] relatively small amount of high-quality empirical literature to support the contribution of ID to designing effective and efficient instruction" (p. 12). Little detailed attention is evident regarding the product development stage of instructional development (Molenda & Boling, 2008). Molenda and Boling suggested this is probably because "authors of ISD models are not themselves expert in the various arts of production and hesitate to spell out these processes in detail" (p. 113). Gustafson and Branch confirm models were "designed by academics who have few opportunities to test them in authentic situations" (p.13). Researchers who can perform the dual role of both instructional developer and researcher have a unique opportunity to contribute to the educational technology field in examining current theories and models within the creation process.
Barriers of Instructional Development

One study (Berge, 2002) examined the perceptions to barriers in distance education. Results from 448 participants in the business and corporate education industries were surveyed on 64 barriers to distance education. Respondents were asked to rate the 64 barriers on a 5-point Likert scale. The participants were asked what they thought were the most common forms of distance education delivery systems. The majority (237) said Internet and web-based and coming in second were CD-ROM and multimedia (80). The respondents were also asked to characterize their organizations’ level of maturity in distance education. Barriers identified in Berge's study were grouped into 10 categories with similarities. Lack of technical expertise and support came in as either the first or the second greatest barrier. Organizational change also consistently came in at the top two rankings, but this barrier was more likely noticed for organizations that were still in the early stages of distance education. Evaluation/effectiveness on average came in at third or fourth ranking. In the middle of the ranking was access. The student support services noticeably moved down the ranking as the capabilities of the organizations increased in distance education. Faculty compensation and time moved up in the rankings as the maturity level increased. Time was ranked as the greatest factor for respondents who worked in higher education. Legal issues were consistently a low concern as a barrier. Threatened by technology started at the end and gradually moved to a middle ranking for organizations that were more mature in the delivery systems. Administrative structures were considered the lowest ranking of all. Using an ANOVA measurement, participants from organizations that were more capable of delivering distance education perceived fewer barriers. Berge concludes that “organizations need to recognize that it is common for the perceived barriers to be greater, perhaps seemingly
overwhelming, in the initial stages of organizational maturity in distance education. These normally abate as the organization matures” (p. 187).

Giller and Barker (2006) describe multimedia as a learning product that “combines ‘text’, ‘audio’ and various forms of ‘image’” to create an effective and user-friendly experience for students (p. 303). The authors provide two different approaches to designing multimedia courseware: through trial and error and through a theoretical knowledge-based approach. This latter approach was investigated through analysis of two multimedia products completed by the authors. The life-cycle of multimedia went through several phases, such as planning, design, content specification, material production, development and dissemination. Giller and Barker, who had identified 81 commonly occurring problems and 14 identifiable causes for multimedia project failures, translated the causes into key strategies for avoiding multimedia project failure:

1. Appropriate project management policies
2. Efficient communication strategies
3. Effective quality control strategies
4. Reliable procedures for product development
5. Thorough analysis of client, content, delivery and users
6. Sufficient instructional design input
7. Comprehensive content scripts
8. Explicit design specification
9. Meticulous evaluation strategies
10. Adequate preparation
11. Detailed production techniques
12. Sensible file-naming strategies
13. Practical resource-planning strategies
14. Logically organized backup and file-transfer strategies

(Giller & Barker, 2006)
They compared the list of reasons for failure to the two projects for consensus of guidelines and strategies. The effectiveness of the proposed methodology was then compared to the 14 strategies with the two multimedia courseware projects. Giller and Barker (2006) did not clearly define their methodology for comparison. They defined the phases of a typical project life-cycle through their collected findings, including procedural guidelines, sample documentation, training strategies, and structured work-flow diagrams. Giller and Barker suggested the comparison of projects to these strategies offer flexibility and reliability. Therefore, these strategies can be a starting point for investigating the collaborative activities involved in the development and implementation of the P.R.I.D.E. Digital Curriculum.

Diffusion

When instructional designers and developers work toward creation of a new instructional product, they must keep in mind the end user and the diffusion of that product. “Diffusion is the process by which an innovation is communicated through certain channels over time among the members of a social system. Diffusion is a special type of communication concerned with the spread of messages that are perceived as new ideas” (Rogers, 2003, p. 35). In Rogers’s (1995) book, *Diffusion of Innovation*, he examines the theory of how, why and at what rate new ideas and technology spread and become accepted, or not, in a group or society. Rogers identifies four major factors influencing the process of diffusion: 1) innovation (idea, practice, or object), 2) method of communication, 3) time (length of decision process), and 4) social system for which the innovation is introduced (Rogers, 2003, p. 11). Rogers (1995) claimed there are five intrinsic factors that contribute to the success or failure of an innovation from a user’s perspective. First is the relative advantage or benefit the new innovation has over a pre-existing idea, practice or
object it would replace or accompany. Second, to what degree is the innovation compatible and able to assimilate with the current social or situational structure? Third, what is the complexity or ease of use the innovation has for the user of that innovation? Fourth, does the user have the option to try out and experiment with the innovation? If the user has the opportunity to try out the innovation, his/her experience as indicated in the previous factor will influence his/her likelihood of adoption. Fifth, observable benefits of the innovation can be seen by others, and as such, the innovation can spread through networks. Straub (2009) adds that how a group perceives a technological innovation will affect the final use or nonuse of the technology.

Surry (1997) identified two focal categories of IT diffusion research. The first one is a macro approach, which often follows systemic change theories examining the organizational change of innovations. Then there is a micro approach, which focuses more on specific innovations and adopters in product utilization theories, examining the product utilization of adopters in innovation. Surry further breaks down the perspectives of technology into two categories: determinist and instrumentalist. Determinists see technology as the main cause for social change and technological growth as revolutionary leaps forward. The instrumentalists, on the other hand, view technology as a tool and technological growth as an evolutionary process influenced by social conditions and human control.

By examining Surry’s (1997) model, we see the summary of two philosophical perspectives to a goal: developer and adopter.

The developer, or architect, of superior technology is seen as the primary force for change. The underlying assumption of developer based theories is deterministic in its belief that superior technological products and systems will, by virtue of their superiority alone, replace inferior products and systems. Developer based theories of diffusion see change as following directly from a technological revolution…. Diffusion through technological superiority is the implicit goal of the process…. The instructional development process assumes that technological superiority is a sufficient condition that
will lead directly to the adoption and diffusion of innovative products and practices. (Retrieved from http://www2.gsu.edu/~wwwitr/docs/diffusion/)

There is an inherent determinist bias of the developer’s belief, taken from the *Field of Dreams* film, that if they build it, they will come. Building a superior technological product does not guarantee the product will be adopted by the end users. “Instructional technologies (*sic*) greatest challenge is not developing effective products, but developing effective products that people want to use” (Surry, 1997). Contrary to the developer’s philosophy, adopter-based theories focus on human and interpersonal aspects of diffusion. The human aspect is argued as the force of change because "all structures and machines, primitive or sophisticated, exist in a social context and, unless designed for the sake of design itself, serve a social function" (Segal, 1994, p. 2). In other words, a user-oriented instructional development product may be technologically superior, but the “the opinions, needs, and perceptions of the potential adopters are seen as the primary forces that influence adoption” (Surry, 1997). Burkman (1987) was one of the first theorists to examine diffusion from an end-user, product-utilization perspective. Burkman suggested a five-step model for utilization of a user oriented instructional development process: 1) identify the potential adopter, 2) measure relevant potential adopter perceptions, 3) design and develop a user friendly product, 4) inform the potential adopter (of the product's user friendliness), and 5) provide postadoption support (pp. 440–441).

**Summary and Areas of Consideration**

This literature review has presented several areas of focus for the design and development of educational technology. The history of educational technology was summarized to establish the evolving perceptions of practitioners in the field. This brief history showed that
the concentration of media production in the industry failed to provide educational value in the products. Practitioners in the field of educational technology identified two perspectives in the Clark/Kozma debate. First, they identified a type of justification that the media was not as important as the message. While Clark's (1983) argument contributed to the decline of focus on media development, Kozma (1991) contended years later that the media is also important to the message. Several scholars, as established earlier in this review, asserted that there needs to be a balance between the two opposing opinions and that the balance must include attention to both the design and development processes in the literature. A great deal of attention has been given to the design aspects of educational technology, but the development processes have received little attention.

The articles then identified several issues in design and development research. First, the standard design model known as ADDIE is not a complete model; it is a work in progress. Researchers and practitioners often follow this model but continue to evaluate and make suggestions about how this model can be improved or be changed to fit the needs of particular design projects. Second, in an attempt to improve the ADDIE model, new models and methods have evolved. A few of the articles presented here commented on the need for iterative or agile methods.

The review began by noting that examination of practical activity needs to include both an historical view and an identification of the mediated tools used in the activity. The literature has shown that the perceptions of media production and the technical aspects of producing instructional media have shifted from a focus on media to a focus on design elements and the need to find a balance between design and production activities. More people have become capable of using multimedia tools at lower levels, but defining the work activities of a large-scale
production can provide insight into the current training needs of instructional technologists. The next two sections of the literature review examine the social and activity theoretical perspectives of instructional design and development.

The Social Process of Instructional Development Activity

The development of large-scale instructional media is a social process joining multiple individuals with varied skill sets. The PDC was an inter-organizational collaboration project joined by multiple organizations and cultures. This section examines the collaborative nature of development processes by looking at teamwork, partnerships, inter-organizational relationships and collaboration. Looking at the social aspects of the development team will provide insight into workplace activities involved within the development process. Teamwork here is defined as "work done by several associates, with each doing a part but all subordinating personal prominence to the efficiency of the whole." Teamwork is typically connoted as the joint effort within one department toward its objective goals. Partnerships, on the other hand, are external individuals or groups who have "a relationship resembling a legal partnership and usually involving close cooperation between parties having specified and joint rights and responsibilities."

Instructional designers and subject-matter experts work in unique teams that can involve working with members outside their organization and environment (Howell et al., 2003; Litchfield, 2006). Given that cultural environments can influence the design and production process (Durham & Arrell, 2007), an investigation into the development processes influenced by the cultural workplace environment cannot be accomplished without consideration of the
differences between inter-organizational and intra-organizational workplace cultures (Larson & Lockee, 2009). Examining the intra- and inter-organizational relationships provides insight into how the development team processes ideas and data from external forces, such as the designers, clients and learners and the complexities of joint ventures in an instructional development project to identify and highlight contrasting values and perspectives (Richey et al., 2007; Wilson, 2002). A component of teamwork, partnerships, and inter-organizational relationships is collaborative work. **Collaboration** is "to work jointly with others or together especially in an intellectual endeavor" and "to cooperate with an agency or instrumentality with which one is not immediately connected." The significance among the terms **teamwork**, **partnership**, and **inter-organizational relationship** is the differences in the purpose, motivation, and goals of a collaboration for the internal and external groups. At the heart of an instructional development project are the designers, operational tools and methods for development. This section examines these components from a social-process perspective.

**Designers**

In large-scale projects, instructional designers work closely with instructional developers and need to communicate effectively with the developers. Instructional designers apply plans and strategies as set forth in the existing theories and models, but they must also directly respond to environments, colleagues, and tasks (Wilson, 2002). The roles and demands of instructional designers have changed (Kim et al., 2008). A perception exists that instructional designers and technologists should know how to use technology (Kim et al., 2008; Merrill & Wilson, 2007), but this is not always the case, as educational technology programs primarily teach students research concepts. Even if the role of instructional designers is merely to create the script or
blueprint of the product, it must be clear and logistically feasible to translate to the development team. Designers create a design based on the analysis phase and then transfer the design through a training blueprint or storyboard to the producers in the development phase.

**Partners**

The positive benefits of developing partnerships entice organizations to seek productive relationships with different agencies. The selection of these partners was examined in Pidduck and Carey’s (2006) research. A consortium partnership was created to facilitate collaboration and cooperation among different universities toward goals that individually could not be achieved. The results identified clear evidence of a social network and a positive influence on developing new connections by combining resources, sharing knowledge, increasing delivery time, and promoting access to foreign markets. More importantly, Pidduck and Carey’s results revealed a complexity to partner selection and gaps in the research on this partnership process and found understanding multidisciplinary collaborations is an essential element for policy development, program success, and improving outcomes. Thornton, Okundaye, and Harrington (2007) identified a growing trend in training collaborations for child welfare agencies and local agencies such as universities, law enforcement, and health agencies. Hence, research on partnership identifies the growing trend and benefits. A study on the collaborative methods of the P.R.I.D.E. Digital Curriculum development team can expand research on partnerships to identify collaborative activities in the process of instructional development.
Inter-Organizational Relationships

Instructional development projects can occur through a partnership with other organizations, and large-scale development of educational technology may involve the collaboration of different organizations with specialized skills and knowledge. These inter-organizational partnerships refer to the joint effort of two or more organizations working together to achieve a shared goal (Pfeffer & Novak, 1976). A main cause of misunderstanding is that people from different environments perceive things differently (Enquist & Makrygiannis, 1998). A case study conducted by Durham and Arrell (2007) identified that the cultural difference between institutions is significant when designing and developing collaborative material. Each agency has certain rules and procedures within its workplace environment that likely will influence the collaboration. In an article focusing on the theoretical framework of inter-organizational relationships, Geisler (1995) examined industry and university collaborations, seeking the interaction in inter-organizational relationships. This group of theories explores the internal development of the relationships, focusing on dynamic relationships that evolve through commitment, trust and communication patterns. Heide and Miner (1992) suggested “inter-organizational cooperation might be influenced by adjusting the interaction properties of relationships” (p. 285). Theories related to interaction attempt to explain the development, evolution, and survival of inter-organizational relationships. The resource interdependence theories reflect organizations are motivated to engage in collaboration when all organizations involved perceive benefits and resources.

Geisler (1995) identified five determinant factors that can influence success or failure: 1) relationships with focal university, 2) relationships with industry, 3) internal management, 4)
research and technology strategies, and 5) individual attributes of the founders and managers (p. 224). Last, Geisler identifies that interaction levels influence survivorship, acknowledging an unspecified range of optimality for interaction will increase the likelihood of survival but too intense a relationship will decrease survivorship. Geisler concludes that a mid-range theoretical framework may assist policy makers in three ways: 1) in decisions to support or discontinue support for joint ventures, 2) in ways to improve the system of resource allocation, and 3) through empirical data to provide predictable arrangements that fail, thus improving guidance and chance of survival. Harbison and Pekar (1998) asserted that strategic alliance, through inter-organizational relationships, has grown an additional 25% each year since 1987 (p. 25). However, Ajami and Khambata (1991) found that these alliances have limited lifespan, averaging about seven years.

Robey, Im, and Wareham (2008) investigated past theoretical foundations of empirical research in inter-organizational systems and found three main themes: adoption, governance and organizational consequences. The adoption articles focused primarily on the paradigm of innovation, typically citing Rogers (1995) diffusion of innovation. Variables consisted of external environment, organizational readiness, innovation characteristics, perceived benefits, transaction characteristics, resource dependence, network externalities and cultural/institutional forces (p. 502). The article is relevant to the impact of governance focused primarily on transaction cost theory, which investigates transaction characteristics and system capabilities. The last theme, organizational consequences, examines strategic, operational, and social impacts on organizations involved in inter-organizational relationships. Unlike adoption and governance, for which theories were limited to a few, organizational consequences have a broad array of theories. Robey et al. concluded that the “review reveals that theoretical diversity is both
abundant and valuable because different theories address different facets of the ‘inter-organizational systems’ phenomenon” (p. 507). They also noted that the skeptics may say this diversity represents the field of inter-organizational systems is lacking theoretical substance. They challenged researchers in the field to focus on qualifications of adoption and implementation of technologies that can demonstrate specific features or particular characteristics of consequences. They also advise the theme of governance should be sensitive to social and behavioral economics.

Combining multimedia development research with research in inter-organizational and intra-organizational interaction may uncover problems within the communication process of the educational technology design paradigm based on the varied opinions of what constitutes good design within and between the organizations (Chan, Ho, & Tam, 2001; Powell, Koput, & Doerr-Smith, 1996). Utilizing activity theory analysis can also provide insight into inter-organizational collaboration and advantages of increasing labor skills through social production of a project. Daniels et al. (2013) state:

For while learning may not, for employers and managers, be the principle (sic) intended outcome of organisational activity, it may be argued that raising the quality of labour-power is an intended outcome. Indeed raising the quality of organisational labour-power potential is, in one sense, a definition of the ‘expansion’ of learning in practice that Engeström (1987, 1999) promotes. Explicit attention should, therefore, be given to the social production of labour-power as the object of activity systems and to accompanying social antagonisms (or contradictions). (pp. 72–73)

Teams and the Division of Labor

Richey, Morrison, and Foxon (2007) identified three common work teams in instructional development: virtual teams, cross-functional teams, and contractor-led teams. Instructional
development teams varied depending on the type of organization and complexity of the project. Wellins, Byham, and Wilson (1993) found that teams are both business entities and social groups, with key elements of team development being commitment, trust, purpose, communication, involvement, and process orientation. Spector (2002) contended that the advances in technology have made planning and producing more difficult and labor intensive. Merrill and the ID2 Research Group (1998) state that multimedia instruction requires 300 person hours of development time for the creation of a single hour of interactive instruction (as cited in Molenda & Boling, 2008, p. 128) because “as project complexity grows, so does the need to collaborate and to coordinate activities” (Spector, p. 31). Saettler (2004) asserts that one of the most critical elements of a team working on an instructional design project for a successful completion is "accurate, genuine, and timely communication" (p. 115). Additionally, an increase in globalization and decentralization of organizations is changing how instructional designers communicate with the design and development teams, such as through virtual methods of communication (Richey et al., 2007).

Thornton et al. (2007) present a model for multidisciplinary collaboration through a case study of Maryland’s Guardianship Assistance Project (GAP). Important elements of collaboration are communication, negotiation, compromise, and cooperation. Cooperation refers to a willingness to share knowledge, values and skills while also learning from others and avoiding or working through conflict constructively. Thornton et al. suggested training in multidisciplinary strategies may help to overcome barriers of the team members. The Thornton et al. research results indicated seven major strategies from this collaboration process: ample time for starting and training the process, cooperative participation of the training, solution focus, general language usage (versus research jargon), multiple methods of training, process
perspective, and awareness of resistance to change. The authors conclude that documenting methods and experiences of various types of collaboration can benefit future work involving systems of federal, local, state, and university partnerships. Durdu et al. (2009) noted that "collaboration is required to balance unpredictable and predictable specifications" (p. 233). Visscher-Voerman and Gustafson (2004) claimed that social aspects in project management are obvious in communicative and pragmatic processes in which the stakeholders and users are part of the decision-making process. They suggested using formative evaluation to stimulate communication and collaboration. Durdu et al. also asserted that "collaboration is essential for success and it can be achieved by effective communication" (p. 244).

**Management**

Brill, Bishop and Walker (2006) examined effective competencies of project managers in the workplace. The Delphi survey method was chosen for data collection from 147 project managers with more than 20 years of experience. A round of surveys was conducted to identify 117 success factors for project management. The research team then identified 78 trainable knowledge and skills elements from the 117 success factors. The 78 knowledge and skills factors were sorted into eight specific categories: 1) problem-solving expertise, 2) leadership expertise, 3) context knowledge, 4) analytical expertise, 5) people expertise, 6) communication expertise, 7) project administration expertise, and 8) tools expertise (p. 123). The ninth category consisted of the remaining 39 factors, titled personal characteristics. The project manager experts identified the top three trainable competencies as 1) know the goals of the project, 2) know the scope of the project, and 3) conduct business ethically. The 78 trainable competencies listed in Brill et al. help guide attention to potential strengths and failures in project development.
In another study, Newton and Doonga (2007) examined the experiences and perceptions of training managers and the training suppliers in e-training for corporate clients. Two questionnaires were used to identify information from the companies who use e-training and to providers of e-training to identify the breadth and depth of services provided. A total of 21 users and 26 providers responded to the online questionnaires. In addition, interviews were taken from training managers (n = 7) and providers (n = 4). Two problems with e-training were the compliance of interoperability and weak reporting systems provided by current learning management systems. Three common justifications for e-training were 1) everyone else is doing it, 2) monetary savings, and 3) the need to deliver training more efficiently. A major weakness for corporate training was the lack of strategic business objectives measuring connections between learning, employee performance, and profitability. It was noted that many of the providers did not play an active role in the implementation and dissemination of the products.

Operational Tools and Methods of Development

Design and development research in educational technology seeks to find efficient methods for processes involved in producing instructional material. In addition to looking at models and processes in the design and development stages, others look at the tools and procedures used to produce the products. Operational tools contextualize the instructional development process (Gustafson & Branch, 2002, p. 4). These tools can include task analysis diagrams, nominal group techniques, lesson plan templates, production schedule templates, and objective worksheets. The operational tools may not necessarily be a part of the instructional development model. They are used in each stage of the development process to generate and utilize appropriate strategies to complete the development process. Over the last 20 years,
expenditures on university campuses for new digital technologies have grown rapidly from millions to billions of dollars and hundreds to thousands of staff and system designers (Woolsey, 2008). However, Woolsey asserted that while expenditures and staff in the new technologies have increased, universities have not organized themselves to invest directly in the development of the newer materials and environments (p. 217). In a survey study of multimedia developers in Ireland, Barry and Lang (2003) examined how multimedia systems development occurs in real-world practice. Surveys were collected from two survey groups: people from the multimedia industry and people from companies that fall under general industry. The findings revealed no universal method is being used for multimedia systems development. The top four techniques disclosed for multimedia systems development (n = 22) are project management (86%), system flowcharting (68%), storyboarding (59%), and menu maps (50%). The practitioners agreed that systematic approaches were desirable to add structure to the development processes but more than likely applied their own in-house methods. Barry and Lang also stated the findings showed significant shared perceptions among practitioners regarding inadequate staff skills and staff shortages being inhibitors to successful development.

Another study, Ertmer et al. (2008), used a think-aloud method to examine the thought processes of seven instructional design experts as they proceeded through an ill-structured instructional design problem presented in a twelve-page case narrative. None of the design experts had experience with the topic. The researchers compared the interpretive commentary to supportive literature in the field. The results identified four affirmations made by the experts:

1. The design experts narrowed the problem space when identifying key design challenges
2. The design experts used a mixture of both knowledge and experience to interpret the problem
3. The design experts incorporated a mental model of the ID process to guide their thinking of the ill-structured problem

4. Despite differences in their initial interpretation, the experts came to relatively the same conclusion and solutions as to how to handle the design problem (Ertmer et al., 2008)

Ertmer et al. (2008) found that "experts tend to quickly filter through the layers of a problem situation to determine the key elements, by drawing on their previous experiences, as a first step in conceptualizing the ill-defined issues in a case-based problem" (p. 82).

Communication has been rated as one of the most important tools, as noted earlier. Communication can take many forms, and product specifications are often laid out in documents. Boot, Nelson, van Merrienboer and Gibbons (2007) studied the translation process of design specifications from the designer to the producer of instructional software. Boot et al. claimed there are three basic variables that will affect the quality of communication in the translation of design documents such as blueprints or storyboards: 1) organization, 2) level of detail, and 3) standardization of the design documents. Their model suggested that to improve the organization of design documents, designers can stratify their terms in seven layers based on Gibbons (2003) design model of content, strategy, control, message, representation, media logic and data management. Designers elaborate on their designs based on three different perspectives: conceptual, specification, and implementation perspectives, and then formalize their design by making the descriptions in formal or informal design languages to standardize the descriptions. Experimental testing of the Boot et al. 3D model revealed the quality of the technical specifications in the improved documents group was higher than in the conventional documents groups. The time on task per question and efficiency of the translation process showed better results for the improved documents group than the conventional documents group, while the
perceived cognitive load showed no significant difference. The results indicated that by improving the design documents, the efficiency of the translation process between the design phase and the production phase is improved. As communication is one of the key elements of product success, it is vital for the instructional development team to have solid design documents from the designers.

**Summary and Areas of Consideration**

As the potential of technology increases, so do the complexities of design and development. One notable complexity gaining attention in the research is collaboration of partnerships, some in different locations, on product design and development. Many articles outside the field of educational technology have researched inter-organizational collaboration. In a changing environment where global communities are being discussed, it would help designers gain insight into inter-organizational relationships. The complexities of the relationships have been touched on here, but further research specifically in the educational technology field is needed.

The last issue, and perhaps the most important, is that very little research is available regarding the processes of instructional development. This review has cited several well-known scholars in the field who are calling for future research in this area. Communication patterns, team activities, and design documents are needed to inform practitioners, both new and old, about effective methods for developing multimedia products. How practitioners communicate is likely to continue as a key issue in technology, and workplace changes will influence the communication process. Achieving success by effective communication is reflected as a common theme within the literature. The design documents Boot, Nelson, van Merrienboer and
Gibbons (2007) tested in their study were a written form of communication. Durdu et al. (2009) concurred that communication, evaluation, and feedback are essential characteristics. They argue that "mechanisms are to be provided to enhance effective and efficient communication to ensure timely and appropriate generation, collection, dissemination, and storage of the project information especially for the geographically dispersed team members" (p. 243). Research on development practices in the workplace is scarce in educational technology, and future research on inter-organizational collaboration of instructional multimedia can provide insight and fill in missing knowledge for the field of instructional technology.

Activity Theory for Examining Collaboration

As stated in the previous section, development of instructional multimedia is a collaborative process, interlinked by individual roles and developed over time. This development evolves through collaborative activity. Therefore, activity theory can present a framework that is focused on participants and their intentions, tools, and culture (Wilson, 2002). Kuutti (1995) defined activity theory as "a philosophical and cross-disciplinary framework for studying different forms of human practices as development processes, both individual and social levels interlinked at the same time" (p. 23). Hyysalo (2005) suggested that activity theory may be useful for studying complex, undefined, and situated elements of design, as this theoretical methodology can examine long-term processes and collaboration within design work. As such, the focus of this section is to examine activity theory as a framework for studying the work environments of instructional development teams through inter-organizational collaboration. This section is structured as follows: The pioneers of activity theory are presented to provide a background of the historical development of the concept of activity relevant to the cultural and
environmental conditions as its founding theorists perceived it. Then a historical overview of the concepts and underlying ideas of activity theory from Vygotsky's cultural-historical psychology (Vygotsky, 1978a) to the activity theory framework developed by Leontiev (1978) is presented. The literature review also examines current theorists and the conceptual framework as it moved from a predominantly Soviet-based theory into Western research. An overview of activity theory as it relates to instructional technology and, more specifically, the development process of instructional media will then follow. Many of the complex details (Bakhurst, 2009) and historical debates (Kozulin, 2005) regarding the theory of activity have been omitted from this dialogue to simplify and identify the key elements of activity theory as they relate to production of instructional technology.

Pioneers of Activity Research

Development of the theory of activity grew in the Soviet Union during the 1920s and 1930s under the influence of Marxism through two distinct but overlapping schools of thought. The main researchers who swayed toward a cultural-historical school were Lev S. Vygotsky (1896-1934), Alexander R. Luria (1902-1977), and Aleksei N. Leontiev (1903-1979) (Yasnitsky & Ferrari, 2008). There were also researchers who followed a neurophysiological school, most notably Sergei L. Rubinshtein (1889-1960). The Rubinshtein School was formed in 1930 when Rubinshtein moved to Leningrad (Grigorenko, Ruzgis, & Sternberg, 1997). There he developed the principle unity of consciousness and activity (Grigorenko et al., 1997) at roughly the same time as Vygotsky, Luria and Leontiev were investigating the cultural-historical aspects of activity and consciousness at the Kharkov school. Although there are diverse facets of activity
theory, this paper focuses on the cultural-historical path as it has received greater attention and
documentation in Western literature.

Kaptelinin and Nardi (2006) claimed Vygotsky's fundamental contribution was the
relationship between mind to culture and society. The theory implies the historical, group, and
individual development of "psychological processes in both animals and man is intimately
connected with the development of the actions and activities through which the organism is
related to the external world" (Minick, 2005, p. 52). The most well-known concept that came out
of Vygotsky's cultural-historical works was the task of assessing development, called the zone of
proximal development (Kaptelinin & Nardi, 2006), which he defined as “the distance between
the actual developmental level as determined by independent problem solving and the level of
potential development as determined through problem solving under adult guidance or in
collaboration with more capable peers” (p. 86). The early constructs of activity theory are
described in the next section.

**Theory of Activity**

Activity is the engagement of a subject toward a goal or objective. The three themes of
Vygotsky's theoretical framework are 1) reliance on genetic or developmental methods, 2) higher
mental processes have an origin in social processes, and 3) mental processes can be understood
through the tools and signs that mediate them (as cited in Wertsch, 1988, p. 14). Vygotsky
asserted that human processes can only be understood by considering how and where they occur
in the growth of development. To understand this, attention must be on the higher psychological
functions that are established through the development process rather than on the product
developed (Wertsch). In other words, to understand the development processes, focus should
begin on a unit of analysis based on a mediated activity rather than the psychological entities such as skills, concepts, and information processing. Connecting this to the instructional design models currently in the literature (Gustafson & Branch, 2002; Molenda & Boling, 2008), a unit of analysis based on the activity processes of a development team may establish higher forms of insight into the phenomena of collaborative product development. Karl Marx examined social activity processes as they related to labor and production. Marx (1994) noted, "The simple elements of the labour process are (1) purposeful activity, that is work itself; (2) the object on which that work is performed; and (3) the instruments of that work" (p. 275). The instruments of labor are things the worker injects into the labor activity to reach his object. While Marx examined labor activity for its materialistic aspects, Vygotsky identified the subject, object and mediated act as the factors for cultural-historical activity-based research.

The basic representation of activity, $S \leftrightarrow O$, identifies an interaction and transformation between subject and object. Kaptelinin and Nardi (2006) noted that "activity in the narrow sense is a unit of subject-object interaction defined by the subject's motive" (p. 60). Therefore, to understand an activity in natural sciences, the assumption was made that one must understand the subject and object separately and make an inference about the interaction. In contrast, activity theory purports that no properties of the subject and object exist without activity (Leontiev, 1978). Vygotsky (1978) identified the interaction of the subject and object with tools that mediate acts.

Vygotsky asserted that signs, such as language, and physical tools, such as a hammer, are both mediators that transform a process and can thus be "subsumed under the more general concept of indirect (mediated) activity" (pp. 53-54). The mediated tool serves as an instrument to human influence on an activity leading to the object. In a tool-mediated perspective, a subject
uses an auxiliary means, the mediated tool, to perform the task of the objective (Luria, 1928). "The tools used by man not only radically change his conditions of existence; they even react on him in that they effect a change in him and in his psychic condition" (Luria, 1994, p. 46).
Vygotsky's work on the cultural-historical aspects of activity were never fully developed into a theory due to his untimely death ten years after starting his scholarly writing at the Institute of Psychology.

However, Vygotsky's associates and disciples continued his work in cultural-historical activity. Leontiev (1978) stated, "The main thing that distinguishes one activity from another, however, is the difference of their objects. It is exactly the object of an activity that gives it a determined direction. According to the terminology I have proposed, the object of an activity is its true motive" (p. 62). Human activity loses its object's natural aspects and becomes an object of a collective social experience. According to Leontiev, “Historically, i.e., in terms of its origin, the connection between motive and object of activity reflects objective social, rather than natural relations” (as cited in Kozulin, 2005, p.116). Actions are aroused by motives but are directed by achieving some goal. Kozulin (2005) explained, "Motives thus belong to the socially structured reality of production and appropriation, whereas actions belong to the immediate reality of practical goals" (p. 117). Leontiev was criticized for some aspects of his theory, such as the lack of relationship to signs and the semiotic systems within his theory and Vygotsky's work (as cited in Zinchenko, 1986). Leontiev continued his work and received wider attention, both acceptance and criticism, in the late 1950s and early 1960s during the political changes occurring in the Soviet Union through Stalinization (Kozulin, 2005). It was not until the 1980s, through the works of scholars (i.e., Cole, 1985; Wertsch, 1988), that Vygotsky's influence on psychology
reached the United States and parts of Europe. This was due in part to the translation of his works and to the complexity and understanding of the theoretical framework (Minick, 2005).

Principles of Activity Theory

The general philosophical elements of activity theory integrate three perspectives: 1) the objective, 2) the ecological, and 3) the socio-cultural (Kaptelinin, 1996):

1. **Unity of consciousness and activity:** The consciousness of the human mind emerges and exists through human interaction with the environment.
2. **Object-orientedness:** The environment is meaningful in that people interact with objects, including culturally determined ones, which in turn influence people's actions.
3. **Hierarchical structure of activity:** It is important to differentiate between processes and the behavior differences of motives, goals, and conditions in relation to their status in a given activity. People behave differently in different situations based upon their motives but can adapt easier to changes in goals and conditions.
4. **Internalization-externalization:** Mental processes result from external actions through the course of internalization.
5. **Mediation:** Human activity is mediated through external tools, such as the Internet or paper, and internal tools, such as concepts or ideas of a given time period. Tools are carriers of cultural knowledge and social experience as our actions will be influenced by whatever tools are present at a given time in history.
6. **Development:** To understand phenomena, it must be understood from how something develops into its existing form. This provides scientific analysis of a complex event without oversimplifications of the mechanistic elements. (p.107)

Kaptelinin and Nardi (2006) later moved the first principle to two overall main ideas of activity theory: 1) the unity of consciousness and activity and 2) the social nature of the human mind (p. 65). In addition, they identified two other principles of activity theory:

- **Mental processes vs. external behavior:** Internal activities (cognitive science) cannot be understood if they are analyzed in isolation of external activities. (p. 69)
- **Inter-psychological vs. intra-psychological:** In the development of mental abilities, two stages occur. First an inter-psychological mental function between other people and then secondly, intra-psychological function when social distribution is no longer necessary. (p. 70)
These principles are not isolated ideas but are instead an integrated system of the whole activity. In sum, activity theory examines the consciousness of the human mind and how it develops through the mediated interaction of subject and object in the activity's socially influenced actions. Based on these principles, scholars are finding activity theory a useful alternative to traditional methods for studying individuals and groups in their authentic environments.

**Mode of Inquiry**

As mentioned earlier, Vygotsky's theoretical framework purports that mental processes can be understood through the tools and signs that mediate them. The problem under consideration in activities then is the relationship between the natural and social lines of development through mediated activities. Uncovering this phenomenon is different from traditional cognitive theory where observations of activity are examined for inference to mental processes. In activity theory the observation of an activity is used as a mode of inquiry into the motives, goals, and instruments of the natural and social development of individuals and groups. When studying large-scale projects, thick descriptions based solely on observation are insufficient for describing the phenomenon. Yamagata-Lynch (2003) explained the process involved in the unit of analysis.

When the research is conducted based on socio-cultural theory, or more specifically activity theory, examining individual behavior is the gateway for the research to enter into and vicariously experience the activity of the subject. Once the researcher identifies the activity, he or she needs to shift the focus of the examination to understanding the motive-goal-instrumental conditions rather than the observable individual behaviors and use that information to understand the collective meaning-making process. (p. 104)

Wertsch (1988) noted several distinct but interrelated levels of analysis identified in activity theory. Each level has a specific type of unit (p. 202):
• **unit of activity**: Specific real activities (as opposed to human activity in activity theory) that are directed by motive.

• **unit of goal-direction action**: The action is goal directed and can vary independently of an activity. The action is associated with the goal.

• **unit of operation**: An operation is associated with concrete conditions under which the action is carried out.

Activity theory provides a qualitative method of studying group work in natural environments.

Nardi (1996) stated:

> Activity theory is a powerful and clarifying descriptive tool rather than a strongly predictive theory. The object of activity theory is to understand the unity of consciousness and activity. Activity theory incorporates strong notions of intentionality, history, mediation, collaboration and development in constructing consciousness. (p. 7)

Activity systems are linear over time and are regarded as never fixed but undergoing continuous change. This is why activity theory "can only be understood in the context of historical processes that led to its current state" (Roth & Tobin, 2004, p. 167).

The original work of Vygostky and Leontiev did not focus on a method for integrating an analysis of activity theory. Based on their work and their followers, Engeström (1993) developed a theoretical framework of model human activity. The top portion of Engeström's model is taken from Vygotsky's basic mediated triangle of subject, mediated tool and object.

Engeström's activity systems model includes six variables of activity:

1. Subject – individual or group
2. Object – reason or motive the subject participates in the activity
3. Mediated Tool – signs, tools, or artifacts that act as tools involved in the activity
4. Rules – formal and informal regulations that restrict or liberate the subject
5. Community – the social group the subject identifies membership within
6. Division of Labor – how tasks are shared in the community (p. 67)

A change in any one of the variables causes a change in the whole activity system, and arrows in the activity system model reflect the contradictions in the activity caused by tensions among the components of the activity (Cole & Engeström, 1993; Engeström, 1993). Engeström (2000a) stated, "While the object and motive give actions coherence and continuity, by virtue of
being internally contradictory, they also keep the activity system in constant instability” (p. 964). Contradictions are not inherently bad and are central to strategies for change and development (Roth & Tobin, 2004, p. 169). Roth and Tobin identify several advantages to using activity theory: 1) it is a first-person perspective on actions of individuals and groups, 2) it theorizes individual actions to generalized actions of a collective level, 3) actions can be assessed by the mediated tools, rules, community and division of labor characteristics, 4) it can help pull out invisible contradictions, and 5) it can provide optimistic opportunities for change and growth. Much of the current literature utilizes Engeström's model of human activity in the analysis.

An activity system is a conceptual tool for understanding human activity as an interacting network of many activities as they proceed through time. As an illustration, think of a busy pedestrian street in downtown Chicago. From a bird’s-eye view, it’s hard to see individual human activity. Standing on a street corner will give a glimpse of the many people passing by, but where they are going or what is their objective is still unknown. Step into a coffee shop and a closer look can be deciphered through the process of serving coffee to customers. Each customer in his or her own activity connects to the barista’s task of serving beverages. The fluctuations and demeanor of customers over time can influence the barista’s performance. Activity systems can then be used as a conceptual tool for understanding the barista’s activity. Human activity at a work environment may have rules from multiple systems, such as the finance, management, and human resource departments, not to mention external rules from professional organizations, judicial laws, community policies, and cultural norms. Some of the human activity from other systems will intrude into a particular activity. “Actual causation occurs as the alien element becomes internal to the activity. This happens in the form of imbalance” (Ditsa, 2003, p. 217). Human activity is constantly working through contradictions,
both within and between elements. An individual’s activity is not isolated, and multiple individual actions bring about socially bounded human activity with contradictions and tensions produced through disturbances and innovation. In other words, the contradictions and tensions in colliding human activity can cause both disturbances and innovations. Furthermore, human activity is relevant to time. A warmer season may influence the barista’s workload, whereas time in a socially-bounded human activity will also be influenced by additional human activity and events occurring within that time period, such as current policy, current events, and available technology. Thus, a qualitative researcher examining human activity through an activity theoretical lens will look at the contradictions and tensions in time.

Contradictions in activity theory are the “sources of change or development” that drive the activity system (Engeström, 2001). The premise of examining contradictions is to influence the success of an activity system by identifying and overcoming these contradictions. The symbolic connotation of contradictions in activity theory differs from its typical denotation. Contradictions are not ordinary problems that arise within the daily activity system. They are systemic formation of collective systems that typically develop over time. In other words, contradictions are not internal to one activity system but universal to an industry, culture or similar group of activities within a specific time. For instance, policies reflecting the processing of health insurance claims may impact all individual physicians, but the individual physicians have no ability to change the policy. As the policies do change, contradictions to the manner in which the individual physician dealt with insurance claims will influence the activity systems within his or her office. Thus, contradictions in policies are time stamped on the enactment and current status of policies and will change over time. Virkkonen and Kuutti (2000) defined contradictions as “fundamental tensions and misalignments in the structure that typically
manifest themselves as problems, ruptures, and breakdowns in the functioning of the activity system” (p. 302). In a literature review, Nunez (2009) identified two categories of contradictions: studies that introduce a new instrument and studies that introduce a new object into the activity system. The PDC project experienced many changes both to their instruments for creating media and to the new media they were creating.

**Instructional Development and Collaboration**

Activity theory is used in the fields of education, ergonomics, information systems, humanities, and organizational psychology (Bedny & Karwowski, 2004; Hashim & Jones, 2007). Focused areas that relate to the instructional technology field include human-computer interaction (HCI), computer-supported cooperative work (CSCW), computer-supportive collaborative learning, evaluation and assessment, managing e-learning environments, mobile learning, information science, and information systems development. The field of activity theory has also seen a great deal of research on the study of work processes, collaboration, and organizations relevant to instructional technology development. The purpose of utilizing activity theory as a framework to study the P.R.I.D.E. Digital Curriculum is to learn about work environments and work-related activities of instructional development teams in an inter-organizational collaboration. Daniels et al. (2013) state:

In the children’s services settings… the activities of professional teams, groupings and networks produced a series of changes in individual and collective dispositions, knowledge and skills. These expanded the potential of the professionals to realize new practices, such as those we have described as rule-bending, knotworking, trail-making and negotiating distributed expertise. These practices, in turn, expanded the potential for future work. Thus there is a cyclical, or spiraling, relationship between learning to do multi-agency working and the
social production of labour-power. Conceptualising activity systems in this way offers considerable theoretical potential to support future activity-theory derived research. (p. 87)

Large-scale instructional product development requires the interaction of multiple members with varied skill sets.

Activity theory with its focus on accumulating factors positively affects the subjective interpretations, the purpose, and the sense making of individual and group actions and operations. It also provides a useful paradigm for understanding the ways in which human experience, needs and creativity shape the design and effectiveness of emerging technologies. (Hashim & Jones, 2007)

The individual and collaborative characteristics of the team members influence the chosen techniques, tools, and solutions. Kirkup and Kirkwood (2005) studied individuals’ habits of adopting information and communication technologies through an activity-theoretical framework and concluded "even late adopters will be changed in the process of adopting or adapting to new tools, because these will inevitably lead to changes in the behaviour of the whole activity system" (p.197). The need to examine the interaction and activities involved in instructional technology product development draws attention to the team aspect of development and implementation. There are unique challenges in managing instructional design teams due in part to the cultural nature of creative people. Bakker et. al. (2013) examined the dynamics of creative project teams and found the longer projects were more likely to endure conflicts. They state, “The cohesion of creative project teams with a relatively shorter time frame is affected to a lesser extent by conflict than the cohesion of project teams with a longer time frame” (Bakker et al., 2013, p. 393). One method of studying this cultural aspect within a team is through activity theory. Wilson (2002) claimed activity theory may be a close theoretical match for examining instructional development practices. The socio-cultural perspective of activity theory enables
researchers to identify factors from multiple individuals collaboratively engaging in activities in their natural setting (Yamagata-Lynch, 2003). Therefore, the goal of activity theory is to uncover any conflicts or problems with the interaction to improve performance and processes. Using this theoretical foundation can lend insight into the basic relationship humans have with technology and through the development of educational technology. In the proposed research on development team processes in inter-organizational collaborations, both qualitative and quantitative methodology can be used to examine the variables of subject, object, and tool. In particular to the proposed research, interviews were conducted to identify activities and processes as they relate to the components (see Figure 2). Interviews also helped reveal that contradictions in the activity affected tensions among inter-organizational collaborations. Furthermore, quantitative data through the use of surveys can enlighten development and implementation processes in the areas or tools and community needs at the inter-organizational level.

Figure 2. Proposed basic structure of instructional product development activity.
Activity theory is increasingly being used for studies involving work and technologies (Nardi, 1996). As previously mentioned, Vygotsky's research was influenced by Marxism. Marx focused on the study of labor, having described purposeful activity as one of the simplest elements of labor. As such, it should be no surprise that activity theory has a theoretical mark on work environments. Numerous scholars have recently studied activity theory in work environments (Bedny & Karwowski, 2004; Collis & Margaryan, 2004; Engeström, 1999; Holt, 2008; McAvinia & Oliver, 2004; Nardi & Engeström, 1999). Engeström (2000a) examined activity theory as a potential framework for analyzing and redesigning work. He identified that a new kind of expansive learning currently gaining attention in the literature is needed for organizations (Daniels, 2004; Engeström, 2001; Pearson & Somekh, 2006). Engeström (2000b) also identified an emerging type of work organization called knotworking in which "the notion of knot refers to rapidly pulsating, distributed and partially improvised orchestration of collaborative performance between otherwise loosely connected actors and activity systems" (p. 532). Engeström draws reference to Victor and Boynton's (1998) perspective on knotworking and co-configuration in which an organization builds a living production that grows through an ongoing relationship with each customer.

Barthelmess and Anderson (2002) more narrowly focused on software development utilizing activity theory for its collaborative activity aspects. Software engineering techniques are similar to processes involved in instructional multimedia products in areas of team development, design, tools, and technical environments. Barthelmess and Anderson investigated software development based on Engeström's (1993) reflective communication on three different levels of interactions: coordinated (routine), cooperative (interaction) and co-construction (reflection and
better ways of doing work). Barthelmess and Anderson provided a rich descriptive tool for analyzing collaborative work in software development. They suggested that each activity level in the process may require different approaches and the theoretical framework of activity theory may reveal richer notions of collaboration.

**Summary and Areas of Consideration**

The current research and theoretical framework of activity theory provided within this literature review identify several viable notions for utilizing this framework in the analysis of instructional technology development. Vygotsky's cultural-historical aspects of activity first originated through the influence of Marxism, which studied labor activity (Vygotsky & Rieber, 1997). Vygotsky, Luria, and Leontiev (and their disciples) were interested not only in the individual development but also in the collective development of groups in social settings, which "is intimately connected with the development of the actions and activities through which the organism is related to the external world" (Minick, 2005, p. 52). The original Russian works lacked a method of analysis, which Engeström (2000a) provided in his model of human activity systems. The inquiry and analysis of activity theory have gained increasing attention in Western literature for its ability to draw out contradictions in activities through the subject, object, mediated tools, community, rules, and division of labor. Research utilizing an activity-theoretical framework is interdisciplinary, stretching among education, collaborative learning/work, organizational psychology, ergonomics, and information systems. Little research is evident in the field of instructional technology development pertaining to the process of the instructional development team from an activity-theoretical standpoint. However, models of instructional design can benefit from the richer notions of collaboration provided by activity theory, as
Barthelmess and Anderson (2002) identified. It is, therefore, activity theory that was used as a framework for investigating the P.R.I.D.E. Digital Curriculum (PDC) project. Investigating the proposed breakdown of activity (see Figure 2) in the PDC project through the variables of subjects, tools, object, rules, community, and division of labor was useful for studying the complex, undefined and situated elements of collaborative development. The resulting research cannot be generalized for all levels and situations of instructional development but can contribute to the epistemological base of the field by revealing potential contradictions and processes involved in large-scale, inter-organizational collaboration of instructional product development.
CHAPTER 3
METHODOLOGY

The focus of this chapter is on the research methodology and data analysis for investigating instructional development and implementation teams from an activity-theoretical perspective. The study used activity theory to analyze work practices between intra-organizational and inter-organizational settings from social and cultural perspectives to establish the means by which collaborative practices occurred and how they were supported. The objective of this study was to gain insight into the collaborative nature of instructional development, such as communication practices among partners and team members, the division of labor and responsibilities, how cultural differences cause contradictions in development, and artifacts that influence product development objectives. This insight could in turn guide development teams in other work environments sharing the same objective for multimedia product development.

The multimedia CD-ROM training project studied is the P.R.I.D.E. Digital Curriculum (PDC). The PDC is a nine-module, 25-disk in-service curriculum for foster parents that was produced through the collaboration of a university, a child welfare advocacy organization, and six state child welfare agencies. The methodology chapter is divided into eight sections. The chapter begins by reiterating the research questions and purpose of study. The second section presents the assumptions placed within this research. The third section relates to the selection of research methods and elaborates on case study as being an appropriate method for uncovering phenomena associated with instructional development and implementation procedures. The
fourth section will identify the researcher’s participatory role. The participant section describes the setting of the study and criteria for selection of the participants. The chapter then addresses data sources, instrumentation and collection methods. The sixth section explains the data analysis procedures and activity systems as they pertain to this study. The validity of the methodology is addressed in the Trustworthiness section.

Reiterating Purpose and Research Questions

The main purpose of this study was to examine human activity in collaborative development and implementation procedures of a development team. Gustafson and Branch (2007) asserted workplace problems worthy of research should be 1) recurring and common to many settings, 2) viewed as basically solvable, and 3) reflective of broad areas of current interest in the field (p. 17). Advances in technology have made planning and producing more difficult and labor intensive (Spector, 2002). Hyysalo (2005) suggested that activity theory may be useful for studying these complex, undefined, and situated elements of design, as this theoretical methodology can examine long-term processes and collaboration within design work. The study focused primarily from the development team's perspective while examining activities associated with the inter-organizational partnership. The expectation of the investigation was not to place a generality on the results but to provide prescriptive insight for other practitioners in the field on the particularity of the PDC project as a representation of potential contradictions and possible solutions to collaborative projects.

The following research questions were used to explore this phenomenon:
1. How do inter-organizational and intra-organizational workplace cultures shape the communication process during the collaborative transformation from design to development and development to implementation of an instructional product?

2. Based on the triangular structure of activity systems analysis, what tools and rules influenced the development team's participation level during the design, development and implementation process?

3. In what ways did culture, resources, and the division of roles influence instructional product development in a large-scale, joint collaboration?

Assumptions

Research methods can fall under qualitative, quantitative, or mixed methods. Braun and Clarke (2013) simplify the distinction between qualitative research for its use of words as data in comparison to quantitative methodology for its use of numbers as statistical techniques for analysis. “Mixed-methods research integrates both qualitative and quantitative data and analyses for a more multidimensional approach to inquiry” (Miles, Huberman, & Saldaña, 2013, sec. 746–747). Merriam and Tisdell (2015) stated, “Qualitative researchers are interested in understanding how people interpret their experiences, how they construct their worlds, and what meaning they attribute to their experiences” (p. 6). There are many ways a qualitative researcher can design a study, which will depend on the theoretical framework and purpose of the study. An important aspect of selecting a methodology is a researcher’s position and philosophical assumptions. Research does not begin with a blank sheet of paper and an empty mind. A researcher needs to be aware of what beliefs he or she brings to the table. Creswell (2012) explained:
These beliefs are instilled in us during our educational training through reading journal articles and books, through advice dispensed by our advisors, and through the scholarly communities we engage at our conferences and scholarly meetings. The difficulty lies first in becoming aware of these assumptions and beliefs and second in deciding whether we will actively incorporate them into our qualitative studies. Often, at a less abstract level, these philosophical assumptions inform our choice of theories that guide our research. (p. 15)

The four basic philosophical assumptions are ontology, epistemology, axiology, and methodology. Creswell elaborates, “They are beliefs about ontology (the nature of reality), epistemology (what counts as knowledge and how knowledge claims are justified), axiology (the role of values in research), and methodology (the process of research)” (p. 20). Lincoln, Lynham, and Guba (2011) described these assumptions as paradigms and axiology as “ethics” (p. 91). Previous research contributes to the assumptions made prior to the outset of this study.

Methodological Assumptions

Methodological assumptions focus on the types of analyses used to gain data. The methodology asks how one might gain knowledge of instructional development activities and processes. Qualitative research focuses on understanding and making meaning about a phenomenon in its context. Merriam and Tisdell (2015) state, “Qualitative research is conducted through intense and/or prolonged contact with participants in a naturalistic setting to investigate the everyday and/ or exceptional lives of individuals, groups, societies, and organizations” (sections 764-765). Quantitative researchers will typically generalize their findings, whereas qualitative researchers focus more on particularization in context to their study and do not attempt to generalize. Full generalization is impossible in qualitative research because no two contexts are identical. The qualitative method is open ended with a rich history and
accommodates different approaches for professionals in social science disciplines (Denzin & Lincoln, 2005). The qualitative approach a researcher chooses is based in part on the questions being investigated. The research questions in this study seek to uncover detailed accounts of how inter-organizational collaboration occurs in instructional development and implementation projects. The selection of activity theory for this research follows the guidelines of literature that the “investigator’s goal for engaging in activity systems analysis is to gain and share their understandings of complex human activities through particularization” (Yamagata-Lynch, 2010, p. 32).

Qualitative research is a naturalist approach that uses interpretations of various materials such as field notes, interviews, conversations, photographs, and memos. Qualitative researchers “study things in their natural settings, attempting to make sense of, or interpret, phenomena in terms of the meanings people bring to them” (Denzin & Lincoln, 2005, p. 3). The naturalistic method complements research on activity systems. Qualitative research in naturalistic methodologies is necessary to provide thick, descriptive details. Combining both quantitative and qualitative methodologies into mixed-methods research is a newer paradigm that Flick (2014) interpreted as “an end to the paradigm wars of earlier times” (p. 35). The research presented in this study is a combination of both quantitative and qualitative. This mixed-method approach will be discussed in the next section on the selection of research methodology. The methodological assumptions on the best research approach are dependent on the researcher’s ontological assumptions of how reality is perceived.
Ontological Assumptions

Ontological assumptions involve the nature of the world and human beings in social contexts. Two positions that could be taken under ontological assumptions are objectivism and constructionism (Bryman, 2012). Objectivism views external facts as beyond the reach or influence of social actors and, as such, as independent. An organization from the objectivist standpoint is a tangible object, which is “a constraining force that acts on and inhibits its members” (Bryman, 2012, p. 32). The position of constructionism (constructivism) from an ontological standpoint asserts that social phenomena and its meanings are continually being constructed through the social actors. The phenomenon is both a product of social interaction and constant revision. Postmodernist theorists argue that even the researcher’s own interpretations of the social world are constructed and therefore a definitive truth/knowledge cannot be presented.

The research questions in this study take a stance that meaning is constructed. Activity theory as a framework for investigation asserts reality is constructed through the subject and object by the means of artifacts. These artifacts are the product of pre-existing artifacts and can be changed and adapted during everyday activities. The ontological assumptions of how reality is perceived are dependent on the researcher’s epistemological assumptions of how knowledge is gained.

Epistemological Assumptions

Epistemological assumptions inquire about questions such as what is knowledge, how is knowledge acquired, what do people know, and how do we know that we know this? The epistemological assumption in cultural-historical activity-based research follows Vygotsky’s (Vygotsky, 1978a) assertion that human processes can only be understood by considering how
and where they occur in the growth of development. The theory implies the historical, group, and individual development of "psychological processes in both animals and man [are] intimately connected with the development of the actions and activities through which the organism is related to the external world" (Harry Daniels, 2005, p. 48). The three themes of an activity theory framework: 1) reliance on genetic or developmental methods, 2) higher mental processes have an origin in social processes, and 3) mental processes that can be understood through the tools and signs that mediate them (Wertsch, 1988, p. 14) are epistemological assumptions shared by this researcher. Epistemology in interpretive paradigms acquires knowledge through an investigation in many different ways since it is from a social context rather than a natural science context. These subjective interpretations can be criticized under epistemological assumptions that the truth cannot be determined because of the multiple perspectives. In rationalism and empiricism, it is argued that objectivity in epistemological foundations can be found. Rationalism can support reason, rationality and logic while empiricism can provide an abundance of data from sensation and experience. The theoretical range within this phenomenon of inter-organizational relations and instructional development is quite broad, providing the researcher an opportunity to view the phenomena from different perspectives.

**Axiology Assumptions**

Creswell (2012) asserted that while all researchers bring their values to a study, qualitative researchers make their values known in a study. These values are the axiological assumptions. In other words, the axiological assumptions in qualitative research, and this research particularly, is that the research is “value-laden and that biases are present” (Creswell, 2012, p. 21). For example, as an active participant in the development of the PDC, there may be
subjective biases in my interpretation of the data. Likewise, the value of the PDC product to the participants in the research can influence how they reflect and answer questions in their interviews. For instance, two of the participants in the interview were no longer employed at the organization. Their departure from the organization may have had an influence on their answers to the interview questions. While any personal biases and participant biases were consciously analyzed, and techniques such as triangulation were used to detect biases, the axiological assumption in this research identifies that the values that shape this study will have my own interpretation, in conjunction with the interpretation of the participants.

Summary of Assumptions

In summary, the following five assumptions are made as part of this study. The theory of activity, as described by Vygotsky (1978) and Leontiev (1978), can help explain the instructional development phenomenon by examining the social-cultural and mediated activities involved in said processes. A second assumption in this study is that the relationships among concepts in activity theory are necessary, sufficient, and clear for investigation of instructional development models. The third assumption is that the instruments used in the mixed-methods approach are congruent with the conceptual framework and the data analysis described in this chapter adequately captures the core concepts of activity theory. A fourth assumption is that the evidence generated through the proposed methods will be sufficient for uncovering collaboration in inter-organizational instructional development activities. Last and most important, it is the motivating assumption of this researcher that the findings in this study will be valuable to the instructional
Methodology

Based on the assumptions made earlier in this chapter, a mixed methodology was chosen to investigate the development and implementation of instructional technology through an activity-theoretical perspective. Flick (2014) stated, “The debate over the relationship between qualitative and quantitative research, which was originally oriented to epistemological and philosophical standpoints, has increasingly moved towards questions of research practice such as the appropriateness of each approach” (p. 36). This section assesses the appropriateness of the selected study and methods. Creswell and Plano Clark (2007) defined the mixed-method approach as one that “focuses on collecting, analyzing, and mixing both quantitative and qualitative data in a single study or series of studies. Its central premise is that the use of quantitative and qualitative approaches in combination provides a better understanding of research problems than either approach alone” (p. 5).

There are four types of mixed-method designs: triangulation design, embedded design, explanatory design, and exploratory design (Creswell & Plano Clark, 2007, p. 59). The most common mixed-method approach is the triangulation design in which quantitative data are compared to qualitative data. Strengths of the triangulation design are that the design makes intuitive sense, is an efficient design, and data can be collected and analyzed separately and independently. Some challenges in triangulation design are the necessity to comprehend both quantitative and qualitative methods. Challenges may occur if both data sets do not agree with
each other, quantitative and qualitative data typically have different sample sizes, and it is
difficult to integrate the two data sets into meaningful comparisons.

The research presented here is situated on the constructivist perspectives that “human
beings do not find or discover knowledge so much as construct or make it” (Schwandt, 2015, p.
36). Corbin and Strauss (2014) elaborated on Schwandt’s definition:

> Though readers of research place their own interpretations on data, the fact that
> these are constructions and reconstructions does not negate the relevance of
> findings nor the insights that can be gained from them. [Corbin and Strauss]
> believe that we share a common culture out of which common meanings are
> arrived at through discourse. (p. 26)

Constructivists recognize multiple realities and that there is no single and unique reality but only
individual perspectives. Since no two contexts are identical, a full generalizability “ignores the
unique shaping forces that exist in each context” (Erlandson, Harris, Skipper, & Allen, 1993, p.
17).

Lincoln, Lynham, and Guba’s (2011) approach to the constructivist paradigm is a
naturalistic inquiry that investigates phenomena within their naturally occurring contexts. Unlike
experimental inquiries, naturalistic inquiries study “naturally occurring activities and processes”
and “are not planned or manipulated” by the investigator (Patton, 1987, p. 13). Naturalistic
inquiry is an alternative research design for scientists to consider other than experimental
designs. The current research is a naturalistic inquiry with grounded interpretations based on
quantitative and qualitative data (Guba & Lincoln, 1989). An activity systems analysis will be
the mode of inquiry as an operational representation of activity theory to investigate instructional
development and implementation phenomena. The format of this study is based on a longitudinal
case-study approach.
Case-Study Approach

A common form of qualitative research is case study. A case study has been defined as an object of study (Stake, 1995). Yin (2013) breaks a case study into a two-fold definition:

As the first part of a twofold definition, a case study investigates a contemporary phenomenon (the “case”) in its real-world context, especially when the boundaries between phenomenon and context may not be clearly evident. The second part of the definition points to case study design and data collection features, such as how data triangulation helps to address the distinctive technical condition whereby a case study will have more variables of interest than data points. (p. 2)

Key properties of case studies are smaller sample sizes (Gomm et al., 2000), rich description (Merriam & Tisdell, 2015), and more variables of interest than data points (Yin, 2013). Furthermore, Patton (1990) asserted case studies can create a deep understanding of particular people, problems, or situations.

In this research, a case-study approach was selected. Yamagata-Lynch (2010) stated, “Case studies are particularly compatible with the theoretical assertions and analytical intentions involved in activity systems analysis” (p. 63). Merriam and Tisdell (2015) described a case study as “an in-depth description and analysis of a bounded system” (p. 37-38). Creswell (2012) contributed on case studies that it is an “approach in which the investigator explores a real-life, contemporary bounded system (a case)… over time, through detailed, in-depth data collection involving multiple sources of information (e.g., observations, interviews, audiovisual material, and documents and reports), and reports a case description and case themes” (p. 97). Merriam and Tisdell (2015) further elaborated that “the unit of analysis, not the topic of investigation, characterizes a case study” (p. 37-38). Yamagata-Lynch explained that in an activity-theory
framework “the unit of analysis embraces the belief that real-world activities cannot be isolated into variables” (p. 6).

A variety of tools are used in case-study research to obtain a holistic picture of particular societies, groups, institutions, settings, or situations. Observations and interviews are typically used. In the PDC research, data collection and observation occurred over a seven-year period as part of the principal researcher’s participation in the development and implementation of the PDC, and then retrospective interviews were conducted with key members of the project ten years after the beginning of the project. An emic perspective of the culture is the researcher’s ability to provide an insider’s view. The etic perspective, on the other hand, is the researcher’s ability to provide an external objective view on the reality. Spender (2014) explained, “To enquire into strategic work the researcher must abandon the objectified ‘etic’ approach exemplified by the dominant management research journals and switch to a subjective ‘emic’ approach that turns on bringing the entrepreneur's imagination and judgment into play” (p. 95).

In case studies, the researcher attempts to look at the data from both perspectives. Yamagata-Lynch (2010) explained that “this conscious effort is necessary for maintaining trustworthiness and rigor throughout the investigation” (p. 65). During the development of the PDC, I had the opportunity to participate fully within the collaboration, granting an emic perspective. After the development, I then switched my role to researcher and examined the case from an etic perspective.

The purpose of the PDC research was to dwell deep into the processes and events of the inter-organizational collaboration of instructional development. The PDC project was an authentic, real-life, bounded activity occurring over a period of time. There are multiple approaches to case-study design. Yin (201) describes one example of a single case study as the
longitudinal case, which studies “the same single case at two or more different points in time” (p. 53). Flick’s (2014) interpretation of a longitudinal case study is quite strict, stating, “In a longitudinal study, the same method of data collection is applied repeatedly in order to analyze how things have changed over time in the issue” (p. 128). However, Yin (2013) provides an alternative in that “the evaluation data can come from open-ended queries of interviewees and the retrieval of documents that retrospectively cover earlier time periods, so that the case study can cover a calendar period that exceeds the elapsed time devoted to any fieldwork (p. 222). This approach was much more fitting to the PDC research because the research focused on various phases in the design, development, and implementation of the PDC.

**Activity Systems Analysis**

Activity systems analysis was elaborated on in the previous literature review section of this research. The theory was developed out of the social-cultural historical psychology of Vygotsky (1978b) and Leontiev (1978) but did not focus on a method for integrating an analysis of activity theory. Engeström (1993) developed a model of human activity analysis based on the theoretical framework of the cultural historical activity theory. The activity systems model identifies six components: 1) subject, 2) object, 3) mediated tool (artifact), 4) rules, 5) community, and 6) division of labor. Lightning-shaped arrows in an activity system reflect contradictions in the activity system caused by tensions among the variables of the activity. By using these variables in activity systems analysis, a case study can identify and draw attention to the contradictions of instructional development and implementation. The basic units of analysis for this case study are the activities that developers need to carry out to complete and implement the physical product. Clarifying the purpose of activity systems, as it relates to instructional
product development and implementation, provides an understanding of the context within the activities and offers a clarification of the motivations for the activity and any possible interpretations perceived as contradictions.

The context in an activity system is comprised by a person or persons (subject) utilizing artifacts (tools) to obtain a goal (object). The context is both internal to the subject through specific objects and/or goals and external through artifacts, other people and specific settings. Context is, therefore, the activity system and is connected to other activity systems. It is both internal and external and cannot be separated. In activity theory, context is continuously constructed within the components of the activity system. People continuously renew, develop, or transform tools and rules as activities occur. Thus, it is important to understand how activity processes occur in context in hopes of unveiling why the activity occurs. The proposed basic structure of instructional product development activity systems is seen in Figure 2 in the previous chapter.

I chose activity theory as a framework for investigating human activity. The theory was developed out of the social-cultural historical psychology of Vygotsky (1978b) and Leontiev (1978) but did not focus on a method for integrating an analysis of activity theory. Engeström (1993) developed a model of human activity analysis based on the theoretical framework of the cultural historical activity theory. Two of the research questions in this study focused on how the culture of different organizations influenced the object of the activity. During the analysis stage, I realized that I needed to look at the activities in a three-dimensional perspective to decipher information relative to my research questions. Engestrom’s (1993) activity system would have chunked the inter-organizations into one system. I wanted to examine the differences the inter-organizations brought to the collaboration. The subjects, rules of the organizations, and
community were unique. These components help shine light on cultural norms, beliefs, and rules of the individual organizations. Although tools are certainly part of a culture, they are seen here as tools within the era of this study. So, I transformed Engeström’s activity system into a three-dimensional activity system to help analyze unique traits of the inter-organizations. The purpose for using a three-dimensional activity system in this case study is because the tools, object, and division of labor are parts of the shared activity but the community members, rules and subjects were unique in many ways to each organization. The subjects, community members, and rules are extrinsic (external) influences to the project. On the other hand, the shared objective, division of labor and tools that are used in the activities are intrinsic by their very nature as an essential parts of the activity regardless of the contribution from either side. Separating the organizations (subjects), rules, and community members of the activity will help to draw light on the cultural influences of the collaboration. As discussed in the literature review, culture can be seen through the subjects, their social practices within their community members, and the social norms through their rules.

So to accommodate the multiple perspectives, the three-dimensional tetrahedron activity system, seen in Figure 3, expands the triangle to separate the subjects, rules, and community members. On the left side is the intra-organization (UNIVERSITY) and on the right side are the inter-organizations (external organizations). The UNIVERSITY will always be represented as the first subject (Subject 1, Community Members 1, and Rules 1), whereas the external organization will be displayed as Subject 2, with Community Members 2 and Rules 2. The Subject 2 organization will change depending on the activity.
Figure 3. Three-dimensional activity system.
Researcher’s Role

The role of the researcher in a naturalistic study can take on various paths from participant to observer. In this study, the term researcher is used as synonymous to investigator as the researcher is the one who investigates. Yamagata-Lynch (2010) describes the benefits and potential disadvantages of full participant investigation:

The best method to gain first-hand knowledge of participant experiences is to become a full participant in the community. This role may provide investigators with access to information that participants feel comfortable sharing only with their peers. By becoming full participants, investigators can learn how to see the world from the participants’ vantage point. However, if there is worry that the investigators’ participation could compromise the ability to collect meaningful data that is essential to the research questions, then they ought to consider taking an observer role. (p. 67)

The researcher in this study played a full-participant role in the development of the PDC instructional products. During the production phase, the researcher was a full participant assigned as the assistant design team coordinator. The researcher interacted with the development team and the inter-organizational members on a weekly basis. Data analysis did not occur during the time period in which data were collected. During the implementation phase, the researcher acted as both a participant and investigator, stepping out of the participant role to observe the activities and assess the data.

Criteria for Selection of Participants

The criteria for selection of the participants in this study came from both convenience and purposive samples as described below. The development and implementation of the PDC occurred over several years and involved several different organizations. There were two unique groups of participants: the interview data collection (IDC) group and the evaluation data
collection (EDC) group. The EDC participants had contributed to the Stage 1 research collected within this study while the IDC participants contributed to the Stage 2 portion of this study. The EDC participants included data from the Stage 1 study conducted with a child welfare association. The association is a membership-based organization that has served children’s aid societies (government-based child welfare agencies) since 1912. It provides services such as promoting training, child welfare, research, advocacy, government relations, and policy development. The association participated in an implementation Stage 1 study of the PDC (called the Stage 1 study) with the researcher of this study and the university, the producer of the PDC.

During the Stage 1 study, 25 agencies participated and 476 participants from these agencies took part in the questionnaires. Twenty agencies participated in the after-Stage 1 study focus group to provide feedback on their implementation procedures and observations. Five members were part of the core planning group for the Stage 1 test on implementation. The five members of the planning group for the implementation of PDC included two members from the association, one subject-matter expert (co-author of original P.R.I.D.E. model) and two members from the development team at the university, including the researcher of this study.

Participants from the EDC section of this study were a convenience selection of trainers, staff, and resource families associated with children’s aid societies in Canada. The participant sample size included 52 trainers, 174 staff, and 250 resource families. A total of 476 participants responded to the surveys. The association had 56 member agencies. All agencies were welcome to participate, and 25 agencies volunteered. It is believed, based on association records, that this represents at least 5% of the population within the participating agencies. However, exact numbers as far as active resource families and employed staff at the agencies during the month (May, 2007) of the Stage 1 study occurred were not available due to fluctuation.
Additional EDC participants from the implementation Stage 1 study included agency leads. The participants were from the largest populated province in Canada, which spans a 415,598 square mile area. The agency leads functioned as the link between the geographically dispersed agencies and the advisory group overseeing this research by announcing the study to their foster parents and distributed the CD training. Each agency assigned an agency liaison to assist in the study. All agencies volunteered to assist in this research. After the Stage 1 study, three focus groups were assembled from 20 of the 25 participating agencies. The focus groups were selected by sorting the group of 20 agency leads into three groups based upon where they had sat during a face-to-face feedback session after the study was conducted. The feedback session was arranged on a single day in a conference room at the association headquarters in Canada. Four agency leads also participated in a brief recorded interview with the researcher to familiarize her with the culture and typical practices of a children's aid society office in preparation for analyzing the questionnaires and implementation procedures. These participants were a purposive sample that volunteered to not only take part in the Stage 1 study but also agreed to assist in the data collection processes. A total of 20 agency leads participated.

The second set of participants in this study, the IDC participants, came from the development team and contributing collaborators in the development and implementation. A few hundred individuals contributed to the PDC development. At least 175 individuals were actors, while approximately another 75 were experts in their field. The predominant group involved in the actual development of a physical medium consisted of approximately 20 development team members. Ten participants from this IDC group were interviewed.

The selection of the setting and participants in the IDC portion of this study were a purposive sampling (Mason, 2002; Patton, 2001) of participants with key roles in the
development and implementation of the PDC. The sampling was aimed at ensuring the key constituencies were represented and diversity was included. Since the predominant objective of the research was to gather the development team’s perspective, six of the IDC members were from the university, while the remaining four IDC participants were from the inter-organizations.

The setting of this research was a small non-residential university with enrollment under 5,500 in a midwestern state. Additionally, phone interviews were conducted for four out-of-state IDC participants. The reasons the university setting was chosen were a) the PDC was developed at the university, b) the researcher’s accessibility to members of the development team, and c) the researcher’s familiarity with the structure and technologies of the PDC instructional product.

The researcher conducted semi-structured interviews with six internal members of the development team within the university who had direct impact on the development and implementation of the PDC: the executive director, the design team coordinator, the producer, the video director, the lead graphic designer, and the marketing coordinator. In addition, interviews were conducted with four inter-organizational members of the development team, primarily the original author of the PDC, who was employed by the partner on the collaboration as the subject-matter expert, the partner’s director at the time the PDC was developed, a state child welfare agency member who collaborated on the design and implementation of the PDC, and a representative from a child welfare agency in Ontario. All participants volunteered, and no compensation was offered for their participation.

In summary, the EDC participants included 476 participants from the Stage 1 study and 20 agency-lead participants. The IDC participants who were interviewed included six participants from the development team and four inter-organizational participants who assisted in the development and/or implementation.
Confidentiality

Confidentiality of data for the EDC participants was maintained by requesting only non-identifiable information on the questionnaires. The questionnaires asked for general job position/role and agency name, but this information was only seen by the researcher who did not have access to employment records. The collected data retrieved from the research that were shared with the association did not compare job position/role with individual agencies. The information retrieved from job position/role examined all the agencies involved as a whole. Agency perceptions of PDC were also provided as a whole. Feedback provided on the agency accounts of the questionnaire and implementation of PDC was not identified by individual name or agency. In addition, an added encryption feature was purchased from the Survey Monkey site. The collected data were stored on a password-protected computer with access only to the researcher. Personal information about foster children was not collected in this research instrument.

Agency leads who participated in the after-Stage 1 study feedback focus groups remained confidential. The association videotaped the daylong event and provided a copy of the tape to the researcher. However, the researcher did not have, and did not intend to use, names or agencies in connection with the data collected during this period. These data were used as part of the research collection procedures. In addition, the four taped interviews of the agency leads did not connect name and agency information. Again, this information was used as an explanatory tool to describe the setting of the research and was provided by participants who also took on the role of agency liaison for the study. All raw data will be disposed of three years from the completion and acceptance of this dissertation.
IDC participants involved in the development and collaborative data collection were identified by their role in the development and implementation of the PDC. Participants involved in the interviews signed a waiver and had the ability to opt out of any questions. There was a chance that the participants’ identities could be exposed, as their names are connected to their roles on other public documents, such as the PDC product; however, no harm is expected to come from their participation, and they were made aware of the risks in their participation release. The university (see Appendix A) and association (see Appendix B) approved a sponsored research agreement. Full IRB approval was awarded prior to collecting these data as documented in Appendix C for the EDC IRB approval (2007) and Appendix D for the IDC IRB approval (2010).

**Subject Classification**

Throughout the analysis, the subjects were coded, as shown in Table 1, to maintain confidentiality. When organizations are referenced, all capital letters will be used. For instance, UNIVERSITY refers to that organization being investigated, whereas university in lower case references universities in general rather than organization specific.

**Data Collection**

Data previously collected from the implementation Stage 1 study is identified as the evaluation data collection (EDC). New data, which were added to this research, are called the interview data collection (IDC). Yin (2013) suggested six sources of evidence in collecting case study data: documents (e.g., progress reports and letters), archival records (e.g., budgets,
# Table 1
Organizational Subjects

<table>
<thead>
<tr>
<th><strong>Organizational Subjects</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Intra-organization =</td>
<td>UNIVERSITY (development team)</td>
</tr>
<tr>
<td>Inter-organizations =</td>
<td>STATE AGENCY (or Agencies when referring to multiple states)</td>
</tr>
<tr>
<td></td>
<td>PARTNER (national organization and primary partner)</td>
</tr>
<tr>
<td></td>
<td>ASSOCIATION (Association for implementing training materials)</td>
</tr>
<tr>
<td></td>
<td>EVALUATORS</td>
</tr>
</tbody>
</table>

## Individual Subjects

<table>
<thead>
<tr>
<th><strong>Intra-organization</strong></th>
<th><strong>University</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>UNIV-Dir</td>
<td>Division Director of development team at UNIVERSITY</td>
</tr>
<tr>
<td>UNIV-Liaison</td>
<td>STATE-Agency administrator working at the UNIVERSITY</td>
</tr>
<tr>
<td>UNIV-Colleague</td>
<td>Campus Director from another department at UNIVERSITY</td>
</tr>
<tr>
<td>UNIV-Writer</td>
<td>Content Team Writer for UNIVERSITY</td>
</tr>
<tr>
<td>UNIV-DesignCoor</td>
<td>Design Team Coordinator</td>
</tr>
<tr>
<td>UNIV-ADesignCoor</td>
<td>Assistant Design Team Coordinator and Researcher</td>
</tr>
<tr>
<td>UNIV-Programmer</td>
<td>Computer Programmer</td>
</tr>
<tr>
<td>UNIV-Multi</td>
<td>Multimedia Technologist for UNIVERSITY (1, 2, &amp; 3)</td>
</tr>
<tr>
<td>UNIV-Graphics</td>
<td>Graphics Designer for University (1 &amp; 2)</td>
</tr>
<tr>
<td>UNIV-VideoDir</td>
<td>Principle Video Director for UNIVERSITY</td>
</tr>
<tr>
<td>UNIV-AudioEng</td>
<td>Audio Engineer for UNIVERSITY</td>
</tr>
<tr>
<td>UNIV-Marketing</td>
<td>Marketing Director for UNIVERSITY</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Inter-organization</strong></th>
<th><strong>State Agencies (multiple states)</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>STATE-Writer1</td>
<td>Partnering STATE Agency – Content Writer</td>
</tr>
<tr>
<td>STATE-Writer2</td>
<td>Partnering STATE Agency – Content Writer</td>
</tr>
<tr>
<td>STATE-Writer3</td>
<td>Partnering STATE Agency – Content Writer</td>
</tr>
<tr>
<td>STATE-Chair</td>
<td>Partnering STATE Agency and PRIDE Chair</td>
</tr>
<tr>
<td>STATE-Reviewer</td>
<td>Partnering STATE Agencies - Reviewer of material</td>
</tr>
<tr>
<td>STATE-Eval</td>
<td>Partnering STATE Agency sponsoring Evaluation</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Inter-organization</strong></th>
<th><strong>Partner</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>PARTNER-Div</td>
<td>Division Head for Partner’s department</td>
</tr>
<tr>
<td>PARTNER-PSME</td>
<td>Principle Subject-Matter Expert with Partner (also Content Writer)</td>
</tr>
<tr>
<td>PARTNER-ISME</td>
<td>Initial Subject-Matter Expert with Partner (also Content Writer)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Inter-organization</strong></th>
<th><strong>Association</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>ASSOC-Head</td>
<td>Head Director for Training at Association</td>
</tr>
<tr>
<td>ASSOC-Lead</td>
<td>Lead Personnel for Training at Association</td>
</tr>
<tr>
<td>ASSOC-Assist</td>
<td>Association assistants in distribution of questionnaire</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Inter-organization</strong></th>
<th><strong>Evaluator</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>EVAL-Head</td>
<td>Owner of Evaluation at Evaluator’s organization</td>
</tr>
<tr>
<td>EVAL-Lead</td>
<td>Lead Evaluator at Evaluator’s organization</td>
</tr>
</tbody>
</table>
organizational charts), interviews (e.g., open ended, questionnaires), direct observations (e.g., formal or casual interaction), participant observation (e.g. researcher’s participatory role), and physical artifacts (e.g., the developed project). The data sources that fall under document evidence for this study are progress reports and letters pertaining to the processes and collaboration of the development and implementation phases. Archival records provide budgets and organizational charts as evidence. Interviews were used in the format of face-to-face open-ended questions (IDC) and both open-ended and closed-ended questions in online surveys (EDC). In addition, observations were incorporated into this study through the researcher’s participatory role. Prior production meetings in which the researcher participated and wrote notes on the meeting also served as part of the observation data. Finally, physical artifacts included developmental tools and the completed PDC project. The documents and archival records were then compared to the interviews to verify actual events in a linear manner and mediate tool use and needs during the development and implementation phases. Except for the interviews, all data listed above came from the previously collected EDC group. Sources that were not produced by the researcher will be identified as they are introduced into the study. These external sources are from grant-related material, members of the development and implementation team, and people who contributed to the collaboration. For instance, the co-author of the PDC provided numerous documentations on suggested implementation procedures and descriptions of the product. A summary of the data sources is provided in Table 2.
Table 2
Data Sources Summary

<table>
<thead>
<tr>
<th>INSTRUMENTS/DOCUMENTS</th>
<th>DATA GROUP</th>
<th>CONTRIBUTOR OF DATA SOURCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interviews</td>
<td>InD</td>
<td>Researcher</td>
</tr>
<tr>
<td>Documents</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Progress Reports</td>
<td>RefD</td>
<td>Researcher</td>
</tr>
<tr>
<td>Letters/E-mails</td>
<td>RefD</td>
<td>Researcher &amp; External</td>
</tr>
<tr>
<td>Archival Records</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Budgets</td>
<td>RefD</td>
<td>Researcher &amp; External</td>
</tr>
<tr>
<td>Organizational Charts</td>
<td>RefD</td>
<td>External</td>
</tr>
<tr>
<td>Grant</td>
<td>RefD</td>
<td>External</td>
</tr>
<tr>
<td>Observations (Direct/Participant)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Formal/informal interactions</td>
<td>RefD</td>
<td>Researcher</td>
</tr>
<tr>
<td>Participatory involvement</td>
<td>RefD</td>
<td>Researcher</td>
</tr>
<tr>
<td>Meetings</td>
<td>RefD</td>
<td>Researcher</td>
</tr>
<tr>
<td>Field notes</td>
<td>RefD</td>
<td>Researcher</td>
</tr>
<tr>
<td>Questionnaires/Survey/Discussions</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Questionnaires (Trainer, Staff, End-User)</td>
<td>RefD</td>
<td>Researcher</td>
</tr>
<tr>
<td>Open-ended Questions</td>
<td>RefD</td>
<td>Researcher</td>
</tr>
<tr>
<td>Focus Groups</td>
<td>RefD</td>
<td>Researcher</td>
</tr>
<tr>
<td>STATE Survey on PDC</td>
<td>RefD</td>
<td>External</td>
</tr>
<tr>
<td>Artifacts</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PDC Product (e.g. script, screen shots)</td>
<td>RefD</td>
<td>External</td>
</tr>
<tr>
<td>Product Documentation</td>
<td>RefD</td>
<td>External</td>
</tr>
</tbody>
</table>

Note: RefD = Referential Data, ID = Interview Data

The table identifies the documents, the EDC and IDC groups (when the data were collected), the application to the three research questions presented in this study, and if the data sources were collected by the researcher or an external source. Table 3 then shows the breakdown of the instruments and documents by research questions.
The UNIVERSITY gave me free access and permission to use any documents on file regarding the PDC development. However, there were documents that had been disposed of or versions of drafts that were not dated. More credibility was given to the dated and final-version documents and to the documents personally collected by the researcher prior to the role as

Table 3
Instrument and Documents

<table>
<thead>
<tr>
<th>INSTRUMENTS/DOCUMENTS</th>
<th>DATA GROUP</th>
<th>RESEARCH QUESTION TO ADDRESS</th>
<th>CONTRIBUTOR OF DATA SOURCE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Documents</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Progress Reports</td>
<td>EDC</td>
<td>1</td>
<td>Researcher</td>
</tr>
<tr>
<td>Letters/E-mails</td>
<td>EDC</td>
<td>1, 2, 3</td>
<td>Researcher &amp; External</td>
</tr>
<tr>
<td><strong>Archival Records</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Budgets</td>
<td>EDC</td>
<td>1, 2, 3</td>
<td>Researcher &amp; External</td>
</tr>
<tr>
<td>Organizational Charts</td>
<td>EDC</td>
<td>1, 2, 3</td>
<td>External</td>
</tr>
<tr>
<td>Grant</td>
<td>EDC</td>
<td>1, 2, 3</td>
<td>External</td>
</tr>
<tr>
<td><strong>Observations (Direct/Participant)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Formal/informal interactions</td>
<td>EDC</td>
<td>1, 2, 3</td>
<td>Researcher</td>
</tr>
<tr>
<td>Participatory involvement</td>
<td>EDC</td>
<td>1, 2, 3</td>
<td>Researcher</td>
</tr>
<tr>
<td>Meetings</td>
<td>EDC</td>
<td>1, 2, 3</td>
<td>Researcher</td>
</tr>
<tr>
<td>Field notes</td>
<td>EDC</td>
<td>1, 2, 3</td>
<td>Researcher</td>
</tr>
<tr>
<td><strong>Interviews</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Questionnaires (Trainer, Staff, End-User)</td>
<td>EDC</td>
<td>1, 2, 3</td>
<td>Researcher</td>
</tr>
<tr>
<td>Open-ended Questions</td>
<td>EDC/IDC</td>
<td>1, 2, 3</td>
<td>Researcher</td>
</tr>
<tr>
<td>Focus Groups</td>
<td>EDC</td>
<td>1, 2, 3</td>
<td>Researcher</td>
</tr>
<tr>
<td>STATE pilot Survey on PDC</td>
<td>EDC</td>
<td>1, 2</td>
<td>External</td>
</tr>
<tr>
<td><strong>Artifacts</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PDC Product (e.g. script, screen shots)</td>
<td>EDC</td>
<td>1, 2, 3</td>
<td>External</td>
</tr>
<tr>
<td>Product Documentation</td>
<td>EDC</td>
<td>1, 2, 3</td>
<td>External</td>
</tr>
</tbody>
</table>
replacer of the participatory member of the development team. I also matched these data to commentary collected through the interviews taken during this research.

The data collection occurred in two stages. The first stage was the EDC data, which was collected prior to the IDC. This stage can be further broken into two steps: the development and the implementation. The development data primarily include the documents, archival records, observations, and artifacts collected throughout the physical development processes of the PDC project. The implementation data collection came from the Stage 1 study and documentation pertaining to the implementation. These data include both observation and interview evidence along with quantitative data from the questionnaires. The second stage of data collection was the IDC stage. During this stage of data collection, ten interviews were the sole collection method. While the different stages of data collection present different evidence, all evidence was eventually merged.

Stage 1, EDC: Step 1 – Development Data

Data sources from this step of the EDC stage were collected throughout the development of the PDC from its original grant approval in 2000. The researcher of this study became involved in the PDC project in 2001. Documentation before this point is from external sources, such as grant documentation, and fall under the archival data. Beginning in 2003, various notes from development team meetings were recorded by the researcher until the end of the development phase in 2006 and sporadically into the implementation phase, which is currently ongoing. The researcher’s role in the development process was assistant design team coordinator. Responsibilities ranged from overseeing the budget, handling the talent releases/contracts, preparing the storyboards, assisting with video production, travel arrangements, and various
other duties. In addition, the researcher, as a participant, was responsible for recording notes during the production meetings. The archival data and the records kept by the researcher were used as data sources for the development stage. The director for the UNIVERSITY department also provided open access to the data and records from the project for this research. In addition, the researcher’s emails were used as time references to various events in the development process and to identify any potential conflicts or themes that were investigated during the interviews.

Stage 1, EDC: Step 2 – Implementation Data

The second step of the data collection occurred in 2007 and is referred to as the implementation data. The data sources from this period include both qualitative and quantitative data: documentation from the advisory group meetings during the implementation Stage 1 study, implementation procedures followed by the individual agencies during the Stage 1 study, and three questionnaires. A core advisory group for the Stage 1 study and distribution of questionnaires was assembled from the ASSOCIATION, UNIVERSITY, the co-author of P.R.I.D.E. and the researcher. The researcher of this study was the primary researcher for the Stage 1 study. To disseminate information on the Stage 1 study, the ASSOCIATION distributed the agency participation guidelines (see Appendix E) for this study. One staff member from each participating agency was assigned as the Stage 1 study agency lead. The Stage 1 agency leads took on all aspects of their agencies’ participation in the Stage 1 study and were the liaisons between the agencies and the researcher. Participants were provided an invitation to participate created through the core advisory group (see Appendix F). Agencies also distributed their own agency announcement documents promoting the Stage 1 study portion of this research (example
provided in Appendix G). A sample of the PDC User Questionnaire is provided in Appendix H. The Staff and Trainer Questionnaires are not appended here as they followed the same essential format as Appendix H.

Following the Stage 1 study, the agency leads participated in a one-day focus group meeting with a set agenda to discuss their experiences during the Stage 1 study (see Appendix I for agenda) based on predetermined focus group questions (see Appendix J). The ASSOCIATION recorded this process and provided a tape for this research to accompany the observational notes. Five liaisons agreed to short interviews with the researcher to provide generalized characteristics of their agencies and specifics to the implementation procedures followed in the Stage 1 study.

The data from EDC Step 2 also included three quantitative surveys with additional open-ended questions. The participants for the questionnaire were a purposive sample, solicited through their agency lead, to all foster parents and staff members associated with the ASSOCIATION during the first implementation of the product. Three online questionnaires were developed to investigate the implementation needs of the ASSOCIATION and their affiliated agencies for the PDC. The surveys were multi-purpose, providing information for the ASSOCIATION, UNIVERSITY and this research. As such, not all questions were intended to be part of this research. The questionnaires were titled by their intended participants: trainers, staff members, and end-users (the foster/resource families). The questionnaires required approximately 45 minutes of completion time. The first questionnaire focused on the trainers’ perspectives, the second on staff’s perspectives, and the third on the users’ (foster/resource families) perspectives. The trainer questionnaire consisted of 117 questions, the staff questionnaire consisted of 124 questions, and the user questionnaire consisted of 119 questions.
A majority of questions overlapped all three questionnaires. Data were collected and categorized as background information, technical information, learner characteristics, perspectives and learning environment. The questionnaires were distributed electronically via surveymonkey.com (see Appendix C for IRB approval 2007 and Appendix H for questionnaire).

The P.R.I.D.E. Model Development Advisory Group joined together for the Stage 1 test of the PDC in Canada to research the needs of implementation and perspectives of the training product. The advisory group consisted of two members from the ASSOCIATION, the co-author of the PDC, and two members from the UNIVERSITY, including the researcher of this study. The questionnaires were then designed to fit the region. For instance, “foster families” was changed to “resource families.” The ASSOCIATION sent out a request to each agency within its province, a total of 53 agencies. Twenty-five agencies agreed to participate in the study. Thus, the advisory group consisted of the researcher, two staff members from the ASSOCIATION, the instructional design team coordinator, the co-author of the original P.R.I.D.E. model, and a representative from each of the 25 participating agencies.

Each participating agency was given a description of the study and an information sheet (see Appendix E) to pass out to trainers, staff, and resource families. Each agency assigned a lead person, who became the liaison responsible for soliciting volunteers at the local level. Agencies were requested to send out an invitation (see Appendix F) to their entire population (all trainers, staff and families). Many agencies offered participants credit for training (see handout distributed by one agency in Appendix G). Resource families typically receive a small monetary incentive for continual training and are required to receive training credit each year. In addition, participants were informed that they could enter a drawing for a laptop. One laptop was given away at the end of the Stage 1 study. The questionnaires were time intensive, and the drawing
was an acknowledgement of donating their time to this research. All participants were informed at the outset of the questionnaire that their participation should be voluntarily offered as per the IRB guidelines. Participants were able to skip any online questions.

**Stage 2, IDC – Interview Data.**

The second stage of data, referred to as the IDC, was the interviews (see Appendix K for recruitment letter to participate in the interviews). IRB approval was obtained in 2010 (see Appendix D). This collection stage began once Stage 1, EDC, had been analyzed. Stage 2 participants signed a consent to participate (Appendix L) and completed a semi-structured interview lasting approximately two hours. These interviews were audiotaped. Audiotaping was a viable tool in this data collection so the recordings could be transcribed for later analysis.

Participants were asked questions relating to activities, workflow, teamwork, inter- and intra- organizational contradictions, challenges, obstacles, and technical issues (see Appendix M for sample questionnaire). Questions were related to the activity systems analysis. These questions were expanded from the Stage 1 and Stage 2 analyses.

Opportunity was provided for participants to reflect on their perspectives of the experience before, during, and concluding the development and implementation of the PDC. To ensure the data collected and analyzed during this stage reflect the participants’ perspectives accurately, this section of the final research report, which summarizes the individual participants, was compared with data collected in the previous EDC stage and sent to the participants for review, further input, corrections and clarification. Additionally, the activities disclosed in the interviews were compared to the researcher’s notes and financial transactions. An outline of the
Data collection timeline is shown in Table 4. The data analysis procedures timeline is shown in Table 5.

**Data Analysis Procedures**

A great deal of data, as mentioned above, were collected for use in this analysis. These data are a compilation from the ten years since the original grant approval. It is not uncommon for a naturalistic study to include an abundance of data, as these data can both guide the researcher and identify areas in context. The purpose of a case study is to understand the context in developing the instructional materials and to reach an understanding of the motivation for the development process in a collaborative setting. Merriam and Tisdell (2015) explain, “The overall purposes of qualitative research are to achieve an understanding of how people make sense out of their lives, delineate the process (rather than the outcome or product) of meaning-making, and describe how people interpret what they experience” (p. 15). There are two general analytic strategies for analyzing the evidence uncovered in the data collection phases: theoretical propositions and case descriptions (Yin, 2013).

Activity systems analysis is a method of examining an activity’s theoretical perspective by investigating the object-oriented activity as the unit of analysis. Analysis commonly involves the coding of raw data to move it to a conceptual level. Saldana (2015) describes code as “most often a word or short phrase that symbolically assigns a summative, salient, essence-capturing, and/ or evocative attribute for a portion of language-based or visual data” (p. 4). The researcher uses coding to dig beneath the surface to discover hidden information.
Table 4
Data Collection Timeline

<table>
<thead>
<tr>
<th>2000</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>EDC - Stage 1, Step 1</td>
<td>EDC - Stage 1, Step 1</td>
<td>IDC Stage 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Archival Records (Budgets, Progress Reports, Budgets, Organizational Charts, Grants)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Artifacts (PDC Product, Product Documentation)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Documents (Letters, Emails)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>STATE Study</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Observations (interaction, meeting notes, field notes)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Questionnaires</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Focus Groups</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Interviews</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 5
Data Analysis Procedures Timeline

<table>
<thead>
<tr>
<th>2010</th>
<th>2011 - 2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>June through August</td>
<td>September through December</td>
</tr>
<tr>
<td>Write IRB</td>
<td>Receive IRB</td>
</tr>
<tr>
<td>Analyze EDC Data</td>
<td>Transcribe Interviews</td>
</tr>
<tr>
<td>Write Interview Questions</td>
<td>Verify Transcriptions with Participants</td>
</tr>
<tr>
<td>Analyze IDC Data</td>
<td>Compare EDC to IDC Data</td>
</tr>
<tr>
<td>Identify themes and prescriptive activities</td>
<td>Write Findings Chapter</td>
</tr>
<tr>
<td>Write Implications &amp; Conclusion</td>
<td></td>
</tr>
<tr>
<td>Check data contradictions with Participants</td>
<td>Submit Dissertation</td>
</tr>
<tr>
<td>Defend</td>
<td></td>
</tr>
</tbody>
</table>
Miles et al. (2013) state that “coding is deep reflection about and, thus, deep analysis and interpretation of the data’s meanings” (pg. 72). Coding is an analytic tool. Corbin and Strauss (2014) explained some purposes of these analytic tools are as strategies that help distance technical literature from personal experiences, avoid standard ways of thinking about phenomena, stimulate inductive processes, and debunk assumptions (p. 88). The two analytic strategies that stand out are asking questions and making comparisons. When asking questions in the interviews and questionnaires, a flip-flop technique is a tool that can be applied to obtain a different perspective. For instance, asking questions about easy access to the PDC can be reversed to ask what participants consider as forms of difficult access.

Yin (2013) suggested some analytic techniques are pattern matching, explanation-building, and time series analysis. Data collected from Phase 1 (development) were compared, patterns and themes were identified, explanatory links between the data were summed, and a time-series analysis of how and why events over time occurred were assessed during the analysis Phase 1. In Phase 2 (implementation), data underwent the same process of identifying patterns and links. An iterative process followed in which evidence from data in Phase 1 was compared to evidence in Phase 2, which then provided direction for the questions in Phase 3 of the data collection. This is the triangulation technique described earlier. Engeström’s (1993) model of human activity was used to identify the variables. Yamagata-Lynch (2003) noted that once a researcher identifies the activity, he/she “needs to shift the focus on the understanding of the motive-goal-instrumental conditions” rather than the behaviors (p. 104). At this point the data analysis procedure moved to IDC, Stage 2 of the data collection which looked at the collaborative conditions. Mwanza (2001) suggested an eight-step-model for developing open-ended questions for the activity systems.
After the interviews were conducted, the IDC analysis followed. The data were assimilated and sent back to the participants for review. The data were then compared to the data from the EDC. If needed, the data collected in the IDC were again compared to the raw data collected in the EDC. Any contradictions or confusion was re-addressed with the participant for clarity. An explanatory description of the collaborative processes in the instructional development and implementation were then summed up from the entire collection and analysis of the data.

**Trustworthiness**

The data collection presented here comes from multiple collection strategies. Using multiple data collection approaches strengthens the data and corrects some of the deficiencies from any one source of data. Patton (2014) explained that the point of triangulation is to test for consistency between the data sources. Denzin (2009) asserted that “multiple methods must be used in every investigation” because single methods cannot “completely satisfy the demands of interaction theory, or can ever completely reveal all of the relevant features of empirical reality necessary for a theory’s test or development” (pp. 26-27). Creswell (2012) identified good-quality research as having a rigorous approach to the data collection, analysis, and writing processes. Creswell explained:

Rigor is seen, for example, when extensive data collection in the field occurs, or when the researcher conducts multiple levels of data analysis, from the narrow codes or themes to broader interrelated themes to more abstract dimensions. Rigor means, too, that the researcher validates the accuracy of the account using one or more of the procedures for validation, such as member checking, triangulating sources of data, or using a peer or external auditor of the account. (p. 54)
In this study, I engaged in validation strategies, including triangulating data from multiple sources and member checking by having participants review my interpretations for accuracy and context.

Creswell (2012) considers validation as a process to assess the accuracy of the findings. Some steps taken to validate the findings were to provide time for the interviewees to think about the events and review their statements at a later date. In subject characteristics, the subjects could react by means of their recollection and interpretations to make themselves or their part in the research appear of more value. This was addressed by triangulating data to multiple sources. Given that I had participated in the development of the PDC, I had previous knowledge and an inside perspective about the processes and participants. However, I was careful to not make assumptions while collecting data. For instance, I used the same research questions for all participants, even if I was aware some participants were not involved in certain phases. I let the participants state their answers to minimize my assumptions and avoid leading questions.

Another technique, as mentioned, was providing the participants in the IDC a chance to review their comments for accuracy. After the audiotapes were recorded and transcribed, the transcripts were returned to the participants for verification and accuracy. Only two of the ten participants returned the transcripts with minor edits. Additionally, once a rough draft of this research was completed, participants were again provided a copy to review. Although only a couple of the participants responded, their response did not document any discrepancies in the research report.
CHAPTER 4
FINDINGS

The purpose of this longitudinal case study was to investigate and describe the problems, processes and relationships within an inter-organizational partnership on an instructional technology product development and implementation from an activity-theory perspective. This chapter examines an inter-organizational collaboration involving the development of the P.R.I.D.E. Digital Curriculum (PDC). Current research on instructional design models provides a prescriptive process in the transformation of an instructional product, but by looking through an activity-theory lens, a descriptive model digs deeper into tools and relationships of the activities that exist within the process. While the results and actions of this case study are not generalized for all instructional development projects, it does provide a view of how one project encountered challenges and how the participants found solutions to those problems.

The case study involved collaboration among an intra-organization (university) and inter-organizations (external organizations). The longitudinal case study investigated the collaboration on the design, development, and implementation of the P.R.I.D.E. Digital Curriculum (PDC) occurring between 2000 and 2007. During this time period, a Stage 1 quantitative study was conducted. Stage 2 of the study occurred from 2010 to 2016 involving a qualitative study with interviews conducted in 2010 and analysis of collected data from the interviews and Stage 1 documentation. The primary source of data in Stage 2, as described in the methodology, was from interviews with 10 participants involved in the development and implementation of the
PDC. The PDC is a digital interactive training curriculum distributed on CDs (see Appendix F for outline of the 24 training sessions). The training curriculum was broken down into nine modules and each session averaged about three hours of training. Referential data were also used and collected from a variety of sources as outlined in the methodology chapter. Included in the referential data were completed questionnaires from 477 participants during the initial implementation Stage 1 study of the PDC.

Stage 1 Study

This final section of the findings examines the results from the 2007 Implementation Stage 1 Study. As stated earlier in the methodology chapter, the questionnaires (see Appendix H) were a collective inquiry for the ASSOCIATION, UNIVERSITY, and researcher. Therefore, not all questions relate to the current research. The objective of this research was to examine the perspectives and needs of the PDC for implementation. The focus of the study was not to compare effectiveness of the distance learning instruction to the traditional face-to-face training. A total of 477 valid questionnaires were received. (Trainers, n = 53; Staff, n = 174; Users, n = 250). The ASSOCIATION trainer and staff population size in July 2007 was as follows: non-residential services staff = 2,564; residential services staff = 1,178; adoption staff = 125; and administrative staff = 454. The total of all staff, including trainers, equaled a population of 4,321. The total participants included 53 trainers and 174 staff members combined to 227 participants, providing a sample size of 5% of the staff/trainer population (see Figure 4). The number for trainers and staff members could not be divided because often trainers may also be staff members, such as a resource worker who also does training. The participants in this area were
able to choose the questionnaire that they felt best described their role. The total resource family homes available in the study region during July 2007 were 3,385. A total of 250 participants in this category contributed to the online questionnaires, providing a sample size of 7% of the home population (see Figure 4). However, it should be noted that this amount may be lower given the possibility that more than one member from a home participated in the survey. Precise numbers were not available given the fluctuating nature of the child welfare field.

Figure 4. Sample size percentage of end users.

The participants ranged in age from under 25 to over 65, with a concentration between 36 and 55 years old (see Figure 5). Only the end users were questioned on their gender. A higher proportion were female (n = 188) compared to males (n = 51). Most of the participants in the three questionnaires identified their ethnicity as Canadian Origin (n = 340, 71.9%) from a total population of n =473.
Figure 5. Age of participants in study.

The participants reflected multiple roles, with the majority of participants identifying themselves as the foster/resource mother (see Figure 6). Foster fathers were the next largest group of participants. This was viewed as a plus by the ASSOCIATION because many agencies struggle to get the foster fathers to attend the training. The challenge often stated for getting the foster fathers to attend the in-class training relates to the foster fathers’ work schedules. Seeing the foster fathers participating in this type of training sheds light on an alternative method for reaching this audience.
The foster parents typically have experience with computers. A 2003 survey conducted in the early development of PDC (see Appendix U on Activity System 8) as part of the grant identified 85% of foster parents had computers. In the later questionnaire (2007), foster parents were questioned on their prior use of computers, Internet, and CD training. The participants identified that 75.7% of them used a computer practically every day, while only 7.3% stated they never use a computer. They also stated that 65.6% use the Internet practically every day while 7.8% never use the Internet. Table 6 shows the technical experience of the participants.
### Table 6

**Technical Experience**

<table>
<thead>
<tr>
<th>Prior to using the FPDC modules, how often did you use computers?</th>
<th>Trainer</th>
<th>Staff</th>
<th>User</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>N</td>
<td>Mean</td>
<td>N</td>
<td>Mean</td>
</tr>
<tr>
<td>4.43</td>
<td>51</td>
<td>4.83</td>
<td>174</td>
<td>4.16</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Prior to using the FPDC modules, how often did you use Internet?</th>
<th>Trainer</th>
<th>Staff</th>
<th>User</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>N</td>
<td>Mean</td>
<td>N</td>
<td>Mean</td>
</tr>
<tr>
<td>4.02</td>
<td>50</td>
<td>4.63</td>
<td>174</td>
<td>4.13</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Prior to using the FPDC modules, how often did you use CD/DVD training?</th>
<th>Trainer</th>
<th>Staff</th>
<th>User</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>N</td>
<td>Mean</td>
<td>N</td>
<td>Mean</td>
</tr>
<tr>
<td>1.86</td>
<td>50</td>
<td>1.94</td>
<td>174</td>
<td>1.5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Prior to using the FPDC modules, how often did you use any type of resource family training materials?</th>
<th>Trainer</th>
<th>Staff</th>
<th>User</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>N</td>
<td>Mean</td>
<td>N</td>
<td>Mean</td>
</tr>
<tr>
<td>2.92</td>
<td>49</td>
<td>1.7</td>
<td>174</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Prior to using the FPDC modules, how often did you use PRIDE training materials?</th>
<th>Trainer</th>
<th>Staff</th>
<th>User</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>N</td>
<td>Mean</td>
<td>N</td>
<td>Mean</td>
</tr>
<tr>
<td>2.69</td>
<td>52</td>
<td>1.38</td>
<td>173</td>
<td></td>
</tr>
</tbody>
</table>

1 = Never, 2 = A Few times a year, 3 = A few times a month, 4= A few times a week, 5 = Practically every day

However, when it came to CD training, which is the medium for the PDC training, only 3.4% of the participants stated that they used this type of material for training, while 52.4% had never used CDs for training (see Table 7). When all questionnaires were combined, this was the first time 54% of the participants had used a CD/DVD training – for the end users that number jumped to 61%, and less than 15% had used CD/DVD training within the last year. Seventy-seven percent of all participants claimed to use computers practically every day. This was highest among staff and lowest amongst end users (94.3% and 63.9%, respectively). Since this 2007 study, the PDC was transitioned to online learning through Internet access. The results from this study reflect that 83% accessed the Internet at least a few times a week but dropped to 78% for the end users. Based on these data, online learning is a better method for reaching participants than the CDs.
Table 7

Previous CD/DVD Training

<table>
<thead>
<tr>
<th>Prior to using the FPDC modules, how often did you use CD/DVD training?</th>
<th>Survey</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Trainer</td>
<td>Staff</td>
<td>User</td>
</tr>
<tr>
<td>Never</td>
<td>22</td>
<td>82</td>
<td>146</td>
</tr>
<tr>
<td>A Few Times a Year</td>
<td>17</td>
<td>53</td>
<td>76</td>
</tr>
<tr>
<td>A Few Times a Month</td>
<td>8</td>
<td>19</td>
<td>11</td>
</tr>
<tr>
<td>A Few Times a Week</td>
<td>2</td>
<td>8</td>
<td>3</td>
</tr>
<tr>
<td>Practically Every Day</td>
<td>1</td>
<td>12</td>
<td>3</td>
</tr>
<tr>
<td>Total</td>
<td>50</td>
<td>174</td>
<td>239</td>
</tr>
</tbody>
</table>

Only the End User Questionnaire identified gender. Most of the responses did not show noteworthy differences between the males and females. Both sexes were asked if they encountered interruptions during their training, and their responses indicated no significant difference in interruptions. However, there was a difference between the sexes for those who did experience interruptions. The men who experienced interruptions were much more likely to experience a higher number of interruptions than the women. Overall, 62% of users encountered interruptions while completing the CDs, with the majority of interruptions due to family, telephone, technical problems, and visitors. An open-ended question was asked of the end users (foster fathers, foster mothers, relatives, etc.) what the reasons were for any interruptions. These results were coded and are shown in Table 8.
Table 8

What Were the Reasons for any Interruptions?

<table>
<thead>
<tr>
<th>Reason</th>
<th>User</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Children/family</td>
<td>101</td>
<td>42.3%</td>
</tr>
<tr>
<td>Telephone</td>
<td>48</td>
<td>20.1%</td>
</tr>
<tr>
<td>CD Froze</td>
<td>16</td>
<td>6.7%</td>
</tr>
<tr>
<td>Break</td>
<td>14</td>
<td>5.9%</td>
</tr>
<tr>
<td>Visitors</td>
<td>10</td>
<td>4.2%</td>
</tr>
<tr>
<td>Household Duties</td>
<td>9</td>
<td>3.8%</td>
</tr>
<tr>
<td>Meals</td>
<td>9</td>
<td>3.8%</td>
</tr>
<tr>
<td>Various</td>
<td>6</td>
<td>2.5%</td>
</tr>
<tr>
<td>Work</td>
<td>6</td>
<td>2.5%</td>
</tr>
<tr>
<td>Discussion</td>
<td>5</td>
<td>2.1%</td>
</tr>
<tr>
<td>N/A</td>
<td>5</td>
<td>2.1%</td>
</tr>
<tr>
<td>Technical Problems</td>
<td>4</td>
<td>1.7%</td>
</tr>
<tr>
<td>Tired</td>
<td>3</td>
<td>1.3%</td>
</tr>
<tr>
<td>Other</td>
<td>2</td>
<td>0.8%</td>
</tr>
<tr>
<td>Meeting</td>
<td>1</td>
<td>0.4%</td>
</tr>
</tbody>
</table>

Even with the interruptions, the trainers, staff, and end users did find learner-centered benefits to the distance training (see Figure 7). The participants were asked to compare classroom training to the distance-learning training of the PDC. Participants scored the distance learning much higher regarding being able to review training material at a later date, available training for shift work, scheduling training at a time convenient for the learner, providing training to a broad audience, and having training that was easily accessible.
The resource families were asked to order their preference for training (see Figure 8). Only participants who ranked all five methods were calculated in this collective question. Both male and female users preferred the same following order of training: 1) multimedia training similar to PDC (video, audio, graphics, interaction…) with a mean of 2.25; 2) classroom-based Training (face to face) with a mean of 2.71; 3) online training (Internet based) with a mean of 2.94; 4) video training (VHS or DVD) with a mean of 3.29; and 5) self-paced training (such as a book) with a mean of 3.81. The bar graphs in Figure 9 reveal the overall visual ranking of each category. The cumulative percentage for top three choices were multimedia (81%), classroom (64.5%), and online (63.2%). Group contact was still encouraged in the open-ended responses. Identified advantages for utilizing the PDC were families in distant locations, families challenged by babysitting or transportation issues, extended family members, and individuals who may miss a session of the module in the face-to-face training.
The PDC was listed as an example for the multimedia method of training. The PDC training is rich in quality media (displayed in Appendix X) as perceived by the participants in this study and may have been ranked as the first choice due to the strengths identified by the
participants. When asked about their overall opinion of the PDC training, the end users ranked each of the following items as agreed or strongly agreed:

- 98% - Information presented in a logical manner
- 97% - Screens contain an appropriate balance of information
- 97% - The key concepts are emphasized appropriately
- 98% - The information is easy to understand
- 97% - The language was clear to understand
- 93% - Definitions and terms were used properly

To check the validity of these questions, a few additional questions were asked for cross reference.

- 10% agreed - It is hard to follow along with the contents direction
- 7% agreed - Screens contained too much text
- 10% agreed - Screens are cluttered and have too many graphics

The trainer, staff, and end users were all asked to rate their impression of specific components of the PDC training on a 5-point Likert scale, with 1 being strongly disagree to 5 being strongly agree (see Figure 10). Their impressions of these components again ranked very high.

- Materials relevant (disagreed = 3%, agreed = 94%)
- Instruction effective (disagreed = 3%, agreed = 91%)
- Resource parent commentary (Speaking from Experience) were helpful (disagreed = 3%, agreed = 92%)
- Dramatized video scenarios helped clarify topic (disagreed = 4%, agreed = 89%)
- Would recommend to resource families (disagreed = 3%, agreed = 92%)
- Topics addressed are useful (disagreed = 3%, agreed = 95%)
- I hope to see similar multimedia instruction in the future (disagreed = 4%, agreed = 89%)
- The trainers presented the information in an organized manner (disagreed = 2%, agreed = 94%)
- CDs easy to use (disagreed = 6%, agreed = 88%)
- Interactive exercises helped me clarify and understand the material (disagreed 1%, agreed = 92%)
- The final exercise at the end of each session (Theory into Practice) helped me apply the material I learned (disagreed = 2%, agreed = 91%)
In open-ended responses, the strengths perceived of the PDC varied widely, including access, clarity of topic, quality content, thorough content, flexible and ease of use (see Table 9).

A word cloud (see Figure 11) identifying the participants’ comments on the perceived strengths in the PDC training identified the most common words used to describe the strengths were trainings, time, own pace, information, learning, foster, and parent.

Although this study did not test the effectiveness of the training compared to the traditional classroom training, trainers, staff, and end users were asked for their perceptions of the embedded assessments (see Figure 12). Less than 10% disagreed with the statement that the evaluation was appropriate for determining the users’ understanding and the evaluation provides adequate assessment of comprehension, while 12% disagreed that the CD training was comparable to the learning in the traditional classroom.

Figure 10. Opinion of components.
Table 9

Strengths of PDC

<table>
<thead>
<tr>
<th></th>
<th>Trainer</th>
<th>Staff</th>
<th>User</th>
<th>Total</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Access to Training</td>
<td>6</td>
<td>16</td>
<td>25</td>
<td>47</td>
<td>7.9%</td>
</tr>
<tr>
<td>Clarity</td>
<td>4</td>
<td>11</td>
<td>20</td>
<td>35</td>
<td>5.9%</td>
</tr>
<tr>
<td>Content</td>
<td>6</td>
<td>12</td>
<td>14</td>
<td>32</td>
<td>5.4%</td>
</tr>
<tr>
<td>Thorough</td>
<td>2</td>
<td>9</td>
<td>15</td>
<td>26</td>
<td>4.4%</td>
</tr>
<tr>
<td>Real Life Examples</td>
<td>3</td>
<td>8</td>
<td>14</td>
<td>25</td>
<td>4.2%</td>
</tr>
<tr>
<td>Flexible</td>
<td>2</td>
<td>17</td>
<td>5</td>
<td>24</td>
<td>4.0%</td>
</tr>
<tr>
<td>Ease of use</td>
<td>3</td>
<td>9</td>
<td>10</td>
<td>22</td>
<td>3.7%</td>
</tr>
<tr>
<td>Interactive</td>
<td>6</td>
<td>9</td>
<td>6</td>
<td>21</td>
<td>3.5%</td>
</tr>
<tr>
<td>Variety of styles</td>
<td>4</td>
<td>11</td>
<td>6</td>
<td>21</td>
<td>3.5%</td>
</tr>
<tr>
<td>Individual Needs/Focus</td>
<td>5</td>
<td>8</td>
<td>7</td>
<td>20</td>
<td>3.4%</td>
</tr>
<tr>
<td>Broader Audience</td>
<td>4</td>
<td>5</td>
<td>10</td>
<td>19</td>
<td>3.2%</td>
</tr>
<tr>
<td>Other</td>
<td>10</td>
<td>5</td>
<td>15</td>
<td></td>
<td>2.5%</td>
</tr>
<tr>
<td>Professional</td>
<td>1</td>
<td>8</td>
<td>3</td>
<td>12</td>
<td>2.0%</td>
</tr>
<tr>
<td>Less distractions</td>
<td>2</td>
<td>7</td>
<td>9</td>
<td>22</td>
<td>3.7%</td>
</tr>
<tr>
<td>Consistent</td>
<td>1</td>
<td>6</td>
<td>2</td>
<td>9</td>
<td>1.5%</td>
</tr>
<tr>
<td>Good Resource</td>
<td>2</td>
<td>1</td>
<td>6</td>
<td>9</td>
<td>1.5%</td>
</tr>
<tr>
<td>Interesting</td>
<td>1</td>
<td>4</td>
<td>5</td>
<td></td>
<td>0.8%</td>
</tr>
<tr>
<td>Attention</td>
<td>3</td>
<td>3</td>
<td></td>
<td>6</td>
<td>0.5%</td>
</tr>
<tr>
<td>Enjoyable</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>3</td>
<td>0.5%</td>
</tr>
<tr>
<td>Motivational</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td></td>
<td>0.5%</td>
</tr>
<tr>
<td>Home</td>
<td>2</td>
<td>2</td>
<td></td>
<td>4</td>
<td>0.3%</td>
</tr>
<tr>
<td>Time effective</td>
<td>2</td>
<td>2</td>
<td></td>
<td>4</td>
<td>0.3%</td>
</tr>
<tr>
<td>Cost</td>
<td>1</td>
<td>1</td>
<td></td>
<td>2</td>
<td>0.2%</td>
</tr>
<tr>
<td>Effective</td>
<td>1</td>
<td>1</td>
<td></td>
<td>2</td>
<td>0.2%</td>
</tr>
<tr>
<td>Increase Participation</td>
<td>1</td>
<td>1</td>
<td></td>
<td>2</td>
<td>0.2%</td>
</tr>
<tr>
<td>More Training</td>
<td>1</td>
<td>1</td>
<td></td>
<td>2</td>
<td>0.2%</td>
</tr>
<tr>
<td>Reduce training time</td>
<td>1</td>
<td>1</td>
<td></td>
<td>2</td>
<td>0.2%</td>
</tr>
<tr>
<td>Remote areas</td>
<td>1</td>
<td>1</td>
<td></td>
<td>2</td>
<td>0.2%</td>
</tr>
<tr>
<td>Review Later</td>
<td>6</td>
<td>24</td>
<td>18</td>
<td>48</td>
<td>8.1%</td>
</tr>
<tr>
<td>Own pace</td>
<td>8</td>
<td>35</td>
<td>40</td>
<td>83</td>
<td>13.9%</td>
</tr>
<tr>
<td>Convenient</td>
<td>8</td>
<td>33</td>
<td>54</td>
<td>95</td>
<td>15.9%</td>
</tr>
<tr>
<td>Total Comments</td>
<td>76</td>
<td>240</td>
<td>280</td>
<td>596</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

Types of Items in Content Category

<table>
<thead>
<tr>
<th>Challenging</th>
<th>Good Technology</th>
<th>Team Development</th>
</tr>
</thead>
<tbody>
<tr>
<td>Confidence Builder</td>
<td>Helpful</td>
<td>Team Perspectives</td>
</tr>
<tr>
<td>Different Options</td>
<td>Videos</td>
<td>Visual</td>
</tr>
<tr>
<td>Feedback</td>
<td>Speaking from Experience</td>
<td></td>
</tr>
</tbody>
</table>
Figure 11. Strengths tag cloud.
Un fortunately, I realized in hindsight that the comparable question did not answer if those who disagreed with the CD version compared to the traditional version felt that one version was superior to another. There is a possibility that of the 12% who disagreed, some may have felt the information learned through the PDC version was superior due to the increased visuals and interaction. What is noticeable in these evaluation questions was that the participants selected “neutral” more often, as if they were more uncertain.

![Figure 12. Comparable evaluation of skills.](image)

When implementing a new training product, it was also important to examine the perceptions of the trainers and staff members. If the trainers or staff feel negatively about the new product, that perhaps the distance learning would replace the trainers or cause trainers and staff additional work, then their support of the implementation might have been weakened. On the trainer’s questionnaire, several questions were asked pertaining to the PDC and the trainer’s
role. While the majority of trainers agreed or strongly agreed on the questions, their perceptions did not yield very high opinions. It appears the majority of trainers felt the role of the trainer would change with the new distance learning but to what degree was uncertain.

- 59% agreed - Reduce the number of trainers needed
- 63% agreed - Reduce the trainers' time used for in-service training
- 78% - Require trainers to redesign their role in training
- 70% - Require trainers specialized in distance training

Additionally, trainers felt that the transition to distance training would require additional support.

- 73% - Need to have universal administrative support throughout agency
- 88% - Need demonstrated support and encouragement by agency administration

Last, the trainers were strongly in favor of also using the distance-learning materials in the classroom.

- 96% - Provide trainers with resources that they could integrate with classroom-based learning.

Trainers and staff were than asked about their perceptions of distance education through the FPDC project or something similar (see Table 10). Their agreement on the importance of the needs listed was similar, except the staff felt stronger about the distance training replacing trainers than the trainers did. Both groups felt the distance training needed to show some proof of completion and needed to be followed up with a face-to-face meeting to evaluate. They also felt distance training needed to be supported through online communication tools and would reduce the cost of training for the agencies.

The trainers and staff were also asked what portions of the PDC materials might be useful for training the staff. Their perceptions differed on a few of the items. Trainers rated higher the scenarios and graphic lists as useful tools for training staff, whereas the staff rated the interactive activities as being more useful for their training (see Table 11).
Table 10
Perceptions on Distance Education

<table>
<thead>
<tr>
<th>Perception</th>
<th>n</th>
<th>Staff Mean</th>
<th>Trainer Mean</th>
<th>Total Mean</th>
<th>Total % Agreed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Need to be equivalent to traditional training in learner’s outcome</td>
<td>205</td>
<td>4.41</td>
<td>4.38</td>
<td>4.40</td>
<td></td>
</tr>
<tr>
<td>Assist in Resource family training</td>
<td>207</td>
<td>4.55</td>
<td>4.64</td>
<td>4.57</td>
<td></td>
</tr>
<tr>
<td>Requires some proof of completion</td>
<td>207</td>
<td>4.73</td>
<td>4.84</td>
<td>4.75</td>
<td></td>
</tr>
<tr>
<td>Requires a face to face follow-up with the resource worker.</td>
<td>206</td>
<td>4.47</td>
<td>4.24</td>
<td>4.41</td>
<td></td>
</tr>
<tr>
<td>Must have a Trainer and/or Resource worker evaluate the resource family’s learning</td>
<td>206</td>
<td>4.34</td>
<td>4.29</td>
<td>4.33</td>
<td></td>
</tr>
<tr>
<td>Requires communication tools, such as an online chat room or “FAQ” message board, for resource families to access</td>
<td>207</td>
<td>4.24</td>
<td>4.08</td>
<td>4.20</td>
<td></td>
</tr>
<tr>
<td>Reduce the cost of training for the agency</td>
<td>206</td>
<td>3.99</td>
<td>4.02</td>
<td>4.00</td>
<td></td>
</tr>
<tr>
<td>Replace traditional training</td>
<td>206</td>
<td>2.83</td>
<td>2.40</td>
<td>2.73</td>
<td></td>
</tr>
</tbody>
</table>

Table 11
Trainer versus Staff Perception

<table>
<thead>
<tr>
<th>Method</th>
<th>n</th>
<th>Staff mean</th>
<th>Trainer mean</th>
<th>Total Mean</th>
<th>Total % Agreed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Co-narrator Video Clips</td>
<td>205</td>
<td>3.55</td>
<td>3.54</td>
<td>3.55</td>
<td>53.2%</td>
</tr>
<tr>
<td>Scenarios (dramatized video clips)</td>
<td>205</td>
<td>3.84</td>
<td>4.21</td>
<td>3.93</td>
<td>72.2%</td>
</tr>
<tr>
<td>Speaking from Experience (video commentary)</td>
<td>200</td>
<td>4.05</td>
<td>4.02</td>
<td>4.05</td>
<td>74.0%</td>
</tr>
<tr>
<td>Interactive Activities (such as drag and drop)</td>
<td>203</td>
<td>3.77</td>
<td>3.38</td>
<td>3.67</td>
<td>60.6%</td>
</tr>
<tr>
<td>Graphic Lists (such as one screen bullet point lists that could be used in a PowerPoint presentation)</td>
<td>205</td>
<td>3.82</td>
<td>4.27</td>
<td>3.93</td>
<td>73.7%</td>
</tr>
<tr>
<td>Audio Clips</td>
<td>203</td>
<td>3.82</td>
<td>3.83</td>
<td>3.82</td>
<td>65.5%</td>
</tr>
</tbody>
</table>

Staff were then asked how they perceived the PDC could help with training staff in the various roles (see Figure 13). The PDC was originally designed to train the end users, but the results from the staff questionnaire identified the PDC as a beneficial training tool for the entire agency. In fact, 66% of the participants agreed that they would support an agency-wide mandate
that all staff must participate in the PDC, while only 13.5% stated they would not support that mandate (20.6% were neutral). A cross-reference question stating “the FPDC is not appropriate for training staff” was also provided to compare results (only 13% agreed with that statement).

![Figure 13. Staff training.](image)

All the participants were then asked what type of support families would need for the PDC based on the choices of essential, optional, or not necessary. Demonstrated support and encouragement by agency administration ranked the highest at 96% (70.5% essential and 23.4% as optional). All five items listed were rated at 80% or higher for being either essential or an optional choice of support (see Figure 14).
There were some notable problems detected from the pilot study. Trainers identified the support necessary for implementing the PDC: an orientation, a systematic plan for implementation, available equipment (such as a computer lab), an agency/IT-based support and help desk for users. It was found that 21.7% of users used the Help function primarily for technical issues that were corrected after this study. However, it was also used, although sparingly, for clarification of the product.

When the trainers, staff, and end users were asked if there was an existing feedback system established in their agency for questions (see Table 12), the majority of trainers and staff stated no, but the users felt they did actually know a system for asking their questions. This may imply that users have developed a non-structured feedback system worth investigating in future research.
Table 12
Different Perspectives on Feedback

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
<th>n</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Trainer</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Count</td>
<td>15</td>
<td>30</td>
<td>45</td>
</tr>
<tr>
<td>% within Survey</td>
<td>33.30%</td>
<td>66.70%</td>
<td></td>
</tr>
<tr>
<td><strong>Staff</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Count</td>
<td>43</td>
<td>97</td>
<td>140</td>
</tr>
<tr>
<td>% within Survey</td>
<td>30.70%</td>
<td>69.30%</td>
<td></td>
</tr>
<tr>
<td><strong>User</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Count</td>
<td>105</td>
<td>97</td>
<td>202</td>
</tr>
<tr>
<td>% within Survey</td>
<td>52.00%</td>
<td>48.00%</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Count</td>
<td>163</td>
<td>224</td>
<td>387</td>
</tr>
<tr>
<td>% within Survey</td>
<td>42.10%</td>
<td>57.90%</td>
<td></td>
</tr>
</tbody>
</table>

Some of the top limitations listed in the open-ended responses included lack of group interaction, unanswered questions, and low computer literacy skills (see Table 13). It should be noted that many of the participants who identified the low computer literacy skills as a limitation did not actually identify themselves in that category but felt that others may have problems. So this limitation was likely an assumption rather than an actual limitation.
Table 13

Limitations of PDC

<table>
<thead>
<tr>
<th></th>
<th>Trainer</th>
<th>Staff</th>
<th>User</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n = 41</td>
<td>n = 128</td>
<td>n = 173</td>
<td>Total</td>
</tr>
<tr>
<td>Group Interaction/Support Systems</td>
<td>19</td>
<td>43</td>
<td>48</td>
<td>110</td>
</tr>
<tr>
<td>Questions/Answers</td>
<td>10</td>
<td>25</td>
<td>29</td>
<td>64</td>
</tr>
<tr>
<td>Computer Literacy Skills</td>
<td>4</td>
<td>22</td>
<td>21</td>
<td>47</td>
</tr>
<tr>
<td>Evaluation/Transfer of Learning</td>
<td>9</td>
<td>28</td>
<td>5</td>
<td>42</td>
</tr>
<tr>
<td>Content/Design</td>
<td>5</td>
<td>14</td>
<td>22</td>
<td>41</td>
</tr>
<tr>
<td>technical Problems</td>
<td>5</td>
<td>9</td>
<td>20</td>
<td>34</td>
</tr>
<tr>
<td>Access</td>
<td>7</td>
<td>12</td>
<td>16</td>
<td>35</td>
</tr>
<tr>
<td>Peer Learning</td>
<td>8</td>
<td>8</td>
<td>15</td>
<td>31</td>
</tr>
<tr>
<td>Length of Cd/Time for Staff</td>
<td>15</td>
<td>5</td>
<td>20</td>
<td>5.8%</td>
</tr>
<tr>
<td>Other</td>
<td>1</td>
<td>2</td>
<td>10</td>
<td>13</td>
</tr>
<tr>
<td>Pace</td>
<td>4</td>
<td>7</td>
<td>11</td>
<td>3.2%</td>
</tr>
<tr>
<td>Need for Information/Written Material</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>9</td>
</tr>
<tr>
<td>Disadvantageous</td>
<td>3</td>
<td>5</td>
<td>8</td>
<td>2.3%</td>
</tr>
<tr>
<td>Distractions</td>
<td>2</td>
<td>3</td>
<td>5</td>
<td>1.5%</td>
</tr>
<tr>
<td>Printed Material</td>
<td></td>
<td></td>
<td>5</td>
<td>5</td>
</tr>
</tbody>
</table>

Some of the top ways to overcome these limitations, as suggested by the open-ended responses, were online tools (discussion boards, chats, etc.), follow-up meetings with a case worker or trainer, a system for providing feedback from others, and an orientation to the training (see Table 14). The trainers and staff both identified a need to have time factored into their work schedules for the training.
Table 14

Suggested Techniques to Overcome Limitations

<table>
<thead>
<tr>
<th>Suggested Techniques</th>
<th>Trainer</th>
<th>Staff</th>
<th>User</th>
<th>Total</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Online Tools: Discussion Board, Chats, Help Desk…</td>
<td>11</td>
<td>18</td>
<td>28</td>
<td>57</td>
<td>18.9%</td>
</tr>
<tr>
<td>Evaluation/Follow Up</td>
<td>11</td>
<td>32</td>
<td>12</td>
<td>55</td>
<td>18.2%</td>
</tr>
<tr>
<td>Others Attitude: Advertise, Feedback, Surveys, Trying It, Word of Mouth</td>
<td>9</td>
<td>14</td>
<td>23</td>
<td>46</td>
<td>15.2%</td>
</tr>
<tr>
<td>Orientation</td>
<td>4</td>
<td>12</td>
<td>17</td>
<td>33</td>
<td>10.9%</td>
</tr>
<tr>
<td>Group/Cluster Training</td>
<td>3</td>
<td>17</td>
<td>8</td>
<td>28</td>
<td>9.3%</td>
</tr>
<tr>
<td>Fix Technical Problems</td>
<td>1</td>
<td>4</td>
<td>16</td>
<td>21</td>
<td>7.0%</td>
</tr>
<tr>
<td>Agency Support: Management, Staff, IT…</td>
<td>7</td>
<td>11</td>
<td>2</td>
<td>20</td>
<td>6.6%</td>
</tr>
<tr>
<td>Offer Various Methods</td>
<td>4</td>
<td>7</td>
<td>9</td>
<td>20</td>
<td>6.6%</td>
</tr>
<tr>
<td>Group Meeting</td>
<td>2</td>
<td>10</td>
<td>6</td>
<td>18</td>
<td>6.0%</td>
</tr>
<tr>
<td>other</td>
<td>1</td>
<td>8</td>
<td>7</td>
<td>16</td>
<td>5.3%</td>
</tr>
<tr>
<td>Information/Written Materials</td>
<td>1</td>
<td>3</td>
<td>9</td>
<td>13</td>
<td>4.3%</td>
</tr>
<tr>
<td>Time: Designate, Block, Availability, Job</td>
<td>0</td>
<td>11</td>
<td>1</td>
<td>12</td>
<td>4.0%</td>
</tr>
<tr>
<td>Access -Provide computers/lab</td>
<td>1</td>
<td>3</td>
<td>7</td>
<td>11</td>
<td>3.6%</td>
</tr>
<tr>
<td>Change Content/ Design</td>
<td>1</td>
<td>1</td>
<td>3</td>
<td>5</td>
<td>1.7%</td>
</tr>
<tr>
<td>Management/Staff Support</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>4</td>
<td>1.3%</td>
</tr>
<tr>
<td>Use as Resource/Objects</td>
<td>4</td>
<td></td>
<td>4</td>
<td></td>
<td>1.3%</td>
</tr>
<tr>
<td>Team Learning</td>
<td></td>
<td>2</td>
<td>2</td>
<td></td>
<td>0.7%</td>
</tr>
</tbody>
</table>

The word cloud in Figure 15 identifies the most common words used in the combined comments under the question for suggestions to overcome limitations.
The overall perspective of the PDC program was highly positive. Few concerns were given for the lack of contact and group interaction. These concerns should be addressed in the development of a universal system implementing the PDC. Possible solutions for the distance learning program include online discussion boards, online chats, an e-mail or online FAQ section for questions and a help desk. Information pertaining to regional/local policy and procedures as it relates to each module was also recommended either online or in printed form.
Follow-up with the trainer or worker was considered either essential or optional by 91.4% of the participants. The greatest discrepancy and significance in the three groups was found through viewing the response files saved on the user’s computer (from text entry activities). The PDC program had embedded assessments that would save to the trainee’s computer. Only 5.7% of the users felt these files should be shared with the trainer, but the trainers and staff strongly favored viewing the files (82.2% and 77.3%, respectively), as presented in Table 15. These files were designed to be part of the embedded evaluation of the PDC and may be further investigated as to their intended objective. The face-to-face training programs typically only required that participants be present at the training and did not require an assessment be submitted at the end of the session. Trainees may be wary of sharing the embedded assessments since they did not need to in the face-to-face training. This could be further researched to determine if the embedded assessments should serve as a self-assessment or a comprehensive assessment for trainers to review with the resource families’ understanding of the concepts in the training.

Table 15
Reviewing Saved Files

<table>
<thead>
<tr>
<th>Should the trainer review these [saved] files?</th>
<th>Yes</th>
<th>No</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Trainer</strong></td>
<td>Count</td>
<td>37</td>
<td>8</td>
</tr>
<tr>
<td>% within Survey</td>
<td>82.2%</td>
<td>17.8%</td>
<td></td>
</tr>
<tr>
<td><strong>Staff</strong></td>
<td>Count</td>
<td>119</td>
<td>35</td>
</tr>
<tr>
<td>% within Survey</td>
<td>77.3%</td>
<td>22.7%</td>
<td></td>
</tr>
<tr>
<td><strong>User</strong></td>
<td>Count</td>
<td>12</td>
<td>198</td>
</tr>
<tr>
<td>% within Survey</td>
<td>5.7%</td>
<td>94.3%</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>Count</td>
<td>168</td>
<td>241</td>
</tr>
<tr>
<td>% within Survey</td>
<td>41.1%</td>
<td>58.9%</td>
<td></td>
</tr>
</tbody>
</table>
In addition to developing a universal system for implementing the PDC, participants acknowledged a need for an orientation on the product. Less than 15% of participants had used CD training within the year. As indicated in the questionnaire results, 82.9% of trainers and staff at the time of the study did not know the procedure for implementing the PDC product. The trainer’s questionnaire specially asked what type of support the trainers felt they needed for implementing the PDC. Based upon the analysis of comments made in the questionnaires, the training components should include instructions on installation, text entry, interactive features such as drag and drop, and basic functions such as saving and printing. The orientation should also include departmental procedurals for the universal system implementation. Table 16 reflects on their open-ended responses.

**Table 16**

Support for Trainers

<table>
<thead>
<tr>
<th>What support will the agency Trainers need to use the digital curriculum with their Resource Families?</th>
<th>n = 46</th>
<th>Trainer</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Orientation Training</td>
<td>8</td>
<td>17.4%</td>
<td></td>
</tr>
<tr>
<td>Systematic Plan</td>
<td>7</td>
<td>15.2%</td>
<td></td>
</tr>
<tr>
<td>Equipment</td>
<td>6</td>
<td>13.0%</td>
<td></td>
</tr>
<tr>
<td>IT Support</td>
<td>6</td>
<td>13.0%</td>
<td></td>
</tr>
<tr>
<td>Review Time</td>
<td>6</td>
<td>13.0%</td>
<td></td>
</tr>
<tr>
<td>CD Knowledge</td>
<td>5</td>
<td>10.9%</td>
<td></td>
</tr>
<tr>
<td>help desk</td>
<td>5</td>
<td>10.9%</td>
<td></td>
</tr>
<tr>
<td>none</td>
<td>5</td>
<td>10.9%</td>
<td></td>
</tr>
<tr>
<td>Staff Support</td>
<td>4</td>
<td>8.7%</td>
<td></td>
</tr>
<tr>
<td>Management Support</td>
<td>3</td>
<td>6.5%</td>
<td></td>
</tr>
<tr>
<td>Trainer Copies</td>
<td>2</td>
<td>4.3%</td>
<td></td>
</tr>
<tr>
<td>Agency Support</td>
<td>1</td>
<td>2.2%</td>
<td></td>
</tr>
<tr>
<td>Financial Support</td>
<td>1</td>
<td>2.2%</td>
<td></td>
</tr>
<tr>
<td>Peer Trainer Learning</td>
<td>1</td>
<td>2.2%</td>
<td></td>
</tr>
<tr>
<td>Time</td>
<td>1</td>
<td>2.2%</td>
<td></td>
</tr>
<tr>
<td>Written Material</td>
<td>1</td>
<td>2.2%</td>
<td></td>
</tr>
</tbody>
</table>
Based on the pilot study, the development team created a product that was widely accepted by the trainers, staff, and end users. Every question relating to the quality of the content, CDs ease of use, and instructional design received high marks by the majority. The pilot study also served a purpose for the development team (UNIVERSITY) to identify any technical problems, which were corrected by the development team shortly after the pilot study. The over findings from the pilot study revealed the area in need of improvement the most was about the systematic process of implementing the training. The PDC was given to the agencies at the beginning of the pilot study and thus the agencies did not have ample time to develop a universal system for the distribution and implementation of the distance training program. So the results from this study indicating the systems and processes of implementation were not developed into a universal system was due to the timing of the pilot study and access to the training materials. Future research could examine how the agencies did, over time, develop a system and what type of system was developed. During the interview with the ASSOC-Trainer, it was noted that they did develop a couple webinars for the agencies, which she stated was well received by the agencies. This may be an area in which the UNIVERSITY’s development team may consider supporting agencies. Additionally, providing guidelines for implementation, a universal system for agency’s handling of the distance learning CDs, and technical assistance will assist in the successful implementation of the PDC. The ASSOC-Trainer also stated that marketing materials from the development team would be beneficial to pass on to the agencies.

Stage 2 Study

The Stage 1 helped guide the Stage 2 with developing research questions. The interview data were analyzed to first seek out any central themes within the development process. This
The chapter reflects on the broader activity systems discovered in the creation of the PDC. The longitudinal study revealed a multitude of sub-activity systems. As examined in the literature review on activity theory, all activity systems are part of pre-existing and co-existing activity systems. The longitudinal study permitted me to examine broader themes and activity systems and the effects of the collaboration over time. A somewhat unique aspect of this case study was that the curriculum had already been developed for face-to-face instruction and was being reformatted for electronic delivery. As such, I examined the data based on the central intentions of activities within the product collaboration. There were four central themes detected: Determination, Design, Development, and Diffusion.

The activities involved in the development and implementation of the PDC for this research occurred between 2000 and 2007. Nearly a thousand people have participated in some part of the activities throughout this period. The development team at the university consisted of a project director, producer, instructional design team coordinator, assistant design team coordinator (the researcher of this study), a video production crew, two audio engineers, a multimedia technologist group, graphic artists, and administrative staff. External partners and collaborating contributors to the development team included two child welfare associations from the U.S. and Canada, external evaluators, six state child welfare agencies, and an unmeasurable number of trainers, social workers, and foster parents from across the country. Additionally, over 300 actors and experienced experts were videotaped, and slightly under 500 participants were surveyed. Due to the complexity and size of activities, this research focused in on the key members of the central activities involving the development team. For example, all the video production activities are summed into one activity system that focuses on the inter-organizational aspect of the typical video production in this case study. Table 1 in Chapter 3 summarizes the
different key organizational subjects. To maintain confidentiality of the subjects, I acknowledge the subject by the organization and role within the organization. For instance, when I mention a content writer as a subject, I identify the writer as UNIV-Writer or STATE-Writer depending on which organization the writer was employed by. All capital letters are used to identify the organization to differentiate between a “state” versus a “STATE” organization.

Themes and Activity Systems

There were four major themes within the data. The Determination theme reflects on activities in determining the purpose and direction of the overall collaboration. The Design theme reveals activities in the look and feel of the end product from a pedagogical perspective, while the Development theme discloses activities involved in the creation and aesthetics perspective. The Diffusion theme reflects activities involved in the planning and dissemination of the product to the end users and organizations.

The central activity systems per theme are as follows (details are in appendices):

- **Determination**
  - Appendix N: Activity System #1, Buy-in
  - Appendix O: Activity System #2, Shared Vision
- **Design**
  - Appendix P: Activity System #3, Design
  - Appendix Q: Activity System #4, Screencoding
- **Development**
  - Appendix R: Activity System #5, Storyboards
  - Appendix S: Activity System #6, Development
  - Appendix T: Activity System #7, Video Production
- **Diffusion**
  - Appendix U: Activity System #8, Evaluation
  - Appendix V: Activity System #9, Implementation
  - Appendix W: Activity System #10, Marketing
The activity systems analyses in Appendix N through Appendix W break down the activities in the longitudinal study using activity theory-analysis. Additionally, a deeper and more descriptive narrative analysis of the design and development process is provided in Appendix X. The narrative analysis in Appendix X was my first step in understanding the processes. This chapter summarizes activities as they relate to the research questions.

Central Questions

The purpose of the longitudinal case study was to investigate the cultural influences of the inter-organizational collaboration into the development and implementation of an instructional technology project using an activity-theoretical lens. The research questions originally posed were:

1. How do inter-organizational and intra-organizational workplace culture shape the communication process during the collaborative transformation from design to development and development to implementation of an instructional product?
2. Based on the triangular structure of activity systems analysis, what tools and rules influence the development team's participation level during the design, development and implementation process?
3. In which ways did culture, resources, and the division of roles influence instructional product development in a large-scale, joint collaboration?
Table 17 identifies an outline of the determination theme and design theme findings. Table 18 identifies an outline of the determination theme findings. Table 19 identifies an outline of the diffusion theme findings.

Central Questions

The purpose of the longitudinal case study was to investigate the cultural influences of the inter-organizational collaboration into the development and implementation of an instructional technology project using an activity-theoretical lens. The research questions originally posed were:

4. How do inter-organizational and intra-organizational workplace culture shape the communication process during the collaborative transformation from design to development and development to implementation of an instructional product?

5. Based on the triangular structure of activity systems analysis, what tools and rules influence the development team's participation level during the design, development and implementation process?

6. In which ways did culture, resources, and the division of roles influence instructional product development in a large-scale, joint collaboration?
# Table 17

<table>
<thead>
<tr>
<th>Determination Theme</th>
<th>Activity System # 1</th>
<th>Activity System # 2</th>
<th>Activity System # 3</th>
<th>Activity System # 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Objective</td>
<td>Grant Proposal</td>
<td>Shared Vision</td>
<td>Design Instructional Technology</td>
<td>Communication Tool</td>
</tr>
<tr>
<td>Tools</td>
<td>Previous Grant</td>
<td>Meetings</td>
<td>Original Curriculum PRIDE Book</td>
<td>Video Method Script Module Outline</td>
</tr>
<tr>
<td></td>
<td>Contacts Problem</td>
<td>PowerPoint/Internet Facilities</td>
<td>Appointed Subject-Matter Experts</td>
<td></td>
</tr>
<tr>
<td>Subject # 1</td>
<td>UNIV-Dir</td>
<td>UNIV-Dir</td>
<td>UNIV-DesignCoor</td>
<td>UNIV-DesignCoor</td>
</tr>
<tr>
<td>Rules # 1</td>
<td>Grant Requirements</td>
<td>Grant Requirements</td>
<td>Grant Deadlines Media Workflow Existing Workload</td>
<td>Screen Sequences Animation Pace of production</td>
</tr>
<tr>
<td></td>
<td>UNIV-Policies</td>
<td>Time</td>
<td>Learning Curve</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Finances Department Capability</td>
<td>Electricity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Community Members # 1</td>
<td>UNIV-Liaison</td>
<td>UNIV-Administrators UNIV-Department Staff</td>
<td>Production Team Grant Administrators</td>
<td>Development Team Partners</td>
</tr>
<tr>
<td>Subject # 2</td>
<td>FIPSE PARTNER STATE-Agencies EVALUATOR</td>
<td>Designated SMEs from PARTNER and STATE-Agency</td>
<td>not applicable - 2-dimensional intra-organizational activity</td>
<td></td>
</tr>
<tr>
<td>Rules # 2</td>
<td>Industry Standards</td>
<td>State Regulations Time Financial</td>
<td>Designee Authorization Consensus Acceptance Existing Workload</td>
<td>not applicable - 2-dimensional intra-organizational activity</td>
</tr>
<tr>
<td>Division of Labor</td>
<td>Write Grant Gather Partners Advisors Provide Documentation</td>
<td>Administration Technical Aspects State Issues Evaluation</td>
<td>Design Team Coordinator Script Writer Subject-Matter Experts Note taker Reviewers Editors</td>
<td>Conceptualize Codes Attach codes to script Review and Edit Distribute to Team</td>
</tr>
<tr>
<td>Synergy</td>
<td>Expertise and Need</td>
<td>Learning</td>
<td>Team Design</td>
<td>not applicable - 2-dimensional intra-organizational activity</td>
</tr>
<tr>
<td>Contradictions</td>
<td>#1 - Rapid Changing Technology #2 - Partnership Requirements</td>
<td>#1 - State Regulations and Objectives</td>
<td># 1 - Existing Workload #2 - Cultural Norms and Practices</td>
<td>#1 - Interpretation of sequences</td>
</tr>
<tr>
<td>Tensions</td>
<td>#1 - Staff Readiness #2 - Trust #3 - Organizational Culture</td>
<td>#1 - Functioning Facilities #2 - Visualizing Concepts</td>
<td>#1 - In-class activities to media based #2 - Deadline</td>
<td>#1 - New method for sequences #2 - Understanding for non-media people</td>
</tr>
</tbody>
</table>
## Outline of Development Theme

<table>
<thead>
<tr>
<th>Development Theme</th>
<th>Activity System # 5</th>
<th>Activity System # 6</th>
<th>Activity System # 7</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Objective</strong></td>
<td>Communication Tool</td>
<td>Creation of Interactive Media</td>
<td>Scenarios Video Clips</td>
</tr>
<tr>
<td><strong>Tools</strong></td>
<td>Video Method</td>
<td>Software</td>
<td>Subject-Matter Expertise Video Production Equipment Script Talent Locations</td>
</tr>
<tr>
<td></td>
<td>Script</td>
<td>Hardware</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Design Team Coordinator</td>
<td>Meetings Script</td>
<td></td>
</tr>
<tr>
<td><strong>Subject # 1</strong></td>
<td>UNIV-ADesignCoor</td>
<td>UNIV-DesignCoor</td>
<td>UNIV-VideoDir</td>
</tr>
<tr>
<td><strong>Rules # 1</strong></td>
<td>Time</td>
<td>Software</td>
<td>University Structure Media Alliances Technical Capability</td>
</tr>
<tr>
<td></td>
<td>Technology Limits</td>
<td>Technology</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pace of production</td>
<td>Creativity</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Team Collaboration</td>
<td></td>
</tr>
<tr>
<td><strong>Community Members # 1</strong></td>
<td>UNIV-DesignCoor Development Team Student Workers</td>
<td>Multimedia Technologist Graphic Designers Programmers Video/Audio Crew</td>
<td>Production Team Content Team Talent Pool Talent Agencies</td>
</tr>
<tr>
<td><strong>Subject # 2</strong></td>
<td>not applicable - 2-dimensional intra-organizational activity</td>
<td>not applicable - 2-dimensional intra-organizational activity</td>
<td>PARTNER-PSME</td>
</tr>
<tr>
<td><strong>Community Members # 2</strong></td>
<td>not applicable - 2-dimensional intra-organizational activity</td>
<td>not applicable - 2-dimensional intra-organizational activity</td>
<td>PARTNER STATE-Agencies</td>
</tr>
<tr>
<td><strong>Division of Labor</strong></td>
<td>Design storyboard template Review Template Add data from script Screen capture images Import images in storyboard</td>
<td>Administration Multimedia Technologists Graphic Designers Programming Video/Audio Crew</td>
<td>Creative Aesthetics Authentic Verification</td>
</tr>
<tr>
<td><strong>Synergy</strong></td>
<td>not applicable - 2-dimensional intra-organizational activity</td>
<td>not applicable - 2-dimensional intra-organizational activity</td>
<td>Creative Authenticity</td>
</tr>
<tr>
<td><strong>Contradictions</strong></td>
<td>#1 - Lack of images #2 - Pace of Production</td>
<td>#1 - Learning Curve</td>
<td>#1 - Depletion of Resources #2 - Cultural Insight</td>
</tr>
<tr>
<td><strong>Tensions</strong></td>
<td>#1 - Workload priority #2 - Learning Curve</td>
<td>#1 - Personality Conflicts #2 - Staff Turnover</td>
<td>#1 - Appearance and tone #2 - Capturing concepts</td>
</tr>
<tr>
<td>Objective</td>
<td>Tools</td>
<td>Subject</td>
<td>Rules</td>
</tr>
<tr>
<td>-----------</td>
<td>-------</td>
<td>---------</td>
<td>-------</td>
</tr>
<tr>
<td>Evaluation</td>
<td>Evaluation System #8</td>
<td>UNIVERSITY</td>
<td>Grant Meeting Deadlines</td>
</tr>
<tr>
<td>Marketing</td>
<td>Evaluation System #10</td>
<td>UNIVERSITY</td>
<td>Decision Pace</td>
</tr>
</tbody>
</table>

Table 19

Outline of Diffusion Theme
The first two questions are broken down by activity and their respective contradictions and tensions. The last question then looks at the synergy within the activities as well as collectively for a holistic perspective of inter-organization collaboration within the PDC project. The first question will be discussed under the subheading Question 1: Communication, as this question focuses on the workplace cultural impacts of the communication processes. The second question will be listed under the subheading Question 2: Influences. The three-dimensional activity system used in this study helped to pull out any identified impact the activity incurred through the joining of the inter-organizations. Question 3 examines how the culture, resources, and the division of roles influence product development and any synergism or antagonism from the collaboration and is titled Question 3: Synergy.

**Question 1: Communication**

Before looking at the different themes and their methods of shaping the communication, it should be noted that some basic communications occurred among the inter-organizations. All the inter-organizational contributors lived at a distance from the UNIVERSITY, so phone calls and emails were common communication tools. Occasionally, the UNIVERSITY (development team) or the PARTNER would arrange to have conference calls in which multiple members from geographically diverse locations could discuss issues synchronously through a conference call. Activity System 3a revealed that emails and phone calls were not an efficient way to write the multimedia script because of delays in the responses, which concurs with other research (Lee & Panteli, 2011; Porcaro & Carrier, 2014; Slater & Ravid, 2010). The decision to move to marathon meetings (three consecutive, all-day meetings) with a designated content writing team helped to eliminate communication delays. Meetings were the most common form of
communication and they ranged from informal to formal. Table 20 outlines the general types of meetings.

Other broader areas of communication within the PDC project included conference presentations, the grant proposal, a screencode method (to identify specific screens), the storyboard (which is described below), standard mail (by the EVALUATOR and to ship out CDs or other documents), flyers, handouts, brochures, website, sample CDs and other marketing tools.

Table 20
Types of Meetings

<table>
<thead>
<tr>
<th>Meeting Type</th>
<th>Agency</th>
<th>Participants</th>
<th>Setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Spontaneous Meetings</td>
<td>Intra-organizational</td>
<td>One to three members of development team</td>
<td>Informal: spontaneous office or hallway meetings</td>
</tr>
<tr>
<td>2 Division Meetings</td>
<td>Intra-organizational</td>
<td>Sections of Development Team (i.e. graphics, video)</td>
<td>Informal: Likely meet in conference room</td>
</tr>
<tr>
<td>3 Development Meetings</td>
<td>Intra-organizational</td>
<td>Full Development Team</td>
<td>Semi-structured: conference room</td>
</tr>
<tr>
<td>4 Design Meetings</td>
<td>Intra/Inter-organizational</td>
<td>Content Design Team</td>
<td>Structured: UNIVERSITY conference room</td>
</tr>
<tr>
<td>5 Status Meetings</td>
<td>Intra/Inter-organizational</td>
<td>State Partners &amp; Lead UNIVERSITY members</td>
<td>Semi-Formal: Primarily conference calls – Part of their monthly P.R.I.D.E. meetings</td>
</tr>
<tr>
<td>6 Administrators Meetings</td>
<td>Inter-organizational</td>
<td>PARTNER and UNIVERSITY directors</td>
<td>Semi-Formal: Telephone calls</td>
</tr>
<tr>
<td>7 Grant Meetings</td>
<td>Inter-organizational</td>
<td>UNIV.Dir and Granting Agency</td>
<td>Very formal: reports, national presentations, and telephone meetings</td>
</tr>
</tbody>
</table>

The first question, however, looks deeper into the workplace culture and communication during transformation: How do inter-organizational and intra-organizational workplace cultures
shape the communication process on collaborative transformation from design to development and development to implementation of an instructional product? In this question, I sorted the Design to Development phases by first examining the activities in the Determination and Design themes. The Determination and Design themes provided the communication tools for the development process and, thus, provided insight into the first portion of the question regarding how the workplace culture shaped the design to development communication process.

**Design to Development**

The first portion of the first question asks about the impact of workplace culture on the communication process between the design and development processes of the PDC project. To answer this question, I gathered information from the activity systems under the Determination and Design themes. During these two themes, the communication tools were established to bring the project into the development stage. In this section, I focused separately on the workplace culture and the communication process among the inter-organizations (UNIVERSITY, PARTNER, STATE-Agencies, and EVALUATOR) and then the intra-organization (UNIVERSITY). The intra-organization was the development team at the UNIVERSITY.

**Inter-Organizational.** When deciding on how to answer this question, I utilized the contradictions and tensions from each activity system that pertained to workplace culture and communication. For the inter-organizational workplace culture, I pulled out the contradictions and tensions related to the communication among the organizations: how they encountered the contradictions and tensions and then how they resolved the contradictions and tensions to define
the workplace culture, along with the tools, rules and norms of the organizations. Below is a summary of the contradictions and tensions in these activities:

- Buy-in: Organizational Culture, Trust, Rapid Changing Technology
- Shared Vision: State Regulations and Objectives, Visualizing Concepts
- Design: Consensus, Existing Roles, Cultural Norms and Practices, In-class Activities to Media-based, Personality Conflicts
- Script: Icons, Font Styles,
- Screncoding: Understanding for Non-media People

The organizations involved in the development of the PDC were non-profit organizations (except for the EVALUATOR). The organizational cultures reflected a strong sense of volunteerism and contribution to society. This project was perceived by all the participants as having a moral value due to the perception that, in some way, the training would improve the lives of foster children. But there were trust concerns from the beginning of the collaboration among the inter-organizations. This perception shaped the communication process. The UNIVERSITY felt that the inter-organizations, particularly the PARTNER, were uncertain that the distance media training would work for the child welfare field and, to some extent, the university could handle the sensitivity of the topics in a visual media format. This uncertainty influenced how the UNIVERSITY communicated in the Determination and Design themes. Issues that should have been addressed early, such as copyright and marketing strategies, were not confronted and communicated because, as the UNIV-Dir explained, the UNIVERSITY felt a need to gain the trust of the partners. The UNIV-Dir explained:

You have to establish trust. In our case it was hard to... focus on the logistics and the terms of the hand-offs between the different parties and those roles and responsibilities if they can work kind of independently and, you know, collaborate. Certainly you want to make all that stuff very clear. There were some things that we didn’t make as clear as we should have. Some of that was intentional and I still kind of, some of that still haunts us. We still struggle with it. And I mean if you talk to any lawyer, he’ll say get everything in writing, you know. I didn’t do that on a lot of things. The reasoning was at the time, and I would partly defend it, but also I would do it a little differently. If you’re, if it depends,
as this one did I think, success on building relationships and trust, you know, the first thing you don’t do is whip out, you know, is bring in the lawyers. You’ve got to build relationships and sort of fall in love with each other and say we’re going to do this. Um, and then, but you also have to work out those other logistical things and, particularly when you get to a point if it’s something you’re going to disseminate, there’s income involved, you know, if you’ve got grant money coming in and you’re giving out money, then, of course, everyone’s happy. At some point you have a product and then you want to start recouping some of that money then you should have things in place to say where the hell that’s going to go and whose going to own all that. We didn’t work all those things out in as much specificity as we should. (personal interview with UNIV-Dir)

The grant had required in-kind matching of funds that were provided by the university. So the UNIV-Dir explained that part of the grant money was provided to the PARTNER and STATE-Agencies for their contribution to the collaboration, but there was well over a million dollars of upfront in-kind funding provided by the UNIVERSITY with the intent that the product would produce income to continue supporting educational technology development within the department. At the point of data collection, the UNIVERSITY had not recouped the initial in-kind investment. The non-profit agencies were not looking to make a profit, but the non-profit agencies did require income to sustain their departments and roles. The grant money provided funds and, thus, was an immediate incentive to collaborate. However, as the grant funds diminished, the question of future monies revealed some of the problems that occurred as an effect of the avoidance in the communication regarding long term decisions and trust. The UNIV-Dir went on to explain:

There were a number of decisions, you know, that where we sacrificed security of things like copyrights or copy protections or control. You know, a lot of issues that people do legal agreements on for the sake of building a partnership and focusing instead on establishing trust… I saw as one of the big challenges that were really important was if you really do achieve economies of scale you need to make a successful partnership. And I don’t know how you build a successful partnership that doesn’t establish a high level of trust. Yes, you do one around greed, I suppose, or around mutual, but this wasn’t about trying to make money. This was about providing service. This was about, you know, improving the lives of children and families. This was not a commercial enterprise in that sense. So, and I think it was very difficult. The distribution issues were not the big partnership issues. I mean we faced huge struggles working out how to work
together, to put this in a media form. There was a huge amount of suspicion of that. (personal interview with UNIV-Dir)

Perhaps the emphasis in the early phases of communication focused too much on gaining trust. Participants from the UNIVERSITY’s development team used the word trust, but issues were also referred to as micro-management, which the data revealed could well have been cultural differences in the styles of the inter-organizations. The perception that there were trust issues, however, did exist. The development team predominantly felt concern for trust in the transformation of the P.R.I.D.E. training to a multimedia training. The UNIV-Dir stated:

There were issues of trust building between partners, particularly that we [UNIVERSITY’s development team], whether or not we could be trusted to maintain the integrity of the curriculum in that experience as we moved it into media. That was largely a matter of, you know, getting experience and waiting for us by doing it and seeing results. There was a sort of an unwritten rule that things that were being done in PRIDE would be approved by all of the original member states. And we had to kind of pare that down. We were kind of sort of an executive committee here, you know, an elite group who could be trusted to ensure that the integrity of the curriculum was there without having this whole group try to rule on everything. I mean that was kind of something that was in the culture of the [child welfare] group informally that we had to. alter (personal interview with UNIV-Dir)

As the project was inter-organizational, there were multiple players who had a vested interest in their own agenda, which brought concerns to various state regulations and a unified objective. Each state had its own set of state regulations and policies. The Shared Vision meeting in Activity 2 reflected an effective method for coming to consensus on some issues in defining a unified project that would work for the various states.

The workplace culture of the child welfare organizations valued a consensus design and input through communicating and making decisions as a group. However, the original consensus design of the multimedia (Activity 3a) did not work in the media design process. There was a workplace cultural difference between the PARTNER and the STATE-Agencies involved in the child welfare field and the UNIVERSITY’s creative development team. The UNIV-Writer
stated, “Let's say I sent [a draft script] to them in January. Silence for weeks. Then you would write them an email, have you looked at the first draft, do you have any changes? We thought that would work and a way of doing this, it was the worst thing, it can't work” (Personal interview with UNIV-Writer). The different inter-organizations would consult on each change internally. There were too many voices in the process and this slowed down the process. UNIV-Writer explained this challenge: “We were checking with too many different people who did not understand the technology and each person had a little piece of the puzzle but there weren't enough people who were seeing the whole picture so the decisions were slowed down” (Personal interview with UNIV-Writer). Eventually the script would come back to UNIV-Writer with 12 different versions. Everyone would then become confused at which was the latest script. So the design team decided about a year into the project that the process was taking too long and the group could not possibly make the grant deadlines with this method of collaboration.

PARTNER-PSME explained how he perceived the delay:

[PARTNER-ISME] and her consultant they were really, really involved to a point where it was almost challenging to get certain things done. Because they would have a lot of questions, they wanted to ensure that all the other states had feedback and I thought we were doing that or whatever but it just, I don’t know, the process got bogged down because my perspective was there seemed to be, I perceived, that maybe there was [PARTNER-ISME] or whoever it was, [PARTNER-ISME] maybe, wanted more authority in terms of making decision about content. (Personal interview with PARTNER-PSME)

UNIV-DesignCoor concurred in his perspective: “The [PARTNER]… really tried to insert themselves very strongly in the creative process. It slowed everything down” (Personal interview with UNIV-DesignCoor). In other words, the process of media development conflicted with the child welfare’s process of gaining input from multiple sources due to the delay in communication. There were also other issues occurring during this time, such as the change in
the structure of state partner organization, budget cuts, and loss of key personnel, which influenced state involvement. So while UNIV-DesignCoor and PARTNER-PSME spoke of too much involvement on the creative aspect from the PARTNER, the UNIV-Dir spoke about the intensity of engagement:

I think as much as we were concerned at the outset about the enormous sort of technology challenges and just the whole how to create this thing, creative challenge, the communication and partnership building was a major issue, the loss of key people here, the sort of change in the structure of the [STATE-Agency] contract and made it difficult for us to maintain the level of engagement that we had envisioned with [STATE-Agency]. It wasn’t hostile or, you know, even so much lack of interest, but I think they had probably had funding cuts and things and so spending time on developing this was not, you know, you’re always putting out fires sometimes in these agencies, and it’s hard. So we struggled a bit with that. I mean, they were always there, but you know, the intensity of engagement was less than we envisioned. (Personal interview with UNIV-Dir)

Finding the right level of engagement from the partners forced the content design team to reconsider their method of designing the script The UNIV-Writer addressed that problem by explaining, “I did a timeline to show them, if we take six months to do it, we will never make the deadline for years. Cause you've got nine of these [training modules]” (personal interview with UNIV-Writer).

The design and writing of the first script was greatly hindered due to the communication process of emails and delayed responses, multiple individuals from the various inter-organizations involved in reviewing the script and the numerous revisions after each organization sent in their feedback. All of the inter-organizational members had roles within their organization in addition to volunteering to participate in the PDC development, and those roles took precedence over the time they could spend reviewing and returning feedback.

We wanted, as much as we can, just like we did throughout the development of the original P.R.I.D.E. Model of Practice, is to engage as many collaborators as possible.
Well, when you do that you risk that you’re not going to meet the time frames that you want because all these collaborators, this is [just] one thing for them. They are not being evaluated in their jobs on whether or not they are giving feedback to [UNIVERSITY]. They are being evaluated on whether or not they are developing a budget or meeting with kids or serving successfully in family court. So that comes with every initiative I’ve been involved in. I mean, you want to get great collaboration but you have to appreciate what other people have, other things they have to do in order to get paid for what they are doing. (Personal interview with PARTNER-PSME)

It’s clear from PARTNER-PSME’s statements throughout the interview that he understood and respected the cultural environment of these state agencies. Their rules and needs were different from the UNIVERSITY, which was focused on deadlines. The staff at the UNIVERSITY did work on other projects but a good portion of their jobs were directly dedicated to their involvement in the PDC. The UNIVERSITY staff was held accountable for the completion of the PDC related tasks. This communication method, seen in Activity 3a, needed to be changed. The UNIVERSITY, PARTNER, and STATE Agencies sought a solution.

PARTNER-PSME stated that he made a suggestion:

And I said, look at it, we need to do something here. The process is whether there’s a lack of trust or micro-management. Or what? We’re getting bogged down here. And I would like to take over all responsibilities here because I just felt like I had a connection with that design team [the UNIVERSITY]. And we were doing some really good stuff together. And [the PARTNER-Dir] approved of that and I think once that happened we were then able to move along a lot faster. (Personal interview with PARTNER-PSME)

PARTNER-PSME helped solve a conflict by working alongside the UNIVERSITY. While PARTNER-PSME asked PARTNER-DIR for permission to work as the principal subject-matter expert (SME) on this project with the UNIVERSITY, it was a mutual decision with the UNIVERSITY to switch PARTNER-ISME (initial subject-matter expert) to PARTNER-PSME (primary subject-matter expert). Through the various comments made by the interview participants, PARTNER-PSME appeared to be more adaptive to the workplace culture of the
development team (UNIVERSITY). The data also showed a respect between the UNIVERSITY development team and PARTNER-PSME in understanding of the roles and role boundaries.

The role boundaries were one of the tensions related to personality conflicts in the initial design process as PARTNER-ISME and UNIVERSITY-DesignCoor were leaders with different cultural perspectives on how to lead. This workplace culture may not have stemmed from the current workplace but from previous workplaces. PARTNER-ISME and PARTNER-PSME both shared the same workplace culture, but their past work experience should also be noted. PARTNER-ISME had previously been in charge of an entire state child welfare agency. On the other hand, PARTNER-PSME had spent a great deal of time traveling all over the world as a trainer to the trainer. He had a unique expertise in being a people person, one who could fit into a crowd of strangers. The PARTNER-Dir described the two PARTNER subject-matter experts:

UNIVERISTY staff preferred working with [PARTNER-PSME] because he was more fun, he was more animated. He was also very sharp, he was also a very skilled trainer. [PARTNER-ISME] is not a trainer. [PARTNER-ISME] is more of a curriculum writer and thinker but [PARTNER-PSME] was a dynamic trainer who had charisma and people knew him all over the country. (Personal interview with UNIV-Dir)

Activity theory acknowledges that all activity follows previous activity. Therefore, the different personalities of the two subject-matter experts from the same organization may very well have been influenced not by the current workplace culture of the PARTNER, but by their previous workplace cultures.

To solve the inter-organizational communication process, a new and smaller design team was created. The principal team consisted of a couple members from the local child welfare STATE-Agency, the PARTNER-PSME, and two members of the UNIVERISTY. Additionally, the communication process was changed from email to what they called “marathon meetings” in which the designated content writing team would meet for three consecutive days to complete a
near finished script. Findings in the new communication method of marathon meetings reduced the script writing process to approximately 1/12 the time allocated for the first script.

Another culturally influenced communication process that occurred among the inter-organizational design team had to do with the terminology and interpretation of multimedia. This was classified in the activity as the cultural norms and practices. The UNIV-Writer explained one example of how the inter-organizations interpreted terms differently:

So [UNIV-DesignCoor] is talking about the game [digitally programmed activity] and you do this and I think at that time [PARTNER-ISME] or someone from [PARTNER organization] was in that particular meeting. And they stopped the meeting, called the game, *this is not funny material.* We even *can’t just make laugh and fun of this.* Period. *This was very important material.* I guess this is about returning a child home and they got very serious. Me and [UNIV-DesignCoor] were like oh! Cool, game what do you mean [UNIV-DesignCoor]? So we are like into it and you’re learning to work with partners and their sensitivities and we are creative. They were about this is serious content, this is not funny. Game denoted funny and humorous and light to them. So we had to explain you can give serious content in a way that’s more casual and it’s still be learned. We wouldn’t have a game about sexual abuse but this was about terminology. How do you get that person to understand the basic terminology of this particular topic and it was something about visitation I think it was. I don’t think it was that deep. So I don’t mean game, what I mean is interactive, that’s when we start changing our terminology. If we were talking about a game in our heads we didn’t call it a game. We said we’re going to do it - a click on interactive, that it helps a person learn the terminology they would retain it better if it was more interactive. So we have to learn to speak in a different language that was sensitive to the severity or the importance of the content, which was not our training because we’re media people and everything that’s cool. But that was a funny movement. We did do the “game” but it was interactive. So we start using multimedia terminology that we researched, click on interactive, a drag and drop, we have to start using those terminologies correctly, so that was interesting moment. (Personal interview with UNIV-Writer)

To accommodate the differences in the cultural interpretations of the multimedia components, the UNIVERSITY development team adapted terminology and language mutually acceptable of all the inter-organizations. There was also a workplace cultural challenge in transitioning the original, face-to-face training into a media-based training. The UNIVERSITY development team needed to learn the culture and practices of the child welfare agencies to
comprehend concepts and creatively communicate in a visual and media based format. This awareness was advanced through the communication practices of inquiry in the design and collaboration in writing the script.

The last piece of the inter-organizational communication process from Design to Development was the actual script developed during the design process. The content writing team created the multimedia script but there still needed to be a way to reference each screen in the training. In video production, each frame in the video represented 1/30 of a second and was referenced as timecode. However, while video is linear, multimedia is not linear but can branch off in different directions. Additionally, screen time cannot be measured like video since one still frame in a video is, by its nature, measureable, whereas a screen in multimedia training would last longer than a second depending on the interactivity or time it takes to read the screen. The screencoding method, derived from the UNIVERSITY’S past workplace culture of video and timecode, helped guide the UNIVERSITY development team to label each screen in a simple alpha-numeric method that could be understood by both media and non-media people. The workplace culture of the UNIVERSITY’s video department branched off to a new communication system as they evolved into a multimedia development department. This alpha-numeric screencode served not only as a communication method to identify specific sections of the training but also as a naming system for the multiple files and objects created for the training. The script, with the screencodes, was the communication method utilized to inform the development team.

Intra-organizational. When examining the intra-organizational workplace culture and communication from Design to Development, I again pulled out the contradictions and tensions from each activity system in the Determination and Design themes as they related to the
communication within the UNIVERSITY. Below is a summary of the related contradictions and
tensions in these activities.

- Buy-in: Rapid Changing Technology, Staff Readiness, Partnership Requirements,
- Shared Vision: Functioning Facilities
- Design: Designated Roles, Cultural Norms and Practices, In-class Activities to
  Media-based
- Script: Icons, Font Styles

At the very beginning when the UNIV-Dir received approval for the grant and needed to
make a decision as to whether to accept the grant, the UNIV-Dir called a meeting to
communicate the potential project with the UNIVERSITY’s creative development team. The
communication used in Activity 1, Buy-in, for the intra-organizational was this department
meeting. Along with the setting of the communication, the UNIV-Dir also strategically chose
the method of verbal communication through respect for a group decision. He explained the
grant and project as well as how challenging it would be and the length of the project and let the
members of the department decide if this was something they wanted to spend the next several
years working on. Prior to the department meeting, he had a private meeting with the UNIV-
DesignCoor (who would be in charge of the project) and the UNIV-Writer to first make sure he
had their support, as they were viewed as upper level employees in the department. There were
several issues to consider: the rapid changing technology, the partnership requirements, and
whether the staff was ready for this venture into multimedia development. At the time, the
department was involved in video production and graphics. The partnership required that the
intra-organizational members agree to work with new people outside of the department and there
was still great uncertainty about what it would require of the department members’ skills and the
development of new skills and technologies as the technology was changing so rapidly the
UNIV-Dir did not have all the answers to some elements that, at the onsite of the project, could
only be presumptions. But the UNIV-Dir handled the intra-organizational communication through open discussions and ownership of the decision within the team.

In the beginning of the development, the storyboards served as the communication tool for the development team, in addition to the script, acknowledging which team members would work on the various screens and what work needed to be done. A challenge to the multimedia script was that the visual image of the screen, which would be found in video storyboards, was not practical for a multimedia storyboard prior to the creation of the screen. It did not make sense to have a graphic artist create a sample of what the screen would look like, as this would take away time from the schedule to actually create the screen. In other words, by the time the sample screen is created, they would already have, in essence, created the screen. So to accommodate the lack of visuals, a written description of the screen was placed on the storyboard. This written description came from the script with additional commentary from the UNIV-DesignCoor.

During the shared vision activity (Activity 2) when the intra-organization gathered all the inter-organizational partners and agencies at the meeting, all of the staff in the UNIVERSITY department was invited to be part of this communication process (mentioned above in the inter-organizational section) along with the dean and president of the UNIVERSITY. Some of the members from the UNIVERSITY (Dir, DesignCoor, Writer, and VideoDir) were given roles to help lead the two-day inter-organizational meetings.

The intra-organizational communication processes during the design process overlapped with the inter-organizational communication mentioned above. There was tension building within the UNIVERSITY due to the delays in the consensus process practiced by the inter-organizations and mentioned in Activity 3a. However, UNIV-Writer explained that the lapse of
deadlines in the early part of the project was also due to the university’s environment and academic culture. She stated that the university’s sense of deadlines and movement is a little more relaxed than corporate. She said in an interview, “I think we lost a year because of our culture. And also because of the culture of the other agencies, which are also state agencies. It’s different the way things operate. Their need is different, there was approval, you can’t just do something, it’s got to go through a lot of red tape” (Personal interview with UNIV-Writer). So while much of the early delays in the project were attributed to the consensus policy of the child welfare culture, the UNIV-Writer acknowledge that the UNIVERSITY workplace culture also contributed to a more laid-back approach to deadlines during the early stages.

In addition to the challenges of dealing with the inter-organizational delays, the intra-organization (UNIVERSITY) was dealing with the rapid changing technology and defining the process, goals, and objectives in a new and unpredictable field of multimedia. The UNIVERSITY used its past workplace culture of video production to set methods of communication. Steps were taken in the communication process to use visuals to explain concepts. The UNIV-Writer learned through the process to use set icons and particular font styles to help the communication process. The communication needed to be clear for both the intra-organization’s staff members and the non-media inter-organizational members. The previous workplace culture of the department experienced in video production carried over to the new media department culture. These findings again related to the activity theory perspective that activities precede and evolve into new activities.

**Summary of Design to Development communication.** Overall, the study found the inter-organizational and intra-organizational workplace cultures shaped the communication process on collaborative transformation from Design to Development in four distinct ways. First, the
organizations shared a value system that distinguished this project as a worthy project for society and foster children. The grant enabled the partnership to join together to reach individual organizational goals. Second, the organizations brought into the partnership previous workplace culture experiences, some of which hindered the progress. The skepticism and trust issues regarding the transformation to the new multimedia format training influenced the communication process during the Determination and Design themes. Personalities and micromanagement traits appeared to be connected to past workplace experience and culture. Third, the activity systems in the design process revealed that the workplace culture of the inter-organizations compared to the intra-organization posed a challenge in the multimedia development as it related to processes and leadership. The organizations were non-profit and shared some similarities, but their structure and methods for decision making differed to the point they were not compatible with the structure and methods needed for multimedia design. Finally, an examination of all the activities revealed that the greatest inter-organizational collaboration was during the design activity. This activity is where the communication process of the different workplace cultures needed to make the most adjustments to understand the other organizations. The UNIVERSITY needed to learn about the child welfare industry, the child welfare partners were hesitant to trust the UNIVERSITY in the transformation of the training content due to the UNIVERSITY being an external partner to the field, and adjustments such as terminology and language needed to be adapted. As the group learned to overcome the challenges during this stage, the scripts designed by the inter-organizational collaboration served as the communication method to the development team.
Development to Implementation

After examining the Design to Development communication process, I further sorted the contradictions and tensions of the activities in the Development and Diffusion themes by inter-organizational and intra-organizational categories to examine if any workplace cultural issues impacted the communication process from Development to Implementation. There was less communication between the inter-organizations (PARTNER, STATE-Agencies, and EVALUATOR) and intra-organization (UNIVERSITY) during the Development Theme activities. Any questions by the development team pertaining to the script went through the communication channels of the UNIV-DesignCoor or UNIV-Writer, who would consult with the inter-organizational partners if needed. The inter-organizational partners primarily served as supporters of the development in the sense that they would help locate experienced foster parents for recording the Speaking from Experience video shoots and occasionally arrange for locations to record them. Some of the inter-organizational members also reviewed content once it was developed. There was, however, one inter-organizational member who remained active during the development and diffusion process. PARTNER-PSME was the main consultant and link between the development team and the inter-organizations throughout the Development to Diffusion themes.

Inter-organizational. Below are the contradictions and tensions of the activities in the Development and Diffusion themes as they were interpreted for inter-organizational communication processes and workplace culture.

- Development: Learning Curve
- Video Production: Depletion of Resources, Cultural Insight, Appearance and Tone
The inter-organizations and intra-organization involved in the PDC project were all new to the multimedia training idea. The intra-organization (UNIVERSITY) had previous experience in video production but not in multimedia. The only inter-organizational member who was not entering the multimedia project without past related experience was the EVALUATOR. The other inter-organizational partners (PARTNER, STATE-Agencies) were experienced in training and on the content in the P.R.I.D.E. model of practice, but they were not experienced in transferring the content to the digital version. As such, the workplace cultures of the inter-organizations, along with the intra-organization, were involved in a learning process and the necessary learning curve (time) it would take to understand the process.

During the video production process, PARTNER-PSME attended the video shoots to provide feedback and advice on the authenticity of the videos from the child welfare industry perspective. In Activity 7, Video Production, there was a necessity to have an inter-organizational member present at the video shoots to avoid capturing video that would be unacceptable to the child welfare agencies, such as a case worker wearing jeans. The workplace culture of the child welfare industry may have unique cultural norms and practices that the video director would not be familiar with since the video director had not worked in the child welfare field. Having PARTNER-PSME present at the video shoots served as an instant feedback method to ensure the workplace culture of the child welfare industry was being captured properly for situations such as visuals, settings, appearance of talent and tone of their voice. A delayed
feedback system in the early process of the project development revealed a financial disadvantage due to the need to re-shoot a video and rehire talent. Providing instant feedback on workplace culture during the video recording reduced such re-shoots.

The Evaluation Activity (Activity 8) was an informative process to identify the foster parents’ readiness for the distance training once the implementation stage was reached. Activity 8 occurred in the early stages of development. The EVALUATOR’S feedback to the UNIVERSITY was also helpful in suggesting development considerations, such as embedding self-assessments within the training. The EVALUATOR was the central subject leading the inter-organization and intra-organization communication process in Activity 8. The EVALUATOR became involved in the project at the onset of the grant and initiated the discussions of how to assess the PDC during Activity 2, Shared Vision. The EVALUATOR also worked with the STATE-Eval (STATE-Agency sponsoring the evaluation) and closely with the UNIV-Dir, UNIV-DesignCoor, and PARTNER-ISME. Much of the communication between the inter-organizations for Activity 8 was conducted through emails and phone calls. The EVALUATOR did encounter similar workplace culture issues to Activity 3, Design, in that there was a delay in communication from the STATE-Agencies that impacted the flow and timeline of the evaluation. The delay created a delay in the first module burned to disk for the EVALUATOR to assess. One finding noted regarding the workplace culture of the evaluation process was that the inter-organizations respected the research. This helped to reduce trust issues on the transferring of the original P.R.I.D.E. training to the PDC digital version.

Activity System 9, Implementation, involved the Stage 1 study after all the modules were completed. The licensing contract between the ASSOCIATION and the UNIVERSITY served as the mutual written agreement to conduct research on the implementation throughout the
ASSOCIATION agencies. PARTNER-PSME joined the group as a consultant. The five-member research committee (including the researcher of this study) collaborated on the study from three geographically dispersed locations, using conference calls and emails to work together for most of the study. They also conducted a meeting at the ASSOCIATION’S office to review the results with some of the 25 participating agencies connected to the ASSOCIATION who had volunteered to participate. As mentioned in the Determination and Design themes, volunteerism of the United States’ child welfare agencies was part of their workplace culture. This workplace culture was also noticed outside of the country in the ASSOCIATION’s country. The ASSOCIATION’s agencies reflected on the short duration of the study both caused a management challenge but was beneficial in motivating participants. Another finding in the research was the motivation to participate in the study due to a laptop raffle. Agency leads (local representatives for the study) mentioned that the participants viewed this with excitement. This may have been a form of workplace culture motivation worth noting in the child welfare industry to encourage participation in such studies.

The ASSOC-Trainer explained how their workplace culture was quite diverse and that this would cause a problem for digital training as it would not serve all their needs. She stated:

Well it doesn’t address first nations. It doesn’t address our French language. It doesn’t address the pluralistic society that we live in. And we have a very multi-cultural approach and our legislation. Our culture is not a melting pot but it is very much respecting that diversity and culture and supporting those unique areas of culture to flourish. So working with such a broad range of cultures is our challenge in using a digital curriculum. So if we really wanted to reach out to the Hindu community, we would have to hire, or the agencies would have to hire, a staff person or contract someone to deliver the traditional classroom training. They really would benefit from the digital. (Personal interview with ASSOC-Trainer)

The agencies also encountered problems when attempting to view the CD training and their computer was not updated with the latest QuickTime software. Updating or installing the
QuickTime software on agency computers was restricted to the Information Technology (IT) Department. The participants then had to wait until IT could install QuickTime. This is related to workplace culture because employees needed IT approval for updates to perform the training.

The last issue of workplace culture that impacted the implementation and Stage 1 study dealt with customs and postage delays. The UNIV-DesignCoor solved the problem independently by physically loading and driving the boxes of CDs to the ASSOCIATION’s headquarters in the neighboring country.

Around the time of the implementation and Stage 1 study, there was a change in the inter-organizational collaboration. Activity System 10, on marketing, reflected the breakdown of the relationship between the UNIVERSITY and PARTNER. The PARTNER encountered major budget cuts. The PARTNER-Dir explained the influence of the budget cuts:

I think is a big factor throughout this period. [PARTNER] was going through a major financial crises and still continues to be. The fact that I’m here talking to you, saying that I’m unemployed and that [PARTNER-PSME] is unemployed and that [PARTNER-ISME] is unemployed has all to do with the fact [PARTNER] could not generate revenue. The industry itself was hurting and to the degree the industry hurt, so did the association. (Personal interview with PARTNER-Dir)

However, a greater problem arose once the development team had completed the development of the training CDs. The UNIVERSITY heard the copyright for the original, face-to-face training had possibly been transferred from the STATE-Agency to the PARTNER a couple years earlier. I asked the PARTNER-Dir if the UNIVERSITY had been informed, but he was not aware of any communication regarding the possible transfer of copyright as his superior at the PARTNER organization was the person handling the discussions with the original copyright owner. It was always assumed by the UNIVERSITY, and my research on the topic
acknowledged, that the copyright ownership was through the local STATE-Agency (Herczog, Van Pagée, & Pasztor, 2001). The PARTNER-Dir stated:

Historically, it might have been. In fact, I think it was. But because the [STATE-Agency] leadership was changing there, it was felt that in order to assure that the PRIDE curriculum continued, the director of [STATE-Agency] agreed to pass the copyright over to [PARTNER] because [PARTNER] had, in fact, been the caregiver for PRIDE and had the ownership of the curriculum. So to my knowledge, [PARTNER] primarily because it had been the publisher and printer. So when another model needed to be developed, maybe like dealing with sexual harassment issues, somebody has to continue that development process and that’s where [PARTNER] was well-positioned to do that. (Personal interview with PARTNER-Dir)

It is not certain whether it was a workplace cultural practice for the PARTNER not to inform its current partner of the PDC, the UNIVERSITY, or if it was just a miscommunication in which someone from the PARTNER organization assumed someone else from the organization was in charge of that communication. Either way, the UNIVERSITY, who had struggled to gain the trust of the PARTNER in the early stages, began to question its own trust in the partnership. The change in the ownership did not directly impact the collective ownership of the PDC product, but it did influence the trust of the organizations and possibly any products derived from the PDC project.

There were also more notable workplace cultural differences in the perspective of the distribution for the PARTNER and UNIVERSITY. The PARTNER organization was a publisher and printer, as the PARTNER-Dir stated. Its form of sales, as noted from the products on its website, was primarily sold as individual products, whereas the workplace culture of the UNIVERSITY, with its past in television and broadcasting, used annual (or other set time limit) licensing agreements. This difference in distribution method took the partnership in separate directions. The disagreement in method, along with the budget cuts, copyright related trust issues, and changing staff in the PARTNER organization ended the relationship and halted any
communication between the PARTNER and the UNIVERSITY. Currently (2015), the PARTNER’s website only contains information about the original P.R.I.D.E training materials and not does not appear to market the products created through this study’s project.

The PARTNER originally joined the project as the key national player with connections to all the state child welfare agencies and the central non-government advocate for child welfare. It was intended that once the UNIV-staff completed the development of the product, the PARTNER would take charge of the marketing. Dissolution of the partnership left the UNIVERSITY to market the PDC to the state child welfare agencies. Some of the challenges the UNIV-Marketing staff member faced while marketing in Activity 10 were STATE-Agency staff changes, which took the UNIV-Marketing member back to step one of introducing herself and the PDC to new staff. The inter-organizational communication broadened in one aspect during the marketing activity. Originally there were six STATE-Agencies who agreed to join the grant as supporters. Once the UNIVERSITY became involved in the marketing of the PDC, it used its connections with the original STATE-Agencies and developed new relationships with other state child welfare agencies, as they marketed the PDC directly to the agencies instead of through the PARTNER.

In summary, the workplace culture of the inter-organizations influenced the communication process from the development to the diffusion themes through adaptive time schedules and by utilizing community connections, trust, contractual agreements, and independent separation. The development and evaluation incurred some delays due to the inter-organizational learning process of multimedia development. This new process for the inter-organizations required some time to learn. The inter-organizational implementation process was, on the other hand, much faster in some aspects, as the time schedules were kept stricter for
agency participation. The workplace culture of the inter-organizations valued community involvement and utilized community members to help overcome talent depletion, provide research participants, offer feedback, and establish network marketing possibilities. In the development stage, the collaboration of the inter-organizations was helpful for providing cultural insight and authenticity to the videos. The workplace culture of all the inter-organizations valued volunteerism and community service. However, there were trust issues early in the collaboration that seemed to decrease during the development stage and then rise again after the product was completed and ready for implementation. In the beginning, the development team felt it had to work hard at gaining the trust of the inter-organizations. The UNIVERSITY avoided legalities of the partnership in an attempt to concentrate on gaining trust. But in the end, it was the UNIVERSITY who appeared to eventually lose trust in the PARTNER because of issues such as copyright disputes and distribution methods, which were not addressed in the contractual agreement for the objectives of the project. The UNIVERSITY became more comfortable including specifics through written contracts, such as the research agreement with the ASSOCIATION, by the end of the collaboration. The ASSOCIATION also valued volunteerism and the benefits of the research, so the contractual negotiations appear to be easier the second time around. Conflicts with the PARTNER and the workplace culture of budget cuts, however, did influence the communication with the UNIVERSITY, and the PARTNER and UNIVERSITY ended up going their separate ways, ending that portion of the inter-organizational collaboration.

Intra-organizational. To examine how the intra-organizational workplace culture shaped communication within the UNIVERSITY’s development team, I pulled out the contradictions and tensions related to the UNIVERSITY and internal communication.
• Storyboard: Lack of Images, Learning Curve, Pace of Production, Workload Priority
• Development: Learning Curve, Personality Conflicts, Staff Turnover
• Video Production: Depletion of Resources, Capturing Concepts
• Evaluation: Granting Agencies Approval, Research Development Time, Final CD Submission
• Implementation: Postage Delivery Delay, Research and Development Time
• Marketing: Decision Pace

Activity System 6 discussed the creation and use of the storyboard within the intra-organization. The storyboards were not shared with the external inter-organizations and were predominantly used by the development team as an outline of each screen. The storyboards contained the pertinent information relevant to each screen, such as an image and what type of objects were in the screen. Objects were interactions, videos, audios, animations or special graphics. The UNIV-DesignCoor explained that the storyboards were an internal communication tool for the development team because he felt sharing the storyboards could cause more confusion for the non-media partners. The confusion needed to be avoided because it could cause a delay in the development process. He stated:

As you get lower and lower into the process, it’s harder and harder to define things for somebody who is not a visual audience. So to try to take something that is not fully finished and just in a script form and narratively say what’s going to happen, for the most part, people who aren’t visual will have a really hard time understanding that. (Personal interview with UNIV-DesignCoor)

Mentioned in the Activity System 6 analysis, the concept of the storyboards originally came from the UNIVERSITY’s previous workplace culture with video production. There were a few challenges: the development team did not have a sample of a storyboard specifically for multimedia. In 2001, the multimedia process was fairly new and not well documented in the literature. The UNIV-DesignCoor and UNIV-ADesignCoor worked together to create a storyboard that would depict what would be on each screen. The UNIV-DesignCoor led the development of the PDC and selected which items to add to the storyboard, and the UNIV-
ADesignCoor took his requirements and converted it to a single page storyboard for each screen. Each session of the modules (CDs) was printed into separate binders. The storyboards helped the development team during what could be called the learning curve time when they needed more information to clearly understand their tasks. After the first couple scripts were created, the development team members relied less on the storyboards because they had become more familiar with the expectations of different screen types and learned more about the design and interpretation of the script. Screens were given titles and classified by their nature such as narration screen, scenario screen, graphic list screen, and interactive screen (Flash) to quickly identify the type of screen.

Additionally, the production pace picked up drastically after the scripts for the first two modules were created. This was when the design team switched to the marathon meetings described in Activity System 3b. The production pace and priority of tasks caused the storyboards to be created simultaneously and, eventually, after the actual screens had been created. The multimedia storyboards gradually changed the purpose of the communication tool from guiding the development team on what to include on the screen to a quick reference tool about what was on the screen after it was produced. The quick reference tool of storyboards helped to view individual screens quickly rather than inserting the CD and skipping screens until the screen in question. That could easily take a half hour to an hour of time to search for the screen. An example of why someone might need to view a screenshot in the storyboard after it was created could be because the development team needs to see who the actor was or because they might want to use it as a sample to create a similar screen. So while the communication purpose of the storyboards changed during the development, the need was relevant in both the early stages and later stages for the multimedia development team.
The intra-organizational communication was at its highest during the development activity (Activity System 6). The communication for this activity involved the entire UNIVERSITY development team: UNIV-Dir, UNIV-DesignCoor, UNIV-Writer, UNIV-ADesignCoor, the video crew, the graphics, motion graphics, and computer programmer, and often included other personnel within the department or student workers to help accomplish any given task. The structure of the intra-organization (UNIVERSITY) communication process was a different type of cultural workplace atmosphere than the inter-organizations’. The intra-organizations had been working with each other on a daily basis and had already developed a relationship and trust as coworkers. As mentioned earlier, the intra-organizational workplace cultural was not as competitive due to the academic culture of a university. Additionally, the workplace culture had a desire to further learning by providing work study opportunities for students. The UNIV-DesignCoor explained:

There’s a commitment in terms of people working in an educational institution to forward the students educational agenda as well as their own production agenda. So how we balance that off as far as how much we need them to work and how much we’re going to help them get taught along the way. It may mean that production doesn’t go quite as fast as we’d like it to go or something is delayed a little bit or it takes a little more time to instruct somebody how to do something, that’s our responsibility as educators. That's different than being in a regular standard production environment. (Personal interview with UNIV-DesignCoor)

In the UNIVERSITY department that worked on the PDC, there was also a culture related to media creation. The development team (intra-organization) was more a macro-managed environment. The UNIV-Writer explained the challenge of managing the project from the intra-organizational perspective:

You’ve also got to know how to manage creative people; give them room to do it but keep an eye on them because you can get so deep and married into your creative process that time is flown by. I tend to be more of a producer besides just being a writer because writers if you’re just a writer which is a great thing to be and you can go off a long time, no one gets a hook for you. But being a producer I tend to be a little rigid and more
deadlines met and everyone on task and I found myself doing that a lot. It seems to be my role in my life and sometimes its only but most of the time it’s very important to have that because you have to manage creative people gently but firmly. I don’t know how to say that because just as you don’t interfere with the process because that’s part of being creative, being left alone to think, to ruminate, to change but you still need it by 5 o’ clock. So it was a fine balance. (Personal interview with UNIV-Writer)

The UNIV-Writer explained that meetings with the development team were a requirement to stay on target with the deadlines:

We needed a lot of them because there were lot of details and a lot of new technology, a lot of updates and we had a problem with that. I think that we probably didn’t meet enough and then we still met a lot as there was so many moving parts. So we tried to have a PDC meeting weekly because you need to see where everybody was. And sometimes people are so busy working they don’t take their time to say there is a problem and you just keep working. (Personal interview with UNIV-Writer)

Several of the interviewees in this study who had worked at the UNIVERSITY acknowledged that informal meetings occurred often, even on a daily basis, as members would meet in the hallway or stop by someone’s office to ask questions or bounce ideas. As a creative group, these causal meetings sparked creative ideas. The UNIV-Dir explained the necessity of having a workplace culture that valued these informal hall meetings:

Well, we, you know, like to meet in the hall, I mean, in many ways life here is just one big meeting. People are going in and out of each other’s offices and constantly communicating with one another because it’s a team project…there’s parts of it that you can work on, part of it for a while, maybe a day, maybe a week. But generally, there’s got to be a lot of communication going on all the time. There are formal meetings, but most of it, maybe more than it should, is informal. (Personal interview with UNIV-Dir)

The findings in this study revealed frequent communication for a multimedia development team is important to stay on track with deadlines. Lack of communication can cause unforeseen delays. A team project needs individuals with different expertise. If one member asks another team member to create an item, the one initiating the request may not fully understand the complexity of the request. Creative people also love challenges and want to please or impress others with their work. The person might work on an item (such as an
animation) much longer than one miniscule object should take when considering the time limits
of the whole project. The UNIV-Writer recalled:

Sometimes you don’t know what you’re asking for. I think it was [UNIV-Multi
(multimedia technologist)]. I’m trying to remember which computer person was
designing it and it was taken them a long time because they thought we asked for
something I thought was kind of complex but didn’t actually understand what we’re
asking for. And instead of the person saying that really is going to be hard to do, they
tried to do it and we lost a lot of time because we realized what we ask for could have
been simplified. So you got to watch that communication. Some of it was cultural,
different cultures work differently. Some just try to get it done while others would say
excuse me, that’s really a complex design. (Personal interview with UNI-Writer)

The UNIVERSITY development team also had somewhat of a diverse ethnic group. The
UNIV-Writer went on to explain how the personal culture of its members can influence the
workplace culture and communication:

This was a person’s culture because you have that too. Different cultures of people. You
have, of course, company culture but you also have a person's cultural perspective which
can impact communication. Anyway, sometimes if you don’t really understand the
design I might have a real complex idea or [UNIV-DesignCoor] might or the group might
and you give it to someone and they try to get it done but after they researched it and take
5 weeks or something crazy, that’s the time they come back and say wait a minute guys.
Did you want to really do this? This happened a couple of times and we had to figure out
why because we don’t want someone to struggle with something so long before they ask
for help. We found it was simply different cultural communication styles. (Personal
interview with UNIV-Writer)

Roles in a development team need to be defined, and boundaries for those roles to be
respected. During the video production in Activity System 7, the UNIV-VideoDir worked with
several members of the UNIVERSITY department staff. He explained how the organizational
culture of the group allowed for an interchange of leaders:

Many organizations there’s a hierarchy, and there’s usually never changing of places
unless it’s a formal promotion or demotion. Meaning boss talks to assistant, assistant
talks to assistant to the assistant and then they talk to their underlings. In this department,
and this was something on this project is [UNIV-DesignCoor], the executive director of
this production is my mentor, my boss. But when it came to the videos, and we were out
in the field and I’m directing the videos, I’m telling him what to do. I’m telling him that he has to listen to me. He’s been you know at the time of this production, I already have been on the job for like three years. He’d been on the job for 30 years. So, but in this department that, and there’s whole departments that’s the same way. Because we wear multiple hats, and we know how to give the power to the person who deserves it, or has been given it without questions being asked. Which I really like in our area. Where one day I can be the director, the next day I’m the camera person, and this other person is going to be the director. I may not agree with those rules, but I know that that person’s in charge. Same thing with the graphic artists. Then you know, we have a department of four graphic artists, but the person who worked with us on PRIDE had the say so over everything. And her boss really had no input. It wasn’t up to him to tell her no I don’t want to get it right I want you to do this or I want you to do that. And our organizational culture here at [UNIVERSITY] in this department, in the media department I think it’s one of our biggest pluses is we can wear multiple hats, and we can step down a few rungs on the ladder, and go up a few rungs on the ladder without stepping on anybody's fingers or toes. (Personal interview with UNIV-VideoDir)

The Evaluation Activity (Activity System #8) was predominantly an inter-organizational activity. The intra-organizational (UNIVERSITY) portion of the evaluation activity initially involved the UNIV-Dir, UNIV-DesignCoor, and another member of the university who retired early in the project. They coordinated the needs of the EVALUATOR with the STATE-Agencies and PARTNER so their intra-organizational communication typically involved smaller meetings with summary reports to the UNIVERSITY development team during the larger department meetings. Since the workplace culture of the intra-organization was in academia, the intra-organizational participants provided assistance when requested from the EVALUATOR but otherwise remained uninvolved and uninfluential in the research to respect the evaluator’s objective findings.

To help assist the implementation of the product, the UNIVERSITY hired a marketing person specifically to promote the PDC to the state child welfare agencies. By this time, the grant money had been depleted. The marketing of the PDC was anticipated to be an inter-organizational activity, led by the PARTNER, but ended up having a strong intra-organizational
aspects as the UNIV-Dir, UNIV-DesignCoor, and UNIV-Marketing personnel helped market the PDC. The UNIV-DesignCoor stayed active in the implementation from a technical assistance objective.

The workplace culture of the intra-organization had a strong influence on learning, respect, and research as the development team transitioned from the development stage to the implementation stage. The range of communication was a mix of small interpersonal communication and informal meetings to group communication, formal meetings and collaboration. The workplace culture of the UNIVERSITY’s communication methods and values systems did delay progress in the development compared to a corporate environment, but the organization justified their delays through meeting other internal objectives, such as learning, mastering new tools, and community service. The UNIVERSITY also took advantage of pulling in community members throughout the development, evaluation, implementation and marketing activities. When the intra-organization encountered tensions through its relationship with the PARTNER, the intra-organization branched out into other inter-organizational community members to continue the original objectives and goals of the project.

Summary of Development to Implementation communication. Overall, the inter-organizational and intra-organizational workplace cultures shaped the communication process on collaborative transformation from development to implementation in five distinct methods on the impact of communication: frequent meetings, deadlines, authenticity, roles, and trust. First, the intra-organization (UNIVERSITY) required many meetings throughout the development process. These meetings were larger team meetings in a conference room and frequent spontaneous meetings in the hallway or private offices. Meetings were crucial to understanding the convergence and requirements of multiple media formats through the collaborative joining to
various roles. These meetings also helped meet deadlines, the second impact on communication. Spontaneous meetings provided quick answers while the larger team meetings helped identify problems and provided a bigger picture of the whole project and how each tasks or role was meeting the anticipated deadlines. Additionally, deadlines were useful during the Evaluation and Implementation phases. The third method of communication detected as important between the Development to Implementation phases were establishing authenticity through the inter-organizational collaboration. Having PARTNER-PSME present during the video productions was crucial to eliminating unnecessary re-shoots of the video due to the knowledge base of the video director versus the standards practiced in the child welfare industry. Throughout the Development to Implementation, the intra-organization directed many of the activities but also kept the inter-organizations a part of the process to communicate, provide feedback, and potentially correct any misunderstandings of the development team may have had regarding the authentic practices of the child welfare agencies.

Roles were another method of communication. Members through this process were all given roles and titles for their tasks on the project. These roles appeared to be respected by the inter-organizations and intra-organizational development team. The roles non-verbally defined who was in charge with what aspect or task. This kept members from crossing boundaries, such as the director selecting research participants or the video director’s opinion of the graphic artist’s work. The roles also allowed for objectivity in the Evaluation and Implementation activities by resisting biased communication that could sway or change an opinion. The roles also allowed for multiple hats to be worn, thus changing the direction of authority among the team members. When hats were changed, members treated and communicated with the others according to the current role. During the video productions, the UNIV-VideoDir and PARTNER-
PSME respected each role and contribution to the videos. The PARTNER-PSME did not tell the video director how to set or light the stage but only contributed his role to authenticating the actual look of the video to the child welfare industry. When the PARTNER-PSME made a comment, the UNIV-VideoDir respected his opinion and role and did not take offense to suggested changes.

The last issue that impacted the communication method was trust. This was also found in the Design to Development communication but turned directions. Over time, the UNIVERSITY lost trust in the PARTNER. Lack of transparency, unwritten expectations, a divergence of the shared value, and financial struggles developed into trust concerns that stiffened the partnership.

**Question 2: Influences**

The next question in my research examines the tools and rules that influenced the development team’s (UNIVERSITY) involvement in the design, development, and implementation process. In other words, did the activity systems analysis reveal any influential issues that appeared to have caused the development team to increase or decrease the amount of participation needed by the development team to complete the process of physically creating the product? Not all partners contributed equally to a given project and sometimes the anticipated amount of time and resources provided by each partner changed as the project evolves. The PDC project was a partnership based upon the Learning Anywhere, Anytime, Partnership (LAAP) grant and was specifically based on the development team being part of the partnership rather than a company being hired or contracted to create the physical project. The question set forth was: “Based on the triangular structure of activity systems analysis, what tools and rules
influence the development team's participation level during the design, development and implementation process?"

To answer this research question, I again examined the activity systems analysis listed under the Design, Development and Diffusion themes and pulled out any contradictions and tensions related to the tools and rules to help answer this question. Additionally, I examined the tools and rules that influenced the activity. Given the individuality of this case study, the expectations of involvement compared to the actual involvement needed by the development team shed light on how unexpected contradictions or tensions within an activity altered the involvement needs of the development team.

**Design**

It was originally assumed by the development team (UNIVERSITY) that it would not be involved in much of the design process of the PDC because they were using a pre-existing curriculum. At the onset of the project, the development team had assumed it would simply transfer the existing face-to-face training from the original curriculum into an interactive, multimedia training. This assumption was partly because it was the first time the development team was creating an interactive multimedia project. The team’s background was in video production and it was somewhat uncertain of the challenges faced by converting the original curriculum to a multimedia training. Equally so, the PARTNER and STATE-Agencies involved in the transformation were not initially familiar with some of the challenges they would encounter. The existing training manual (*Original Curriculum – PRIDEBooks*, which was delivered in boxes and quite lengthy to review) became the tool for the development team during the Design phase. There were nine modules totaling 25 sessions. Each session had its own
PRIDEBook and training materials for the trainer. Table 21 lists the activity system elements, contradictions and tensions related to the tools and rules within the Design theme activity systems.

Table 21

Activity System Elements of Design Theme

<table>
<thead>
<tr>
<th>Activity System</th>
<th>Tools</th>
<th>Rules 1 for Subject 1</th>
<th>Rules 2 for Subject 2</th>
<th>Contradictions</th>
<th>Tensions</th>
</tr>
</thead>
<tbody>
<tr>
<td>#3a: Initial Design</td>
<td>Original Curriculum PRIDEBook Multiple Subject-Matter Experts</td>
<td>Grant Deadlines Media Workflow Existing Workload Learning Curve</td>
<td>Consensus Approval Strict Criticism Multiple State Laws/Practices Existing Workload</td>
<td>#1 - lack of resources on practices in new media #2 - Existing Workload #3 - Cultural norms &amp; practices</td>
<td>#1 - Learning Curve #4 - Consensus Design vs. medium</td>
</tr>
<tr>
<td>#3b: Design</td>
<td>Original Curriculum PRIDEBook Appointed SMEs</td>
<td>Grant Deadlines Media Workflow Existing Workload Learning Curve</td>
<td>Designee Authorization Consensus Acceptance Existing Workload</td>
<td>#1 - Existing Workload #2 - Cultural Norms and Practices</td>
<td>#1 - In-class activities to media based #2 - Deadline</td>
</tr>
<tr>
<td>#4: Screencoding</td>
<td>Video Method Script Module Outline</td>
<td>Screen Sequences Animation Pace of production</td>
<td>Not applicable: 2-dimensional activity system</td>
<td>#1 - Interpretation of sequences</td>
<td>#1 - New method for sequences #2 - Understanding for non-media people</td>
</tr>
</tbody>
</table>

In the face-to-face training manuals, some classroom activities, such as setting aside time for the participants to discuss an issue in a group, needed to be re-worded since the new training would be set in a distance learning environment for individuals rather than groups. Likewise, there were no references to the ethnicity, age, or tone of a written case study or skit in a training manual. Much of the material had to be re-designed to be visually displayed. Additionally, while
the development team went about the challenge of converting the curriculum manual to a multimedia script, the PARTNER and STATE-Agencies requested changes to the existing curriculum and wanted to update some of the original content. Because of these unexpected challenges, the development team worked extensively on converting the curriculum into a script while battling several rules related to the conversion. The findings from this study revealed that the revisions from a face-to-face curriculum to an interactive, distance learning training program influenced the amount of participation required by the development team expected at the onset of the project.

During the first year of the project the UNIV-Writer also worked with the PARTNER, all the STATE-Agencies and any STATE-Agencies or PARTNER community members they felt should also comment on the script and revisions based on the community members’ expertise. This was part of the culture of how the original curriculum was developed but was challenging to creating multimedia. The initial design process with a consensus involvement created delays in feedback, thus holding up the script and design process and created a need to revise the process. The findings revealed the need to have a narrow set of designated members on a writing team with authorization to make executive decisions for the final project. This designated team also needed to have clear cut deadlines, face-to-face marathon meetings, and personality compatibility. The revised design process reduced the amount or participation and time spent by the development team.

An additional influence of participation by the development team, based on the rules and tools in the Design theme, included time to learn the new activity. During the first year of the project, there was extensive investment of time to learn how to work with the partners, understand the partners’ needs, and learn how to develop communication tools and processes for
the new media format. The development team was responsible for converting the face-to-face curriculum into an interactive, distance learning product, but as a department, the development team had not previously attempted producing this form of media. The findings in this case study revealed that the learning curve influenced the timeline of the design process in the project, which was much greater on the first module compared to sequential modules. As the UNIV-Dir stated, “we were kicking out modules one a month at the end, and it became a very efficient project because we had reached a common vision” (Personal interview with UNIV-Dir).

Development

The development team initially expected that most of its involvement in the project would come from the Development theme. Two of the central activity systems detected in the Development theme were, in fact, intra-organizational activities: creating the storyboard and the development process. The PARTNERS and STATE-Agencies did not participate in the development or review the storyboards. However, during the video production activity, the PARTNER and STATE-Agencies did influence the time spent on this activity. Table 22 recaptures the tools, rules, contradictions, and tensions in the Development theme.

Once the first script was designed, the UNIV-DesignCoor needed to explain the script as simply as possible to the development team. The Storyboard activity influenced the participation level of the UNIV-DesignCoor and UNIV-Writer, particularly in the beginning process of development. By having this communication tool, the remaining development team could begin some of the independent tasks without having to wait for the UNIV-DesignCoor and UNIV-Writer. For example, the graphic artist could begin working on screens that were considered similar, such as a narration screen, by viewing the storyboard.
Table 22
Activity System Elements of Development Theme

<table>
<thead>
<tr>
<th>Activity System</th>
<th>Tools</th>
<th>Rules 1 for Subject 1</th>
<th>Rules 2 for Subject 2</th>
<th>Contradictions</th>
<th>Tensions</th>
</tr>
</thead>
<tbody>
<tr>
<td>#5: Storyboards</td>
<td>Video Method Script Design Team Coordinator</td>
<td>Time Technology Limits Pace of production</td>
<td>Not applicable: 2-dimensional activity system</td>
<td>#1 - Lack of images Contradiction #2 - Pace of Production</td>
<td>#1 - Workload priority #2 - Learning Curve</td>
</tr>
<tr>
<td>#6: Development</td>
<td>Software Hardware Script</td>
<td>Software Technology Creativity Team Collaboration</td>
<td>Not applicable: 2-dimensional activity system</td>
<td>#1 - Learning Curve</td>
<td>#1 - Personality Conflicts #2 - Staff Turnover</td>
</tr>
<tr>
<td>#7: Video Production</td>
<td>Subject-Matter Expertise Video Production Equipment Script Talent Locations</td>
<td>University Structure Media Alliances Technical Capability</td>
<td>State Bureaucracies Child Welfare Alliances Child Welfare Laws</td>
<td>#1 - Depletion of Resources #2 - Cultural Insight</td>
<td>#1 - Appearance and tone #2 - Capturing concepts</td>
</tr>
</tbody>
</table>

However, as the development team continued the process in the later modules, the influence of this tool was reduced. The development process eventually moved faster than the time it took to create the storyboards, and an alternative option to use a short outline of the elements on the screen was more useful. The storyboard later served as a reference tool for the completed disks, influencing the team’s ability to quickly view individual screens.

The development process was all internal to the intra-organizational development team. Once the product or sections of the product were created, the development team sent out CDs with the piece or module for review. By this time, the PARTNER or STATE-Agencies received the product to show the progress of the development team. Occasionally, minor corrections were made, such as removing a clock from a graphic screen about “time out,” but time-intensive changes were few. The tools and rules did influence some of the time and participation level of
the development team that was not detected from the start. Findings show that issues included
the learning curve, personality conflicts, and staff turnover.

The video production process was originally assumed to also be an intra-organizational
activity in which the university would independently capture the video. However, while
recording the first module, a video needed to be re-recorded because the video lacked the
authenticity of the child welfare worker. The tools and rules of both video production and the
child welfare industry influenced the amount of participation the development team needed to
apply toward following those tools and rules. For instance, video production requires careful
setting of the lights and audio to ensure high quality visuals and sound. In some cases, the
lighting set up could take longer that the actual video recording. The UNIV-VideoDir explained
the complexity of the tools and rules on the development team’s participation work with both
the child welfare agencies and talent unions:

With [the PARTNER and STATE-Agencies] being a government agency we were
working with, there were a bunch of rules and laws that had to be followed. Something
as minor as me writing the scripts, and just making sure that a case worker you know the
actor whose playing a case worker follows the same protocol a case worker would be in
the field. Then there’s as much as you know the rules and laws me working with actors,
with children. You know depending on the age of a child, a child is only allowed to work
for so long. And if not then you’re busted for child labor laws. Then there is the
confidentiality of some of these foster children where if we are interviewing somebody
we had to pay attention to what the foster parent or the case worker was saying because if
the child’s name was mentioned we had to completely scrap the question or the answer,
or have the person completely redo it again. So, there’s a lot of confidentiality and
protection laws and rules. And again I mainly focus on laws, not necessarily rules. But
it was federal, state laws and local laws that we had to adhere to big time. (Personal
interview with UNIV-VideoDir)

The video director had limited knowledge of the child welfare industry and its rules. To
accommodate this deficiency, the PARTNER-PSME or another designated subject-matter
expert was present during the video shoots.
There were also challenges getting approval for the video scripts. The UNIV-VideoDir explained the holdup as multiple people having input but few with the authority to approve the script.

The most difficult thing, especially this because we’re dealing with government agencies, is their bosses, and I see this all the time, I’ve worked with multiple government agencies. And this is always a difficult task for us is their boss assigns somebody to do the project, but yet that person never seems to have a yea or nay availability in the project. Which mean if we called and say okay we want to do this, or here’s what we need to do now it has to go through three, four people to obey a command before somebody makes a decision of yea or nay on it. And usually would end up hindering our productions by delaying them a little bit. (Personal interview with UNIV-Video-Dir)

While these rules and processes influenced the development teams’ timeline to write, produce, and edit the videos, the partnership and inter-organizational collaboration were a valuable resource for providing talent and video shoot locations. The findings from this case study indicated the tools and rules of video development and agency knowledge, pertaining to the content of the videos, influenced and increased the amount of inter-organizational collaboration necessary by the development team during the video production activities.

Implementation

My original question inquired about the participation level of the development team in the design, development, and implementation processes. For the implementation process, I examined the Diffusion theme. Again, I looked at the tools, rules, contradictions and tensions. All three activities within this theme were inter-organizational activities (see Table 23).

The tools and rules of the Evaluation and Implementation activities influenced the participation level of the development team in a restrictive manner. Due to the goal of obtaining an objective evaluation, the development team played a minimum role in organizing the
evaluation. The PARTNER and STATE-Agencies contributed feedback on the criteria of what would be considered a successful project to guide the EVALUATOR. The UNIVERSITY’s development team sought advice from the Evaluators and arranged shipment of the first module to be evaluated. Likewise, during the Stage 1 study in the implementation activity, the UNIVERSITY participated in drafting a questionnaire.

Table 23
Activity System Elements of Diffusion Theme

<table>
<thead>
<tr>
<th>Activity System</th>
<th>Tools</th>
<th>Rules 1 for Subject 1</th>
<th>Rules 2 for Subject 2</th>
<th>Contradictions</th>
<th>Tensions</th>
</tr>
</thead>
<tbody>
<tr>
<td>#8: Evaluation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Statistical Analysis</td>
<td>Grant Meeting</td>
<td>#1 - Granting</td>
<td>#1 - Final CD</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Methods</td>
<td>Deadlines</td>
<td>agency’s approval</td>
<td>submission</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Networks</td>
<td></td>
<td>#2 - Research</td>
<td>#2 - Feedback for</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Meeting</td>
<td></td>
<td>development</td>
<td>States</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Participants</td>
<td></td>
<td>time</td>
<td>#3 - Participation</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Decision Pace</td>
<td>Budget Cuts</td>
<td>#1 – Budget Cuts</td>
<td>#1 - Decision Pace #2 - Method of Distribution #3 - Copyright #4 - Roles and Responsibilities</td>
</tr>
<tr>
<td>#10: Marketing</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Conferences Pricing</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Marketing Materials</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

As mentioned in the implementation activity, the questionnaires had multiple purposes for the different organizations. The development team participated in conference calls and meetings (including one in the ASSOCIATION’s country). The development team, represented by the UNIV-DesignCoor and UNIV-Dir, contributed technical questions pertaining to the
function of the CDs, aesthetic value, and ease of use. Outside of the meetings, the development
team did not participate in the actual collection or analysis of the data to maintain objective
results except as a technical resource if any of the study participants were having difficulties
playing the training CDs and delivering the CDs to the ASSOCIATION’s headquarters. The
team’s participation was also influenced and limited in the Evaluation and Implementation
activities due to the short timelines of the research. The findings for these activities revealed the
development team had a limited, contributing role to the processes from a technical standpoint.

As stated in the Activity #10: Marketing, the UNIVERSITY did not originally expect
much participation in the marketing process as the PARTNER was selected within the grant due
to connections and ability to market to the end users (child welfare agencies). During the design
and development activities, the development team participated in a couple conference
presentations, accompanied by members from either the PARTNER or STATE-Chair. However,
the partnership began to fall apart right after the completion of the project and all its modules
were created. The PARTNER organization encountered budget cuts and laid off the key
participants in the PDC project.

[The PARTNER] was going through a major financial crises and still continues to be. The
fact that I'm here talking to you, saying that I’m unemployed and that [PARTNER-
PSME] is unemployed and that [PARTNER-ISME] is unemployed has all to do with the
fact [PARTNER] could not generate revenue. The industry itself was hurting and to the
degree the industry hurt, so did the association. (Personal interview with PARTNER-Dir)

Additionally, questions arose as to the copyright ownership of the original curriculum
that had not been revealed to the development team at an earlier time. Once the product was
completed, the rules changed and the tensions and contradiction influenced the level of
participation from the development team in the marketing process. The findings revealed that
dissolution of the partnership influenced the development team to put out 100% effort in the
marketing of the materials they had created within the partnership. The development team found it role and responsibilities changed and they were “flying solo” as the UNIV-Marketing personnel stated.

**Question 3: Synergy**

To reiterate, the question for this section is: “In which ways do culture, resources, and the division of roles influence instructional product development in a large-scale, joint collaboration?” The question examined whether any effects appear to have occurred through the inter-organizational collaboration. A synergism is the combining of elements (such as organizations, skills, or tools) that creates a positive effect that could not have been achieved without the combined elements. In contrast, antagonism has the opposite (negative) effect in which elements within the collaborative activity inhibit or interfere with the activity’s object. By utilizing the three-dimensional activity system in this study, I was able to separate the subjects, subject’s rules, and subject’s community members from the shared elements of tools, objective, and division of labor. Separating and identifying the individual subject’s rules and community members revealed the unique cultural norms of each subject. The resources (tools) and division of labor shared among the organizations toward the object (goal/objective) illuminated the contributions of the inter-organizational collaboration. To examine these relationships, I look at the holistic perspective of all the activity systems, as seen in Activity Systems Elements of Design Theme - Table 21, Development Theme – Table 22, and Diffusion - Table 23.
First I looked at how culture influenced the instructional product development in the inter-organizational collaboration of designing, developing and implementing the PDC. One of the key reasons for organizations to develop partnerships is to achieve outcomes they could not achieve on their own. The general philosophical elements of activity theory attempt to integrate three perspectives: 1) the objective, 2) the ecological, and 3) the socio-cultural (Kaptelinin, 1996, p. 107). The objective for both UNIVERSITY and the partners complemented each other. The UNIV-Dir wanted to develop the skills of his staff in the newer technologies, while the partnering states wanted to provide a distance education option to their remote or home-bound parents. The UNIVERSITY had the environment, studios, and technical skills to achieve this goal.

The partnership combined different organizations with different cultures, but the partnership needed a shared vision and culture of its own. The UNIV-Dir explained the importance creating a culture of equality and shared goals:

The project was called any time, any place, partnerships, and the key word, I think, we saw it to some degree in the beginning, but it emerged as bigger and bigger and bigger in the end is how do you partnership? How do you create it? How do you maintain it? Was probably the most difficult and challenging but it was also the most rewarding part of the whole thing. Um, because to succeed you had to develop a common vision that you own collectively and it’s not hierarchical. It’s a partnership and not a traditional, like a traditional marriage where the man makes all the decisions and the wife is subservient. But a partnership based on equality, and I remember at one point sitting in a meeting with our own staff here, and we were struggling with these things, with ourselves and our partners and trying to, you know, how can we move forward ....and it seemed to me, my assessment of the situation there had been good things and bad things about how this played out, I think, the way I handled it. But, my response was nobody’s in charge, that the success of the project, if it’s really a partnership, depends upon our capacity to build a shared vision, and to jointly embrace that, and if we cannot create that unity of vision, the project will fail because it will grind to a halt precisely because nobody can tell, you know, deliver a definitive decision about major issues. Um, you have to sit and consult and work them out, and the interesting thing is it took a long time to get to the first
[script], but we were kicking out modules one a month at the end, and it became a very efficient project because we had reached a common vision. (Personal interview with UNIV-Dir)

The STATE-Agency interviewed for this study also elaborated on the value of partnership within his organization and desire to gain a working vision:

There aren’t those power struggles. We’re not a competitive market place necessarily in terms of finances. We’ve got a pretty steady funding source, we’ve got a pretty steady budget, within certain restrictions of course, we have things that we can do and things we cannot do. For the most part, we’ve been allowed a fair amount of freedom to operate. So when a project like this comes along it’s something that’s sanctioned and valued and then it became an expectation of my job that I would participate in this. And so, there’s a high value placed on the importance of developing and working with other national entities around developing the best possible model of practice that we can as it relates to training foster and adoptive parents. I was given, I would say, a great amount of freedom to work in that area and to bring that back to the state. (Personal interview with STATE-Chair)

However, partnerships, even with the best intention, can be challenging. A few of the activities examined in this study revealed how culture did impact the collaboration. Activity System 1 (Buy-in), Activity System 3a (initial design process), and Activity System 6 (Development) encountered cultural influences including personality conflicts in Activity Systems 3a and 6. The PARTNER-Dir commented on the personality aspect: “I think it’s very tough for two individuals within the same organization to work together well. And this is me with my doctoral degree in organizational stuff looking at personal and inter-organizational and the cultures of different organizations” (Personal interview with PARTNER-Dir). These cultural conflicts related to personality and previous experiences of participants in the intra-organization and inter-organizations.

In some ways, the culture of the UNIVERSITY and the STATE-Agencies assisted in creating the partnership. The UNIVERSITY had a strong sense of community service and desire to learn. The STATE-Agencies had a strong since of collaboration and volunteerism. On the
other hand, the STATE-Agencies and PARTNER had previous experience in a consensus joining of the minds. The gathering of consensus and minds was part of their culture and challenged the UNIVERSITY development team to create the media. While the UNIVERSITY was a non-profit organization that was a bit more laidback on deadlines than the corporate world, the timeliness of writing scripts and producing media needed some structured planning and time limits to remain on target for the grant.

Resources

Another overlapping finding of these activities was the impact of the rapidly changing technology. These changes were the motive for offering the LAAP grants. FIPSE wanted to develop partnerships that could represent economies of scale in developing training to the underserved and distance learners throughout the nation. The changing technology was a way to achieve these goals through expanding partners who had an invested interest in the outcome. The changing technology, however, posed a threat to intra-organizational buy-in because of resistance to the change and mastery of the skills. The rapidly changing technology made it difficult to propose a method of development in the grant. The grant needed to be innovative, but the technology at the beginning (in 2000) was still limiting the possibilities. It was uncertain at the beginning how quickly technology would improve, but this aspect became a part of the culture of the PDC project. Learning the new technologies and their possibilities became a motivational force toward innovation. Communication methods and shared terminology merged into this new culture of interactive media design and development. Activity 3, Design, identified that the development team needed to find acceptable terms when talking with the PARTNERs. In this essence, the partnership created acceptable terminology for communicating and
understanding each other without being offensive. The technology resources of the organizations also impacted Activity 7, Implementation. During the implementation, the agencies that participated in the initial Stage 1 study had restrictions set by the IT Department pertaining the use and installment of software. Due to these restrictions, the UNIV-DesignCoor needed to be involved by providing technical assistance to agencies that ran into problems with the QuickTime program. Providing this sort of technical help hotline (a telephone number to the development team’s expert) was useful during the Stage 1 study of the implementation.

Another main resource for the collaboration was networking. To network, in this sense, meant to tap into other connections or resources to complete an objective. Throughout almost all the activities, participants in the project utilized community members and other networks to assist in their tasks. From the beginning, the UNIV-Dir was provided a company name by the grantor to assist in the evaluation, a UNIVERSITY community member provided the idea of the foster parent training project, the PARTNER helped gathered STATE-Agencies, and the higher-up intra-organizational members of the UNIVERSITY development team helped support the buy-in from the rest of the department. During Activity 2, Developing a Shared Vision, the development team experienced a storm that took out the electricity at the inter-organizational meeting location, so a member of the development team used networking skills find a new meeting location. In Activity 3, the Design, networking with subject-matter experts from across the nation was used to help design and write the script. The media development team networked with other members of the team through meetings and informal hall meetings in Activity 6. The participants in this study credited these informal hall meetings with sparking creativity and providing guidance. During the video productions, Activity 7, networking was at its highest as the VideoDir and other members of both the intra-organization and inter-organization helped
gather participants to be videotaped. In Activity 8, the Evaluator, with assistance from the PARTNER, was able to network with a local state child welfare agency and school to identify participants for the evaluation. The implementation Stage 1 study (Activity 9) provided a network resource among the researcher, ASSOCIATION, PARTNER, and UNIVERSITY for the 26 regional agencies that participated in the study. From within those agencies were also networking to find participants. Finally, the UNIVERSITY was able to network with state child welfare agencies through conferences and word of mouth for Activity 10, Marketing.

Division of Labor

Data analysis revealed that the development process was not iterative or systemic, as many development models propose. Instead it was more of a parallel process. The main parallel processes in the collaborative activities were project management, design, development, evaluation, implementation, and marketing. Because the project originated from a pre-existing face-to-face curriculum, the analysis phase often found in ADDIE was minimal, with some needs analysis considered during the evaluation and design. Iterative processes imply a repetition in the activities similar to a cyclic pattern, while the systemic process implies a linear process. The study identified that the various community members in the project did not necessarily wait for the systemic process to get to their part in the development and that their assignments did not always come in cycles. For instance, once templates were designed for certain screen shots, the graphic artist would work ahead on additional modules for which the script had not been finalized. The division of assignments facilitated the efficiency of the workflow as individuals took responsibility for their own role in the team and were given lead decision-making permissions based on their contributing knowledge.
The division of labor was originally sorted in the buy-in and grant process by expertise and need. The UNIVERSITY needed an authentic problem, and the child welfare needed to reach remote foster parents. The UNIVERSITY had the technical skills; the PARTNER, STATE-Agencies, and EVALUATOR had the expertise; and the ASSOCIATION had the connection to the end users. The participants in this study acknowledged that they wore multiple hats and that roles were respected for the most part. The division of roles became an issue during two activities: first, during the design process when an individual from the UNIVERSITY and individual from the PARTER organization were both attempting to lead the group in different ways and second, during the challenges between the personalities of the multimedia technologist and the programmer during the creation process in which the UNIV-DesignCoor had to step in to restructure the work process to avoid personality conflicts. Overall, the collaboration of the inter-organizations brought a flattering complement and balance to the skills and contributions of each organization up until the end. It was after the completion of the project when the inter-organizational collaboration broke down and the division of labor altered its original course. At that time, the PARTNER and UNIVERSITY had different perspectives on the object of the marketing activity. Additionally, the partnership was failing due to other issues mentioned in Activity 10, Marketing. The division of labor, originally planned to have the PARTNER lead the marketing process, did not occur and the UNIVERSITY was placed in a position to handle the marketing on its own.
CHAPTER 5
DISCUSSION AND CONCLUSION

This longitudinal case study investigated the inter-organizational collaboration of instructional development and implementation. The study sought to gain a developer’s perspective of the communication, cultural influences, and synergistic properties of the PDC project. The study utilized an activity-theory lens (Leontiev, 1978; Wertsch, 1988; Yamagata-Lynch, 2003). Engeström’s (1993) model of activity systems analysis was used to investigate the intra-organizational activities, while a three-dimensional activity system (developed in this research) was used to investigate the inter-organizational activities. Although inter-organizations can have individual objectives for participating in an activity, the final objective (the PDC product) was a singular shared object. A three-dimensional activity system focused on the shared activity (tools, object, and division of labor) while separating the cultural elements of subjects, rules and community members. The three-dimensional activity system also provided a new element of synergy in the analysis. The three-dimensional activity system was valuable in distinguishing unique communication processes, influences, and contributions of the individual organizations, thus providing insight into the synergistic and antagonistic elements of the findings. Contradictions and tensions were viewed as potential antagonistic weakening of the partnership, while solutions and innovation were viewed as the synergism of the partnership.

In this final chapter, I discuss the findings from the research questions on communication, influences, synergy, and PDC implementation. I then discuss the significance of
this study to the literature review in Chapter 2. This section is broken into the historical
development of instructional technology, design and development models, social process, and
use of activity theory as a means for investigation. The next section of the chapter presents some
limitations of this study followed by a reflection on recommendations for future research.

Summary and Discussion of Study Findings

This longitudinal case study presents a view into the process of the PDC development
and implementation that occurred from 2000 to 2007. The data were collected and the themes
were identified through associated activity systems and grouped by related research questions in
Chapter 4. A summary of the findings and discussion follows.

Communication

Overall, this study found that the inter-organizational and intra-organizational workplace
cultures shaped the communication process on collaborative transformation throughout the
process of design, development, and implementation. The organizations shared a value system
that distinguished this project as a worthy project for society and foster children while also
modernizing training and skills to reach distant learners. The Learning Anytime Anywhere
Partnerships (LAAP) grant brought the organizations together to collaborate on the product
development of a distance training program while still allowing the organizations to work toward
individual objectives. King and Griggs (2006) discuss that the knowledge and experience from
the FIPSE-funded partnership projects are a unique resource for practitioners pertaining to higher
education adapting to change.
The three-dimensional activity system presented in this study enabled a perspective of the shared objective, rather than individual objectives, to view the cultural influences to communication. The three-dimensional activity system separated the individual rules and community members (inter-organizations) for applying an activity theory lens on these cultural characteristics. The development team (intra-organization) was more a macro-managed environment. Paralleling Litchfield (2006), too many rules and restrictions can restrict creativity, and managing creative staff requires special project management techniques. Litchfield (2006) stated, “One of the most interesting challenges for an instructional project manager is working with creative people. … If you approach management of creative people the same way you approach traditional management, you may find resistance and misunderstanding. Creative people are not often driven by the same goals” such as budgets and deadlines (p. 116). Communication and management of the production process within the development team consisted of multiple meeting formats, from two staff members to whole teams and formal to informal “hall meetings.”

In contrast, the workplace culture of the inter-organizations focused on consensus design and micro-management. Their previous history provided mass input from multiple experts, regions, and community members to create the original P.R.I.D.E. curriculum. They were very detailed oriented and followed a micro-management style. The skepticism and trust issues regarding the transformation to the new multimedia format training influenced the communication process. The different work styles of the organizations posed a challenge to the multimedia development as it related to processes and leadership. The organizations were non-profit and shared some similarities, but their structure and methods for decision making differed to the point they were not compatible with the structure and methods needed for multimedia
development. The detail focus, such as debates on word semantics and consensus design from multiple community members, hindered and delayed the design and script writing process. Additionally, the cultural differences of organizations was evident in this case study due to the connotation of words and the different interpretations by the organizations, such as the term game to explain interactive activity. Hora and Millar (2011) stated, “These terms, known as boundary constructs, can serve as a point of contention or confusion between groups that are using the same words or phrases to mean different things” (p. 85). In order for the partners to collaborate, new and shared understating of terms needed to be created.

The design process revealed several contradictions and tensions related to management and communication style. However, the inter-organizational collaboration and communication also had a positive impact from the workplace culture. The workplace culture of the inter-organizations valued community involvement and utilized community members to help overcome talent depletion, provide research participants, offer feedback, and network marketing possibilities. In the development stage, the collaboration of the inter-organizations was helpful in providing cultural insight and authenticity to the videos. The workplace culture of all the inter-organizations valued volunteerism and community service. Geisler (1995) also found that “organizations are motivated to engage in collaboration when all organizations involved perceive benefits and resources. Interaction theories identify survival increases if there are initial assets of good intention, trust, favorable prior beliefs, mutual psychological commitment and prior relationships between the parties” (p. 224).

Common in the literature is the need for trust in partnerships (Geisler, 1995; Litchfield, 2006; Muethel, Siebdrat, & Hoegl, 2012; Slater & Ravid, 2010). One of the greatest challenges for this inter-organization collaboration appeared to be related to the perspective of trust and
building relationships. There were trust issues early in the PDC collaboration that seemed to decrease during the development stage and then rise again after the product was completed and ready for implementation and distribution. In the beginning, the development team felt it had to work hard at gaining the trust of the inter-organizations. The UNIV-Dir avoided communicating legalities of the partnership in an attempt to concentrate on gaining trust, and sticky issues were rarely communicated. But in the end, it was the UNIVERSITY who appeared to eventually lose trust in the PARTNER because of issues not addressed early on in the contractual agreement for the objectives of the project. However, the UNIV-Dir stated in his interview that, in hindsight, he was uncertain if he would have changed things and put more emphasis on the contractual agreements over building trust. This coincides with the literature in that a balance needs to be found within partnerships (Slater & Ravid, 2010).

The UNIV-Dir stated he approached the partnership as an equal leadership between the partners. In this project, the partnering organization was accustomed to consensus design. According to Hora and Millar (2011), shared governance helps foster trust, familiarity, and collective ownership between the organizations, but when collaborating on inter-organizational instructional projects, it was found that placing too much emphasis on trust impacted the outcome. Earning trust is an essential part of inter-organizational collaboration, but early communication of challenging and difficult topics can alter the outcome of the partnership.

While it is impossible to predict if the outcome of the partnership would have changed had early communication occurred, it is also possible that if the trust issue had not been given such attention, the partnership would not have even lasted as long as it did. This could be a future topic of research on intervention techniques to address communication challenges versus trust building amongst new collaborators.
Influences

The next question this research examined was whether the tools and rules influenced the involvement of the development team (UNIVERSITY) in the design, development, and implementation process. In other words, did the activity systems analysis reveal any influential issues that appeared to have caused the development team to increase or decrease the amount of participation needed to complete the process of physically creating the product and implementing it? The PDC project was a partnership based on a Learning Anywhere, Anytime, Partnership (LAAP) grant and was specifically based on the development team being part of the partnership (King & Griggs, 2006) rather than a company being hired or contracted to create the physical project. Originally, the development team did not anticipate much involvement in the design of the curriculum, as the training material had already been developed. However, during the transformation of the original P.R.I.D.E. training manuals to a scripted multimedia training format, the development team was required to spend much more time than anticipated. The original training manual was a tool used to guide the script writing process, but the development team learned that new design considerations were needed to translate the manual to a script format. For instance, a printed manual did not need to consider visual representations, roles of ethnicity and gender, tone, and portraying sensitive topics. However, the partners and content experts in this collaboration wanted to make revisions to the training since revisions were already being made for the multimedia format. Thus, the tool used for script development (the original printed version training manual) and the rules of changing perspectives to the training material (content experts and industry changes) did influence the amount of contribution needed for the design process. Transforming the original, printed training manual into a multimedia script was much more complex than anticipated. As Richey et al. (2007) noted, “The complexities and
pressures of these work settings shape not only the roles of designers, but also in many cases the
design processes themselves” (p. 181).

The findings from this study also revealed the need to have a narrow set of designated
members on the writing team with authorization to make executive decisions for the final
project. The original design process delayed the process because of asynchronous
communication through emails, consensus input, and confusion brought on by multiple versions
of a script. Kerzner (2013) described emails as time robbers. Slater and Ravid (2010) also
acknowledged that timely communication is at the “heart of good partnering” (p. 205), but the
partnering agencies volunteering to participate in the design while still having their own
priorities and work made response time lax, as identified by Hora and Millar (2011): “The
different obligations an individual has toward his or her home organization and to the partnership
may not always be in accord and may ultimately work at cross-purposes, leading individuals to
make decisions that are not in the best interests of the collective” (p. 26). Virtual teams can
collaborate (Richey et al., 2007; Saettler, 2004), but attempting to design a multimedia script
through virtual teams and a consensus approval was shown to be challenging to the development
team. Furthermore, this was at the beginning of the collaboration when the development team
was trying to build trust among the partners. “Building trusts [sic] and keeping virtual team
members informed is even more critical than when working with a site-based team.

Communicating with e-mail is efficient and fast but lacks the human interaction of site-based
teams. You must be careful not to sound terse in messages” (Saettler, 2004, p. 120), paralleling
Clydebank Business’s (2015) suggestion that “the most efficient, productive communication
within a project team takes place face-to-face.” The revised design process reduced the amount
of participation and time spent by the development team.
Another influential component of the development team’s time investment was the time needed to learn the new technologies and processes. The first module created within the PDC project consumed a large amount of the timeline budgeted for this project. This time to learn (learning curve) what was needed influenced the timeline of the project and the ability to meet deadlines, which created tension with the grant resources. Merrill and the ID2 Research Group (1998) stated that multimedia instruction requires 300 person hours of development time for the creation of a single hour of interactive instruction, and as the “project complexity grows, so does the need to collaborate and to coordinate activities” (Spector, 2002, p. 31). This case study revealed that there are influential factors that determine the person hours needed to develop multimedia content. These factors include the learning time and experience level with the tools (Molenda & Boling, 2008), developing a leadership style (Litchfield, 2006), processes (Richey et al., 2007), partnership development (Kozma, 2000), and cultural conditions at the time of development (Greenhouse, 2013). The rapidly changing technology in the early part of the millennium brought broad changes to each new development of software. Each new software version required time to learn the new features. For instance, Adobe Photoshop changed versions five times from 2000 to 2006 (the PDC project timeline). The development team’s transition from a linear video format to an interactive multimedia format also involved a learning curve of the new technologies and selection of tools. Spender (2014) argued that this learning in the early stages leads to knowledge that can be important strategically. The UNIV-Dir on this project acknowledged, developing a partnership relationship, as Slater and Ravid (2010) confirmed, is a challenging and time consuming process.

There were tools and rules that influenced the development team’s time investment into the project, but this study found that the amount of time invested by the development team as a
whole was difficult to detect because of the complexity and uniqueness of this individual project. Many members involved in the design and development had multiple roles and responsibilities outside of this project. The UNIV-VideoDir was the only one who provided his actual workload to the video process (seen in Appendix X). His investment included 2,684 hours of pre-production, 480 hours of production, and 2,081 hours of post-production, totaling 5,245 hours, not including other team related time such as meetings. Additionally, developing the inter-organizational partnership influenced time investment based on how much the organizations needed to learn about each other and how much time issues such as trust building required. Also, the quality of the product influenced the amount of investment. To state it would take 300 person hours (Merrill, 1998) for developing multimedia would be similar to stating it would take 30 hours to build a vehicle, regardless of whether the vehicle was a bike, car, boat, or airplane. The quality and complexity of the object determines the amount of time investment. In my broad estimate, given the number of people involved and duration of this project, over 50,000 person hours were invested by the development team alone into the 75 hours of training that were produced. This does not include actors/talent’s and other administrative/partners’ participation. The list of the development team members is identified in Appendix X. The 50,000 hours is a broad estimate, but what this research revealed was that the development process took substantially longer in the beginning. This information can help guide future multimedia production in developing timelines for project management. There are early stage influences on product development that need to be considered. The initial process time of learning tools, rules, processes, and partners is dependent on prior knowledge.
Synergy

The P.R.I.D.E. Digital Curriculum product was partially funded by an FIPSE, Learning Anytime Anywhere Partnerships (LAAP) grant as a means to create partnerships in distance education. These “economies of scale” projects increase the number of learners and geographical areas served (King & Griggs, 2006, p. 53), but the development of large-scale instructional media is a social process joining multiple individuals with varied skill-sets. Larger product development projects have greater complexity from a technical stance and from a collaborative stance. King and Griggs (2006) concur that “building and maintaining a partnership can be extremely challenging” (p. 54) and organizations that have a prior history have a distinct advantage over partnerships that are newly formed. Baer and Duin (2004) also studied LAAP partnerships and found the project directors agreed that “developing or nurturing a partnership took longer than anticipated” (p. 6). Baer and Duin (2004) conducted a study in 2002 consisting of interviews with 25 directors of other LAAP projects and identified the factors that contributed to the success of the LAAP partnerships were “cooperation, collaboration and commitment of team and partnering institutions (p. 3). Other factors identified in their research were developing a common vision, mission and goals among partners. The key issues identified in their research reflect the importance of choosing the right partners for a long-term collaborative relationship. These findings coincide with the findings of the PDC study.

The division of roles became an issue during two activities: first, during the design process when an individual from the UNIVERSITY and an individual from the PARTER organization were both attempting to lead the group in different ways and second, there were personality conflicts between the multimedia technologist and the programmer during the creation process. The UNIV-DesignCoor had to step in to restructure the work process. Differing
personalities were also described in the literature as having an influence (Beheshtifar & Hesani, 2013; Slater & Ravid, 2010). Personality conflicts refer to different perspectives in motives, values, or styles of dealing with people (Beheshtifar & Hesani, 2013). “The particular, combination of personalities in a specific project may present unique problems,” as they did in both the design and development process of the PDC (Litchfield, 2006, p. 116). Beheshtifar and Hesani explained, “If both parties in a relationship have a high need for power and both want to be dominant in the relationship, there is no way for both to be satisfied, and a power struggle ensues” (p. 216). There were a couple personality conflicts both within the intra-organizational development and inter-organizational collaboration that needed to be addressed. Matching the right personalities helped create a positive design team. On the other hand, when organizational participants’ roles cannot be changed, there needs to be alternative methods of communication to minimize personality conflicts. Cooperation and collaboration takes time to achieve and staff need to put effort in to understanding and developing shared common goals (Slater & Ravid, 2010).

Overall, the collaboration of the inter-organizations brought a flattering complement and balance to the skills and contributions of each organization until the end. It was after the completion of the project when the inter-organizational collaboration broke down and the division of labor altered its original course. At that time, the PARTNER and UNIVERSITY had different perspectives in the marketing activity. Additionally, the partnership was failing due to other issues mentioned in Activity 10, Marketing. The division of labor, originally planned to have the PARTNER lead the marketing process, did not occur and the UNIVERSITY was placed in a position of handling the marketing on its own.
In the end, the two central partners in the project became disconnected. Their strategic intentions on marketing and the loss of trust were issues, but there were additional underlying concerns discovered in the study. In the beginning, the UNIV-Dir wanted to develop the skills of his staff in the new media. He found an opportunity in the LAAP grant but the requirements of the grant entailed a partnership. Hora and Millar (2011) caution against selecting a partnership based upon the grant funds:

The prospect of grant funding alters the picture, because the grant acts as a resource base that either brings different groups and individuals together in the first place or allows an existing partnership to expand or continue beyond its planned period. In the former case, a common outcome is a “marriage of convenience,” wherein partners join forces less out of a mutual recognition of one another’s value or commonly held vision for change than out of a need to satisfy funder requirements. (p. 56)

The UNIV-Dir also acknowledged the caution of generating a project from grant money. He stated, “if you’ve got grant money coming in and you’re giving out money, then, of course, everyone’s happy. At some point you have a product and then you want to start recouping some of that money then you should have things in place” (Personal interview with UNIV-Dir). After the PDC project was completed and the grant funds had dwindled, there needed to be a plan for how the partnership would be sustained. The marketing activity revealed a plan for dissemination was not developed or accepted into a shared vision.

The partnering organizations had previous relations as partners among the organizations, which helped in the networking and in locating partners, but the members of the development team within the UNIVERSITY were new to the existing partners. Additionally, the object of the overall activity, developing a distance training product, had different values. Each organization sought to create the PDC as a benefit to their organization. The UNIVERSITY felt the process of developing the training would increase the skills of the departments’ labor force. Warmington and Leadbetter (2013) suggested that “it may be argued that raising the quality of labour-power
is an intended outcome” (p. 72). The partner, however, wanted to provide supplemental, distance training. As the PARTNER-Dir stated, “it was a feather in their cap,” but the value was still in the original P.R.I.D.E. model of practice (personal interview with PARTNER-Dir). The development team was very proud of its creation, what you could call an authorship pride and, thus, considered the value of the material at a higher level than the partner. The PARTNER is one of the lead publishers and associations for the child welfare industry, and its value in the product would have an influence on the infiltration into the industry. In the next section I will discuss the perspective of the end users and the positive results from the Stage 1 study, but this section focuses only on the synergistic breakdown.

Last, the division of labor, roles and responsibilities need to be clearly defined (Sloper, 2004). The development team was a relatively small department and staff often had to wear multiple hats. For instance, the UNIV-DesignCoor was the head video director in the department, but when the UNIV-VideoDir for the PDC scheduled a video shoot, the UNIV-DesignCoor would step back and allow the UNIV-VideoDir to be in charge as the UNIV-DesignCoor assisted him. The partners in the inter-organizational collaboration also had roles and responsibilities.

Tensions always arise in defining the roles of the partners involved. When it is perceived that one partner is exerting more influence than another, there may be a level of mistrust, disengagement, resentment, lack of cooperation, and counterproductive attitudes. These dispositions will affect the outcome of the partnership. University professors must be careful not to project an attitude of superiority which can cause mistrust, anger, and lack of communication. (Slater & Ravid, 2010, p. 84)

During the original design activity, there were tensions based on the personalities, leadership styles, and roles between the UNIV-DesignCoor and PARTNER-ISME. Both were leaders within their organization and the struggle to lead the collaborative design and script writing activity caused extended delays on the first module.
On the other hand, there was positive synergistic energy between the partners during the remaining design and video production. As stated in the findings, the UNIV-VideoDir and the PARTNER-PSME collaborated together during the video shoots. The UNIV-VideoDir was in charge of the aesthetics of the video, and writing the script, but the video director respected the role of the PARTNER-PSME to provide constructive feedback to ensure the videos were authentic. Greenhouse (2013) stated that “some professionals may perceive their expertise and knowledge as superior to others, resulting in the loss of other expertise. Other professionals may feel threatened by a lack of understanding about what each professional does and may become overprotective of their particular tools and skills” (p. 409). This appeared not to be the case between the UNIV-VideoDir and the PARTNER-PSME because of a respect for and value of the contribution each member gave to the activity.

**PDC Implementation**

The Stage 1 study at the beginning of the PDC implementation, with the ASSOCIATION, had 477 participants, which included trainers, staff, and end users. The original PDC design was focused on training the end users. The study revealed that the purpose of the training materials could serve a broader audience than anticipated. End users suggested the training would be useful for extended family members, such as adult children, aunts/uncles, and grandparents. They also acknowledged that the distance training had learner-centered benefits like ease of access, reviewing the material at a later date, and scheduling around the foster/resources family’s needs. Additionally, the trainers and staff members identified that the PDC would be useful for training all staff members. The majority of the staff members stated they would be supportive of an agency mandate for using the PDC training as professional
development. Additionally, trainers felt the materials in the PDC could be used for face-to-face classroom training. These findings indicate that the intended audience of the PDC expanded beyond the original intent of solely training foster/resource families.

The participants were asked to rank their preference for method of training. The results found that the end user’s preferences were ranked in order: 1) Multimedia training (similar to the PDC), 2) classroom (face-to-face), 3) online (similar to an educational course), 4) video, and coming in last 5) self-paced training. The overall consensus was that the PDC product should supplement and provide an alternative means for training and not a replacement. Another training approach may apply a flipped classroom model in which learners complete the PDC distance training prior to class time (Bergmann & Sams, 2012). “The instruction that used to occur in the classroom is now accessed at home via videos and interactive lessons while time in the classroom is reserved for working through problems, advancing concepts, and engaging in collaborative learning” (Holmes et al., 2015, p. 216). McDonald and Smith (2013) stated flipped classrooms help learners who are extremely busy; enable learners who struggle with concepts to stop, play and replay the content; and content topics have a higher level of transparency and consistency across multiple instructors for professional development sessions. The PDC Stage 1 study also found busy schedules and the ability to revisit the material at one’s own pace as advantages to the PDC.

This study used a 5-point Likert scale to rank questions from 1 = strongly disagree to 5 = strongly agree on several questions pertaining to the participants’ perception of quality toward the instructional design, aesthetic design, and ease of use. Most of the questions pertaining to these qualitative traits were calculated above 90%. The highest disagreement was on the CD being easy to use, which came at 6% disagree, whereas 88% agreed it was easy to use. The
disagreement also may have been attributed to the lack of experience with CD training, as only 6% of participants stated they had prior use in CD training. Overall, the high perception of the instructional effectiveness, relevant information, appropriate balance and logical sequence of information, and various objects within the training coincides with the participants’ responses recommending the PDC for training resource/foster families (92%), training staff (88%), and overall satisfaction of the PDC ($n = 407$, 94% satisfied, 3.6% dissatisfied).

While the overall impression of the CDs was quite high, there were areas of improvement detected in the systematic process of distance training. The majority of the trainers, staff, and end users felt that administrative support should be evaluated and adjusted for this method of training. Participants suggested online tools (discussion boards, chats, etc.), follow up meeting with case worker or trainer, and a system for providing feedback from others, and an orientation to the training. The trainers and staff both identified a need to have time budgeted into their work schedule for the training. In a follow-up interview two and one-half years after the Stage I study, the ASSOC-Lead Trainer noted that they had developed a couple webinars for the agencies, which she stated were well received. This could be an area in which the UNIVERSITY’s development team might consider supporting agencies. Additionally, providing guidelines for implementation, a universal system for agencies’ handling of the distance learning CDs and technical assistance can assist in the successful implementation of the PDC. The ASSOC-Trainer also stated that marketing materials from the development team would be beneficial to pass on to the agencies.
Significance of Study

Activity systems are linear over time and are regarded as never fixed but undergoing continuous change. This is why activity theory "can only be understood in the context of historical processes that led to its current state" (Roth & Tobin, 2004, p. 167). The results of these findings reflect a thick description of an innovative time in educational technology when the technological capabilities of digital media were still in its infancy. Pidduck and Carey’s (2006) results revealed a complexity regarding partner selection and gaps in the research on the partnership process. Social networks and communication remain an important part of selecting and identifying partners. This study revealed in Activity System # 1, the process of identifying and selecting the partnerships, that understanding multidisciplinary collaborations is an essential element for policy development, program success, and improving outcomes. In an age in which universities are dealing with budget cuts and methods of producing more with less staff, “it’s important to learn from the lessons that emerged from these FIPSE sponsored partnership projects” (King & Griggs, 2006, p. 48). This paper presented ten activities to paint a detailed image of the partnership collaboration in the development of educational technology.

The literature review in Chapter 2 provided research on different aspects of instructional technology and the use of activity theory to investigate the field. In the next four sections of this chapter, I identify how this study fits into the literature.

Historical Development of Instructional Technology

The significance of this study in the historical development of instructional technology is the reflection of how the development team’s role in the field has changed over time. Originally the role of the instructional developer was the frontrunner for educational technology, but over
time, the role, as revealed in the literature, gradually was reduced to technical aspects of the creation process. The majority of research on design and development focuses on the designer’s role or perspective (Richey & Klein, 2014). This shift in perspective can and appeared to impact the perspectives of the developers. Are the developers, the creative producers of the materials, considered partners in the field or mere service providers? Or are the content experts and designers considered clients? As the hierarchy of development team progressed further down the ladder in the PDC project, staff felt they were working for a client rather than with a partner. Daniels and Warmington (2007) found the notion of labor-power and subject’s positioning can influence identity. Roles need to be clearly identified and the positioning of the instructional developer explicitly explained.

Furthermore, it was mentioned several times throughout the study that the changing paradigm in this case study was one of the motives for the collaboration and activities. As the literature review in the historical development of instructional technology shows, this longitudinal case study reflects an era during which a paradigm shift was occurring. Between 1994 (Seels & Richey, 1994) and 2008 (Kim et al., 2008; Merrill & Wilson, 2007; Molenda & Boling, 2008) the paradigm shift changed from CAI to web-based learning environments and e-learning. The data from this PDC study identified several contradictions and tensions due to the paradigm shift, such as the need to learn new skills, the lack of resources in the new media development, and the uncertainty of shifting media formats in a rapidly changing technological era. Thus, the PDC study provides some new light on the impact within the historical, cultural development of instructional technology on perspectives of the roles by instructional developers and the occurrence of activities during paradigm shifts.
Instructional Design and Development of Multimedia

There have been several advances in the research of instructional design models over the past few years. Branch and Kopcha (2014) identified that while hundreds of instructional design models have been published since the 1960s, distinctions among them are recently being seen. In their latest publication on instructional design models, Branch and Kopcha identified these distinctions in instructional design models by their conceptual tools to visualize, direct and manage the processes of creation. They acknowledged five general models of the instructional design process: 1) rectilinear portrayal, 2) curvilinear portrayal, 3) nested portrayal, 4) concurrent portrayal, and 5) recursive portrayal (pp. 80–82). The problem with the instructional design model is that they focus on the broad scope of instructional design and development. Branch and Kopcha acknowledged that the terms instructional design and instructional development are used interchangeably in the literature and are often considered synonymous. Their position on this topic is “that instructional design is different from instructional development. Design refers to the comprehensive process from beginning to end, while development specifically refers to creation activities within the overall design process” (p. 78).

The problem the PDC encountered at the beginning of the PDC project was that the partners did not have much information in the literature to guide them.

Assigning too little attention to the media development processes may discourage the reflective thinking of designers about which media best conveys the best instructional strategies needed to achieve the instruction objectives. In other words, the focus of media effects correlates to the focus of design and development. An imbalance of attention to either design or development may lead to an imbalance in the whole structure of educational technology development. The literature in the field is predominantly written by academics whose attention focuses on the theoretical aspects of educational technology with little impact from practicing developers. (Gustafson & Branch, 2007, p. 13)
Visscher-Voerman and Gustafson (2004) argue that "activities from traditional ADDIE models are reflected in practice, but that the design approaches and strategies designers use are far more varied and selective, and also more cyclic and integrated" (p. 72). Merrill, Li, and Jones (1990) suggested benefits of an effective model can mean savings of development time and resources. Because of the broad sense in this area, the models do not provide specific events and considerations that actually occur during the development stage. Reeves, Herrington and Oliver (2004) asserted that educational technology is a design field and its goal should "inform future development and implementation decisions" (p. 62). Thus, this research provided new insight into the design and development of a large-scale, inter-organizational collaboration. Gustafson and Branch (2007) contend that "while ADDIE illustrates the conceptual components of ID, there remains a need to indicate how to practice the ID process" (p. 12). Little detailed attention is evident in the research regarding the product development stage of instructional development (Molenda & Boling, 2008). Molenda and Boling suggested this is probably because "authors of ISD models are not themselves expert in the various arts of production and hesitate to spell out these processes in detail" (p. 113). This longitudinal case study did not focus as much on the specific technologies but on the human interaction of inter-organizational collaboration through the team’s communication, influences, technology use, tools, rules, processes, evolution, and synergistic aspects of inter-organizational collaboration.

Most technology research is focused on a limited sample (mostly college students) with a restricted set of one-shot research questions. We know little about evolutions in technology use or about developmental characteristics in the transition from novice to expert. There is a need for more longitudinal studies that can shed light on this evolutionary perspective. (Lowyck, 2008, p. xv)

This study allowed an inside view into an authentic instructional development project. It is significant to the field because of the lack of literature relating to instructional development
practices. Gustafson and Branch (2007) claimed that we need researchers who are also practicing developers, noting that they are hard to find because it is the academics who conduct research.

The problem I see with the educational technology field is that too much emphasis has been placed on theories and models for instructional design and too little literature pertains to the actual doing, developing, or creating of instructional products. Branch and Kopcha (2014) acknowledged that instructional design is different from instructional development but claim it is out of the scope of their chapter. Richey and Klein (2014) talked about the gap in design and development research and that the “field has not sufficiently employed empirical methods to facilitate our understanding” of the processes (p. 142). Tracey and Boling (2014) also emphasized the need of research to identify and describe the conceptual tools actually used (p. 658) while preparing instructional designer students, and Branch and Kopcha (2014) stated, “Specific applications of procedures necessary to actually develop teaching and learning materials require more defined models” (p. 77).

There is a need to reconstruct the theoretical framework for educational technology, and there is an associated need to reconceptualize its academic scope and purpose. Supporting learners and the learning process with appropriate technologies is the fundamental belief of educational technology. Therefore, the design, development and application of technologies capable of such a role should be within the sphere of this discipline, where learning and technology intersect, and numerous other disciplines mingle in creative ways. In this theater of interaction and hybridization, there is both chemistry and synergy, and participants from diverse academic backgrounds and researchers of various segments of educational technology cooperate productively. However, due to their differences in training, skills, and values, these experts view technologies with different lens and may study problems from different perspectives and interest themselves in different dimensions of the same problem. (Ren, 2014, p. x)

Gustafson and Branch (2007) contend that researchers who can perform the dual role of both instructional developer and researcher have a unique opportunity to contribute to the educational technology field. This research has found this need is crucial because designers and developers think differently and have different approaches and contributions to the instructional
development. This case study is not meant to be generalized. It does, however, provide descriptive insight into one development team. A summary of the instructional developer model created based upon the PDC project is seen in Figure 16. Unlike most instructional design models, this model is from the perspective of the developer.

The instructional developer model may at first sight appear to be similar to other instructional design models. What makes it different is that the focus of attention on the various activities is from an instructional developer’s perception. For instance, an instructional designer will look at evaluation in a different light than an instructional developer. The instructional developer is not evaluating the effectiveness of the material compared to a face-to-face
environment (although they would appreciated that value). The developer in the PDC case wanted to make sure the product was heading in the right direction and the development team also saw value in an external evaluation because it validated their work. The developers noticed a change in the inter-organizational partners after the first evaluation was conducted, in that the inter-organizations placed more trust in the development team.

In this instructional development model created from the PDC activities, there are four themes: 1) Determination, 2) Design, 3) Development, and 4) Diffusion. This particular case study was a partnership based on grant funding. The determination theme involved writing a grant proposal, gaining buy-in from the inter- and intra-organizational members, and determining a shared vision for the group. The design theme had a unique perspective from the developer’s standpoint. The group participated in marathon meetings to write the script. Given that this was a collaborative activity, meetings were much more effective than trying to design the interactive media through emails and phone calls. The development team did not originally expect to do much design because the material was already developed in a text-based training manual. However, the development team did need to redesign to accommodate the new visual media, taking into account issues such as ethnicity, gender roles, clothing, and tone of voice that were likely not addressed in the text-based training manual. The developer also looked at the design process from a communication view in setting screen codes (i.e., how the screens would be identified and documented with the team? How non-linear events would be documented in a sequential script?). The third theme was the actual creation process. It examined the process as activities and division of tasks with a storyboard sorting the elements of each screen. The fourth theme appears to be the last in a chain of events, but contrarily it is a cyclic connection in which
all themes in the process are visited often. The diffusion theme required maintaining a vision of the end objective for the developer throughout the whole process.

Planning for a successful design means beginning with the end in mind. You should have a concrete picture of what success will look like for your learners, and should evaluate your instruction against that benchmark throughout your project. The evaluation process is both formative (ongoing during design, development, and implementation activities) and summative (appraised after completion and implementation of the instruction). For example, when an artist steps back to analyze a picture, she is in the process of painting, she is conducting a formative evaluation. (Larson & Lockee, 2014, sec. 477)

Multidisciplinary perspectives are essential characteristics for success within the field (Liu, Horton, Jaejin, Kang, & Rosenblum, 2014). It is important for the field of educational technology to look at instructional design and development from multiple perspectives.

The Social Process of Instruction

Instructional designers and subject-matter experts work in unique teams that can involve working with members outside their organization and environment (Howell et al., 2003; Litchfield, 2006). This study found that cultural environments influenced the design and production process, particularly the differences in the inter-organizational and intra-organizational workplace cultures (Larson & Lockee, 2009). This research contributes to the growing trend in training collaboration for child welfare agencies and local agencies (Thornton, Okundaye, & Harrington (2007).

Current students of educational technology receive little training on how to develop new media, as the focus remains on research (Kim et al., 2008, p. 813). A perception exists that instructional designers and technologists should know how to use technology (Kim et al., 2008; M. D. Merrill & Wilson, 2007), but this is not always the case, as educational technology programs primarily teach students research concepts. A main cause of misunderstanding is that
people from different environments perceive things differently (Enquist & Makrygiannis, 1998). A case study conducted by Durham and Arrell (2007) identified that the cultural differences between institutions are significant when designing and developing collaborative material. This study also agrees with those findings.

Activity Theory for Examining Collaboration

In this study, the activities of developing the PDC were influenced by the era. Educational technology was rapidly changing from video to interactive, multimedia formats. Bruner (1990) stated that the distributed consciousness of the mind is not isolated in the present, but it also takes meaning “from the historical circumstances that gave shape to the culture” (p. 138). In other words, the world people live in is influenced by the past generations’ use, creation and manipulation of artifacts. Both Bruner and Vygotsky believed that cognitive processes could not be understood without “reference to the social and cultural context within which such development is embedded” (Driscoll, 2005, p. 247). The rapid change to Internet and digital technologies changed the manner in which tasks were conducted but still evolved from past experiences of the development team. This research confirms that decisions made on the PDC project were influenced by historical conditions. Using the assumption of a CHAT methodology to detect and understand historical changes in characters coincides with the research to “capture the emerging possibilities and new forms of learning” (Daniels & Warmington, 2007, p. 371).

The advantage of breaking down the activities of a large scale project is the ability to connect the dots or where tensions and contradictions develop. “The diversity in the background, history, interests and traditions of a community as well as rules and division of
labor cause the activity systems to have a dynamic structure with problems and contradictions” (Karakus, 2014, p. 153). Karakus stated, “The multi-voiced structure of activity systems enables us to see how the negotiation between or within the components is achieved over time” (p.153). Tracking the evolution enables researchers and practitioners to gain insight into to long-term consequences of actions. Thus, this study provides an example of how activity systems analysis can examine and connect the multiple networks of activities into a connect-the-dots web of larger activities. It is, however, only one study that cannot be generalized. As many researchers have noted, the educational technology field needs more thick description case studies of practitioners in authentic environments. Generating multiple detailed case studies can reveal general patterns that individual case studies cannot provide.

Limitations

The data collection presented here comes from multiple collection strategies. Using multiple data collection approaches strengthens the data and corrects some of the deficiencies from any one source of data. Patton (1987) explained that “building checks and balances into a design through multiple data collection strategies is called triangulation” (p. 60) Denzin (2009) asserted that “multiple methods must be used in every investigation” because single methods cannot “completely satisfy the demands of interaction theory or can never completely reveal all of the relevant features of empirical reality necessary for a theory’s test or development.” (pp. 26 - 27)

Because this was predominantly a qualitative study, internal validity threats exist for mortality, subject characteristics and instrumentation. Some steps to offset these threats was to provide time for the interviewee to think about the events and review their statements at a later
In subject characteristics, the subjects may react by means of their recollection and interpretations to make themselves or their part in the research appear of more value. Furthermore, there may be a threat of instrumentation if the questions seem misleading or ambiguous. Several techniques were used in this study to offset these threats. The triangulation method of comparing multiple data sources was one such technique. Another technique, as mentioned, was enabling the interview participants to review their comments for accuracy. It is believed that the multiple sources of data collection and the iterative processes of data analysis provided internal validity to the methodology of this study.

Recommendations for Future Research

This project contributes to the literature on instructional development within inter-organizational collaboration. As many researchers have noted, the educational technology field needs more thick description case studies of practitioners in authentic environments. Generating multiple detailed case studies from a developer’s perspective can reveal general patterns that individual case studies cannot provide. Additionally, this study specifically examined the process through the developer’s perspective and found differences in perspectives from the instructional designer to the instructional developers. It would be beneficial to have future research examine the different perspectives of designers, clients, developers and contributors to detect methods for improvement in communication within teams.

Furthermore, the findings in the Stage 1 study indicated the majority of trainers and staff felt there was no feedback system for the end users’ questions, but the users felt they already knew a system for asking their questions. This may imply that users have developed a non-structured feedback system worth investigating in future research. Additionally, the assessment
files collected on the participants’ computers during the PDC training revealed a significant difference in perception to its purpose. Only 5.7% of the end users felt these files should be shared with the trainer, but the trainers and staff strongly favored viewing the files (82.2% and 77.3%, respectively). This could be further researched to determine if the embedded assessments should serve as a self-assessment or a comprehensive assessment for trainers to review with the resource families.
REFERENCES


Bergmann, J., & Sams, A. (2012). *Flip your classroom: Reach every student in every class every day*. International Society for Technology in Education.


APPENDIX A

UNIVERSITY SPONSORED RESEARCH AGREEMENT
Sponsored Research Agreement

This Sponsored Research Agreement (the “Agreement”) is made between Robin Green (the “Researcher”), a doctoral student at Northern Illinois University and DNDC (the “Sponsor”), a public higher education institution in the state of Illinois, county of the United States of America, and with place of business at [address].

Recitals

A. The Sponsor is a public higher education institution.
B. The Researcher is a doctoral student at Northern Illinois University pursuing research in the area of collaborative development of an instructional multimedia product entitled PRIDE Digital Curriculum (herein referred to as PDC).
C. The Sponsor is willing to sponsor such research.
D. The Sponsor desires to obtain certain rights to the data collection resulting from this research.
E. The Researcher is willing to grant Sponsor certain rights to use and publish results from this research.

1. Copyright Assignment

(a) The agreement shall be effective April 1, 2010.
(b) The Researcher hereby grants the Sponsor a non-exclusive right to use, copy, and distribute materials described in Attachment A (the “Research Project”) and the collective data (the “Data”), in whole or in part, and to incorporate the Research Project and Data (collectively “the Works”), in whole or in part, into other works (the “Derivative Works”) for Sponsor’s marketing and distribution of the PDC.
(c) Sponsor and any representative of the Sponsor may not characterize the Research Project as its own at conferences, consortiums and any other public presentation without written consent from Researcher.
(d) All right, title and interest in the Works, including without limitation, any copyright, shall remain with the Researcher. The Researcher is for all intent and purposes considered the author.
(e) The Researcher shall own the copyright to the Raw Data.
(f) Sponsor shall own the copyright to its Derivative Works.

2. Research Program

(a) The Researcher will provide the means and technology to conduct the research program described in Attachment A (the “Research Project”).
(b) The Sponsor may grant access to, or provide, facilities, equipment and/or materials (collectively “University Resources”) for performance of Research Project and conducting interviews of staff members in the division of [name].
(c) The Researcher is an independent contractor and “Principal Investigator”.
(d) The Research Program shall be carried out through and including December 31st, 2011. The parties may extend this date under mutually agreeable terms.
(e) Sponsor understands that the Researcher’s primary mission is education and the advancement of knowledge and the Research Program will be designed to carry out that mission. The Researcher does not guarantee specific results.

3. Compensation

Sponsor and Researcher shall waive any monetary compensation from the other party in exchange for services as described within this Agreement.

4. Communication and Reports

(a) The Researcher will make up to 1 oral report and 1 written report summarizing the work completed.
(b) The Researcher shall submit a comprehensive final report by December 31st, 2011.
5. Publication

(a) The Researcher has the right to publish or otherwise publicly disclose information gained in the course of the Research Project. This may include being added to other collective works.
(b) Any proceeds from the original work of the Researcher will be the sole property of the Researcher.
(c) The Sponsor has the right to publish or otherwise publicly disclose information gained in the course of the Research Program for marketing and distribution of the PDC in publications of print and electronic form.
(d) The Researcher maintains “first right” to publication.
(e) The Sponsor must credit Researcher for data collected.

6. Transfer of Rights

(a) The Researcher shall maintain the right to transfer or assign rights to another third party.
(b) Sponsor may not transfer their rights.

7. Confidential Information

(a) Sponsor agrees to the use of university name pertaining to research in future publications and releases confidentiality.
(b) Sponsor agrees to release documentation of the PDC development, including meeting notes, financial records, screen shots of the copyrighted PDC material and any other development and implementation records available and collected through the initiation of the PDC project for purposes of publication and part of this research.
(c) The Researcher shall withhold raw data pertaining to any identifiable information that may be revealed during the Research Program of individual participants. The Sponsor shall receive this data in a collective amount.

8. Term and Termination

(a) This agreement shall remain in effect for the life of the copyright.

---

Researcher
Signature: [Signature]
Print Name: Robin Wyatt Greenly
Date: 4/19/2010

[Position: Division Director]
APPENDIX B

ASSOCIATION SPONSORED RESEARCH AGREEMENT
Sponsored Research Agreement

This Sponsored Research Agreement (the "Agreement") is made between Robin Green (the "Researcher") and [Redacted] (the Sponsor), a child welfare organization in [Redacted].

Recitals

A. The Sponsor is a member-based organization that represents Children [Redacted].
B. The Researcher is a doctoral student at Northern Illinois University pursuing research in the area of a multimedia distance learning program entitled Foster PRIDE Digital Curriculum.
C. The Sponsor is willing to sponsor such research.
D. The Sponsor desires to obtain certain rights to the data collection resulting from this research.
E. The Researcher is willing to grant Sponsor certain rights to use and publish results from this research.

1. Copyright Assignment
   (a) The agreement shall be effective May 14, 2007.
   (b) The Researcher hereby grants the Sponsor a non-exclusive right to use, copy, and distribute materials described in Attachment A (the "Questionnaires") and the data collection (the "Data"), in whole or in part, and to incorporate the Questionnaires and Data (collectively "the Works"), in whole or in part, into other works (the "Derivative Works") for Sponsor’s internal use within the agencies.
   (c) All right, title and interest in the Works, including without limitation, any copyright, shall remain with the Researcher. The Researcher is for all intents and purposes considered the author.
   (d) The Researcher shall own the copyright to the Raw Data.
   (e) Sponsor shall own the copyright to its Derivative Works.

2. Research Program
   (a) The Researcher will provide the means and technology to conduct the research program described in Attachment A (the "Research Program").
   (b) The Researcher is an independent contractor and "Principal Investigator".
   (c) The Research Program shall be carried out through and including December 31st, 2007. The parties may extend this date under mutually agreeable terms.
   (d) Sponsor understands that the Researcher's primary mission is education and the advancement of knowledge and the Research Program will be designed to carry out that mission. The Researcher does not guarantee specific results.
3. Compensation

Sponsor and Researcher shall waive any monetary compensation from the other party in exchange for services as described within this Agreement.

4. Communication and Reports

(a) The Researcher will make up to 1 oral report and 1 written report summarizing the work completed.
(b) The Researcher shall submit a comprehensive final report within 60 days after completion of the data collection.

5. Publication

(a) The Researcher has the right to publish or other wise publicly disclose information gained in the course of the Research Program. This may include being added to other collective works.
(b) Any proceeds from the original work of the Researcher will be the sole property of the Researcher.
(c) The Sponsor has the right to publish or other wise publicly disclose information gained in the course of the Research Program within internal publications in print and electronic form.
(d) The Researcher maintains “first right” to publication.
(e) The sponsor must credit Researcher for data collected.

6. Transfer of Rights

(a) The Researcher shall maintain the right to transfer or assign rights to another third party.

(b) Sponsor may not transfer their rights. Sponsor may extend and assign their rights to other participating agencies within the [redacted] per a written request based on the same conditions set forth here.

7. Confidential Information

(a) Each party shall use reasonable efforts to prevent the disclosure of participants' confidential information.
(b) The Researcher shall withhold raw data pertaining to any identifiable information that may be revealed during the Research Program. The Sponsor shall receive this data in a collective amount.

8. Term and Termination

(a) This agreement shall remain in effect for the life of the copyright.

Researcher Signature: ______________________ Date: ________________

[redacted] Signature: ______________________ Date: ________________
APPENDIX C

IRB APPROVAL 2007
April 26, 2007

MEMORANDUM

TO: Robin Greaney  
Department of Educational Technology, Research, & Assessment  
519 Edgewater Dr.  
Mooresville, IL 60447

FR: Greg Wans, Chair  
Institutional Review Board #

RE: Graduate student research involving the use of human subjects for the project titled  
Multimedia development and implementation

This is to inform you that your above-named research project has been approved by Administrative Review as exempt from the Code of Federal regulations (45 CFR 46) for the protection of human subjects. The rationale for exemption is section 46.101b, paragraph 2.

Because this research project has been designated "exempt", this approval is final. You will not need any further review of this project unless you decide to modify it. If you intend to change the procedures, subject pool, or otherwise to modify the protocol so that it would no longer qualify as exempt, you will need to contact the Office of Research Compliance (researchcompliance@niu.edu) to obtain approval of the changes.

It is important for you to note that as a research investigator involved with human subjects, you are responsible for retaining any signed consent forms obtained from your subjects in a secure place for a minimum of three years after the study is concluded. If consent for the study is being given by proxy (guardian, etc.), it is your responsibility to document the authority of that person to consent for the subject. The committee also recommends that the informed consent include an acknowledgment by the subject, or the subject's representative, that he or she has received a copy of the consent form. In addition, you are required to promptly report to the IRB any injuries or other unanticipated problems involving risks to subjects and others.

Please accept my best wishes for success in your research endeavors.

GW/pew

cc: L. Ltolkehens  
C. Law  
ORC (#2798)
APPENDIX D

IRB APPROVAL 2010
October 4, 2010

MEMORANDUM

TO: Robin A. Wyatt.
Department of Educational Technology, Research & Assessment
414 B Flanagan Circle
Mfacebook, IL 60447

FR: Marilyn Looney, Vice Chair
Institutional Review Board #2

RE: Graduate student research involving the use of human subjects for the project titled *An activity theoretical perspective on inter-organizational collaboration in instructional technology development and implementation*

This is to inform you that the proposed changes to your above-named previously approved research project have been approved by expedited review. The changes to your application will be brought to the attention of the IRB at its next meeting; however you may continue data collection.

**The approval anniversary date for this project remains July 19, 2011.** If your project will continue beyond that date, or if you intend to make modifications to the study, you will need additional approval and should contact the Office of Research Compliance for assistance. Annual review of the project will be necessary until you no longer retain any identifiers that could link the subjects to the data collected.

It is important for you to note that as a research investigator involved with human subjects, you are responsible for retaining the signed consent forms obtained from your subjects in a secure place for a minimum of three years after the study is concluded. The committee also recommends that the informed consent include an acknowledgment by the subject, or the subject’s representative, that he or she has received a copy of the consent form. In addition, you are required to promptly report to the IRB any injuries or other unanticipated problems involving risks to subjects and others.

Please accept my best wishes for success in your research endeavors.

ML/KA

cc: L. Yamagata-Lynch
Institutional Review Board members
ORC #HS10-0237

Northern Illinois University is an Equal Opportunity/Affirmative Action Institution.
APPENDIX E

AGENCY PARTICIPATION GUIDELINES
FOSTER PRIDE DIGITAL CURRICULUM PILOT PROJECT
AGENCY PARTICIPATION GUIDELINES

Thank you for your agency's agreement to participate in this important research project. The purpose of this document is to provide participation guidelines that will articulate the rationale for the project, the research objectives, project timelines, specific agency participation steps and the supports that will be available to agencies and participants throughout the project.

Background
The Foster PRIDE Digital Curriculum (FPDC) is a new innovative professional development component of the PRIDE program, developed to contribute to achieving the overall PRIDE goal of supporting and retaining competent resource families. This CD-ROM version is a derivative of the PRIDE in-service curriculum that has been available in print book form, with some updates and modifications. The initiative was funded by the U.S. Department of Education's "Learning Anytime, Anywhere Program", designed to provide educational opportunities for individuals who are unable to easily access traditional methods of training. The grant involved a partnership between [redacted] University in [redacted], leaders in distance education, the [redacted] and six public state child welfare agencies.

[redacted] entered into a two year (2006 to 2008) licensing agreement and research partnership with [redacted] University [redacted] that will explore how the Foster PRIDE Digital Curriculum (FPDC) resource could be used to address some of the learning needs of resource families as well as its potential relevance for agency staff groups. This undertaking is being funded by the [redacted] of Children and Youth Services as an important element of the [redacted] Transformation Training and Implementation Project. A unique international research project, the FPDC initiative outcomes will be of benefit to users of the PRIDE program worldwide.

All [redacted] currently have copies of the nine PRIDE In-service curriculum both in hard copy and digital format. Several agencies have trained many of the in-service classroom modules as well as experimenting with some digital modules.

Project Description
The FPDC pilot project is a component of the broader [redacted] commitment to test and [redacted] the PRIDE Family Development Planning steps of the PRIDE Model. The overall intent of the project is to enhance provincial awareness of the FPDC resource and develop best practice learning approaches for potential FPDC user groups.

The project has a number of objectives, as described below.

The FPDC pilot project will:
1. Research user perceptions about classroom based learning compared to distance learning
2. Research how the FPDC can be used to meet the learning needs of a variety of groups within the child welfare field - resource families, PRIDE trainers, protection staff, children services staff and adoption staff
3. Research how the FPDC may be useful in augmenting classroom learning
4. Identify technological challenges with the FPDC product
5. Identify user access issues
6. Identify how agencies can manage the FPDC learning program in order to maximize the return on
the resource investment by exploring how to:
  o incorporate this approach with existing agency professional development initiatives
  o build awareness of the approach
  o make the resource available to potential users
  o prepare resource staff for their roles and responsibilities related to supporting the
    successful use of the program
  o establish a tracking system to monitor and support the use of the FPDC

7. Identify what supports are needed to support optimal use of this distance learning product:
  o technical support, (electronic tracking, e-mail capacity)
  o written manuals such as the trainer and user guides
  o staff support

8. Identify what processes can be implemented to support user transfer of learning
  o group learning
  o support/follow up from resource worker
  o other learning opportunities, e.g. reading, skill practice

Project Timelines
  • Agencies confirm their commitment to participate in the project by April 20
  • Agencies identify volunteer project participants (staff and resource parents) and the
    modules they will use by May 1, on the project tracking tool provided by [redacted]
  • Participants take the agreed upon FPDC module and complete the research instruments
    from May 14 to June 16, 2007
  • [redacted] reconvenes Advisory group June 19, 2007 to discuss preliminary results
  • Pilot results are tabulated, analyzed, recommendations formulated by August, 2007
  • Draft report prepared for review by the Advisory group for September 2007
  • Recommended product enhancements and technology issues resolved by October
  • Project report finalized and distributed to field October 2007
  • Agencies place orders for FPDC set to meet their needs beginning November, 2007
  • Winner of Laptop announced December 2007

Methodology
All [redacted] have been invited and encouraged to participate in the pilot project. To be a
valid representational research project for the province, 700 completed surveys will be required. Your
communication and promotion of the pilot project with your staff and resource families prior to May 14,
2007 will contribute to us attaining the numbers we hope for. All staff and resource parents who
express an interest in participating will receive a FPDC CD along with the invitation to participate sheet
that contains the website with the link to the surveys. Each individual who receives an FPDC CD will
complete the module and the electronic survey. Given the [redacted] partnership with [redacted] University, including the commitment to their doctoral student Robin Greaney who is the lead
researcher, it is essential that agencies follow through with their participation pledge.

Three research instruments have been developed, specific to each target group: resource parents,
trainers, and other staff members. The instruments were pre-tested by volunteer agency participants
and have received approval by the [redacted] University.

Specific project steps are as follows:

1. Agencies are asked to identify a Project Lead who will function as the link with
   [redacted] and Robin Greaney and manage the internal operations of the pilot project (See attached FPDC
   Agency Lead Activity List).
2. All staff and resource families are encouraged and invited to participate in the pilot. Random selection of participants is integral to ensure the integrity of the research results.

3. All participants must be voluntary.

4. Agency Leads will distribute a FPDC to each participating staff and/or resource family who declares their interest. This group becomes the agency’s pilot population.

5. Participants should receive a list of the in-service modules and select the FPDC CD according to their greatest interest or need.

6. All participants will receive their FPDC CD by May 14 and will have until June 16 to complete the learning requirements contained with their selected FPDC CD and to complete the survey.

7. Pilot Agency Leads will track via an electronic tracking tool provided by OACAS (to be sent later this week) of who receives which CD.

8. When participants receive their 3 hour FPDC CD, they will also receive an information letter from the researcher, Robin Greeney and an electronic link that will direct them to the electronic survey.

9. All participants require access to a computer with a CD drive and a sound card.

10. Time required for participants to complete the survey is approximately 30 minutes. Total participant time in this research is approximately 3 hours and 30 minutes.

11. All participants who submit their completed electronic surveys are entered into a contest with the winner receiving a new laptop. The winner will be announced to all participating agencies by December 1st, 2007.

12. Participate in a focus group consisting of Pilot Agency Lead from your region to be scheduled for the end of June.

Project Supports
Participating agencies will be supported through the pilot process by the [redacted] project lead, [redacted] in collaboration with [redacted] University. [redacted] can be contacted at [redacted] or by email at [redacted]. While participants are completing their survey, they may obtain support directly from the project researcher, Robin Greeney. Her contact information will be contained within the survey.

Once agencies have identified their number of participants, [redacted] will provide additional sets of the CD’s to ensure access to the resource. As the CD’s are generously on loan from [redacted] University for the purpose of the project, agencies will be required to return the CD’s to [redacted] following the completion of the pilot. The end goal is that there will be only one updated version of the CD sets in circulation by the fall of 2007.

Agency Leads and participants may find it helpful to access the FPDC website where information on the FPDC product may be reviewed and other supports are provided. This site can be obtained at http://www.fosterpride.govst.edu/.
Project Outcomes
A report, based on empirical evidence and analysis will be available to all CAS's to guide them in optimal implementation of the FPDC in-service learning program that will be include:

- Recommendations to achieve optimal learning experiences according to the user, i.e. Each staff group (protection, children's service and resources) and each resource parent (foster, kin, adoptive)
- Transfer of learning tools and supports will be identified
- User statements of their experience that may encourage agencies to implement

As well, to the extent possible within resources, some aspects of the FPDC will also be ___g. the CD cover jackets may be tailored to ___language.
APPENDIX F

INVITATION TO PARTICIPATE – STAGE 1 STUDY
Dear FPDC Questionnaire Participant,

Thank you for participating in the research for the Foster PRIDE Digital Curriculum (FPDC) modules. We are conducting this research to gather information about the wants, needs, and perspectives of the new distance learning training material developed for child welfare agencies.

As a team member within the agency, your experience gives you a unique knowledge of the requirements and considerations for training resource families in addition to an inside perspective of your own learning needs.

This questionnaire is being conducted with over 50% of respondents to examine the training benefits of the FPDC product and for the partnership between the University and University (developers of the FPDC) to offer recommendations for its optimal use. The research data is being gathered and analyzed by an independent researcher, Robin Greaney, Doctoral student candidate. The results will be provided back to each agency for continual improvements in training and a report with recommendations will be available to every.

Description of Item:
Foster PRIDE Digital Curriculum (FPDC) consists of 9 modules, with 1 to 4 Sessions per module and each on a separate CD.

Procedure:

After you have viewed one of the modules, please participate in a questionnaire about your thoughts on the training material.

The online questionnaires are located at www.inclusivetraing.com. Here you will find three separate surveys: one for PRIDE Team Trainers, one for resource families and one for staff. Please select the link for that reflects your role within the agency.

Your participation in this questionnaire is optional and voluntary. In recognition and appreciation of your time and assistance, one participant will be drawn randomly from all the FPDC research questionnaires to win a new laptop.

Thank you for your time.

Robin Greaney

fpdc@inclusivetraing.com
APPENDIX G

SAMPLE STAGE 1 STUDY AGENCY: DISTRIBUTED ANNOUNCEMENT
International Research Partnership Project

And

Would You Be Interested In Participating In A Provincial Research Project?
PRIDE In-Service Training Digital Computer Curriculum

You Have A Chance To Win
A laptop computer – for anyone who completes both tasks!
Your name will be electronically entered upon survey submission.

Wanted: Staff/Foster/Adoptive/Kin Families
We would like a cross section of new and more experienced participants.

2. Complete On-line survey re your experience. Approximately 35 minutes

Open To: • Resource Families (Foster/Kin/Adoptive)
• All Frontline Staff
• Supervisors
• Trainers
Here's how you can participate!

Choose ONE of the following nine modules.

1. **Meeting the Developmental Needs of Children at Risk**
   - Session 1: Understanding and Assessing Self Esteem
   - Session 2: Building Self-Esteem and Understanding Behavior
   - Session 3: Communicating with Youth and Children, Part 1
   - Session 4: Communicating with Youth and Children, Part 2

2. **Using Discipline to Protect, Nurture and Meet Developmental Needs**
   - Session 1: Promoting Positive Behavior
   - Session 2: Promoting Self-Responsibility and Responding to Unacceptable Behavior
   - Session 3: Responding to Challenges

3. **Addressing Developmental Issues Related to Sexuality**
   - Session 1: Addressing Developmental Issues Related to Sexuality

4. **Responding To Signs And Symptoms Of Sexual Abuse**
   - Session 1: Understanding Sexual Abuse
   - Session 2: Responding to the Issues of Sexual Abuse

5. **Supporting Relationships Between Children And Their Families**
   - Session 1: Respecting and Supporting Child/Birth Ties
   - Session 2: Supporting Contacts between Children and their Families
   - Session 3: Becoming Partners in Parenting

6. **Working as a Professional Team Member**
   - Session 1: Strengthening Teamwork Skills
   - Session 2: Developing Your Professional Role
   - Session 3: Conflict as Opportunity

7. **Promoting Children's Personal and Cultural Identity**
   - Session 1: Valuing and Making a Commitment to Cultural Competency
   - Session 2: Helping Children Develop Lifebooks

8. **Promoting Permanency Outcomes**
   - Session 1: An Overview of Permanency Planning Practice
   - Session 2: Understanding Permanency Goals
   - Session 3: Supporting Children's Transition to Permanent Homes through Reunification or Adoption Placement Part 1
   - Session 4: Supporting Children's Transition to Permanent Homes through Reunification or Adoption Placement Part 2

9. **Managing the Fostering Experience**
   - Session 1: Part 1 and Part 2 Managing Change in Your Family
   - Session 2: Managing the Impact of Abuse/Neglect Allegations

Participants will need access to a computer with a CD drive and a sound board. If interested contact_____________. We will register you and provide you with a CD of the module of your choice and provide you with instructions to complete the on-line survey.
APPENDIX H

PDC USER QUESTIONNAIRE
FPDC User Research Questionnaire

1. Introduction
This survey has been constructed to obtain the opinions of family resource members to the Foster PRIDE Digital Curriculum (FPDC) modules. Your experience as a resource family member provides you with insight into the considerations needed for training resource families. The following survey provides a voice to these perspectives. The FPDC User Research Questionnaire takes approximately 30 minutes to complete. It is part of a research project intended to increase the variety of learning opportunities available for resource families. What you and others contribute will help make a difference in resource family training. If you have any questions about the research questionnaire, please email fpdc@inclusive-training.com or call 708-612-2046.

Description of Item:
Foster PRIDE Digital Curriculum (FPDC) consists of 9 modules using the Foster PRIDE training model. Each module is broken down into between 1 to 4 Sessions, each on a separate CD. The FPDC was developed for resource families in support of their in-service training requirements.

This questionnaire is being conducted across Ontario at the children’s aid societies to examine the training benefits of the partnership with the Ontario Association of Children’s Aid Societies (OACAS) and Governors State University (developers of the FPDC). The research data is being gathered and analyzed by an independent researcher, Robin Greaney. The results will be provided back to the agency for continual improvements in training.

To maintain anonymity, the relationship between the Agency and Role (ex. staff or resource family position) will not be disclosed to OACAS on a per agency basis but as a whole from all agencies combined.

Your participation in this questionnaire is optional and voluntary. As a show of appreciation, one participant will be drawn randomly from the FPDC research questionnaires to receive a new laptop.

Thank you for your time.

I understand the purpose and benefits of this questionnaire and volunteer to participate in this research. I acknowledge that I may skip any question or exit out of the questionnaire at any time.

☐ Accept
☐ Decline
2. Background Information
Please provide answers to a few background questions to establish your level of experience.

Role in resource family
Drop down list and other
- Foster Mother
- Foster Father
- Adoptive Mother
- Adoptive Father
- Kin Care Provider
- Other

Gender? (optional)
- Female
- Male

Which best describes your ethnicity.
- African (black)
- Asian/Pacific Island
- British
- Canadian Origin
- European (other than British or French)
- French
- Hispanic
- Mixed including European
- Non-European
- Other (please specify) __________________________

Your Age: (optional)
Drop down Age range
- Less than 25
- 26-35
- 36-45
- 46-55
- 56-65
- Over 65

Number of years as a resource family member? _______

Please identify the number of children living at your home.
- Total children
- Birth children
Agency Name (for purposes of correlation and sampling):
Drop down menu

Where do you live?
☐ Urban
☐ Suburban
☐ Rural
☐ Aboriginal community

What is your first language?
☐ English
☐ French
☐ Spanish
☐ Creole
☐ Other ________________

In the past year did you participate in any type of resource family training sessions?
☐ Yes
☐ No

Prior to using the FPDC modules, how often did you use the following materials?

<table>
<thead>
<tr>
<th></th>
<th>Never</th>
<th>A Few times a year</th>
<th>A few times a month</th>
<th>A few times a week</th>
<th>Practically Everyday</th>
</tr>
</thead>
<tbody>
<tr>
<td>Computers</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Internet</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>CD/DVD training</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>

Technical Aspects of FPDC
Below are questions pertaining to the technical operations of the FPDC program.

What is the operating system of the computer you used to view the FPDC?
Drop Down list

Did you use the "Help" menu?
☐ Yes
☐ No

If you used the "Help" on the FPDC, did it answer your question? (optional)
☐ Yes
☐ No
Access to Training Materials
Below are questions regarding resource families accessing the training materials.

Please evaluate traditional training (classroom-based) situations

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Training is easily accessible for resource families</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Resource families can schedule their training at a time convenient to them</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Training locations are easily accessible (easy to get to)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Training locations are located nearby resource family's home (less than a one hour commute)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shift workers and individuals who travel often are likely to use this training method</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Training is available for a broad audience (Example: extended families, community members, others...)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Resource families can review training material at a later date</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Now, consider the FPDC CD training situation

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neutral</th>
<th>Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resource families can schedule their training at a convenient time</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Training is easily accessible for resource families</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Typically, Resource families have access to computers</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Training materials are available for later access</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shift workers and individuals who travel often are likely to use this training method</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Training is available for a broad audience (Example: extended families, community members, others...)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Any additional comments regarding the different training situations (classroom or CD based)?
Who might you consider would benefit from the FPDC in-service training?

Were you able to complete each CD in one sitting? (Sitting refers to the number of times you had to turn off the program and come back to it at a later time)
- ☐ Yes
- ☐ No

If "No" to the above question, how many sittings (on average for all the CDs in that module) did it take to complete each CD?

Were you able to complete the CD sessions without interruptions?
- ☐ Yes
- ☐ No

If you had interruptions during the session, on average how many interruptions did you have for each CD?

What were the reasons for these interruptions?

Which method of in-service training do you prefer? Please rate your preference with 1 being your first choice and 5 being your last choice.

<table>
<thead>
<tr>
<th>Method</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Classroom Based Training (face to face)</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Video Training (VHS or DVD for example: viewing an instructional video outside of a classroom)</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Online Training (for example, an educational course on the Internet)</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Multimedia Training (Combined video, audio, and interactive activities. For example: FPDC)</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Self-paced Training (for example: a book)</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>
Perception

These questions will explore your perception of the FPDC Training.

**How would you rate the following topics?**

<table>
<thead>
<tr>
<th>Topic</th>
<th>Strongly Disagree</th>
<th>Somewhat Disagree</th>
<th>Neutral</th>
<th>Somewhat Agree</th>
<th>Strongly Agree</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>The print materials that accompanied the CDs were clear and helpful</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>An online discussion board should accompany this training</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>We should have more training like this</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>It was easy to locate the saved files of my responses on my computer</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I felt I received adequate feedback from the agency after completing the FPDC module</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>My resource worker/trainer told me how to access the saved files on my computer</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I had an orientation before taking the training</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I didn’t enjoy this type of training</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I had a follow up (or plan to) meeting with my resource worker/trainer after completing the training</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I felt the user guide that accompanied the FPDC disk was helpful</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I felt comfortable with my FPDC exercise responses being sent to the agency</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**How would you rate the following support needs for families completing the FPDC training?**

<table>
<thead>
<tr>
<th>Support Need</th>
<th>Essential</th>
<th>Optional</th>
<th>Not Necessary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Online Discussion Board (posts at different times)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Online Chats (same time meeting)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Large face-to-face group meetings</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Follow-up meeting with Resource Worker</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Demonstrated support and encouragement by agency administration</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
What do you perceive as the strengths of the FPDC Training in promoting the professional development of the user?

What do you perceive as some limitations of the FPDC Training in promoting the professional development of the user?

What are some ways to overcome any negative concerns about the FPDC Training?

Evaluation of Learning
Please answer the following questions pertaining to the evaluation of the user’s learning.

Please answer the following questions

Has your agency developed a system for reviewing your learning from the FPDC module? □ □
Did you know that files are saved on your computer during their viewing of the training □ □
Do you know how to retrieve these files □ □
Has your trainer or caseworker asked to review these files? □ □
Has your resources worker or other assigned agency staff discussed your responses with you? □ □
Has your agency informed you on how they will share your responses to the FPDC modules (developed a system for sharing your information with you)? □ □
Is there a feedback system within your agency for resource families’ questions or comments? □ □
Please rate how you think the evaluation of skills learned through the FPDC CDs compare to skills learned through traditional classroom training?

<table>
<thead>
<tr>
<th>Strongly Disagree</th>
<th>Somewhat Disagree</th>
<th>Neutral</th>
<th>Somewhat Agree</th>
<th>Strongly Agree</th>
</tr>
</thead>
</table>

The information learned through the FPDC CDs compare to information learned through traditional classroom training?

|☐|☐|☐|☐|☐|

The evaluation methods are appropriate for determining the user's understanding of the subject.

|☐|☐|☐|☐|☐|

The evaluation provides adequate assessment of the user's comprehension.

|☐|☐|☐|☐|☐|

Quality of CDs
Lastly, we'd like to find out what you think of the quality of the FPDC CDs.

Check all FPDC Modules you viewed
☐ Module 1 - The Foundation for Meeting the Developmental Needs of Children at Risk
☐ Module 2 - Using Discipline to Protect, Nurture, and Meet Developmental Needs
☐ Module 3 - Addressing Developmental Issues Related to Sexuality
☐ Module 4 - Responding to the Signs and Symptoms of Sexual Abuse
☐ Module 5 - Supporting Relationships between Children and Their Families
☐ Module 6 - Working as a Professional Team Member
☐ Module 7 - Promoting Children's Personal and Cultural Identity
☐ Module 8 - Promoting Permanency Outcomes
☐ Module 9 - Managing the Fostering Experience

Each module checked will receive the following questions.

Which Session/s did you view? (Check all that apply)
☐ Session 1
☐ Session 2
☐ Session 3
☐ Session 4

Have you attended the classroom version of this same session?
☐ Yes
☐ No
Approximately how much time did you spend on the module you completed?
_____ hours  _____ minutes

Please compare the time you spent on FPDC to a traditional classroom training session.
Less time on FPDC
Same time as classroom
More time on FPDC

How well did the FPDC program work for you?

Did you have any problems starting the program?  Yes  No
Were the on-screen instructions difficult to understand?  Yes  No
Was the program hard to use?  Yes  No
Did you have any difficulties with the interactive activities (text entry, drag & drop, etc…)?  Yes  No

Please explain any “yes” responses to the above question.

Please answer
Was there was enough opportunity for you to get actively involved with the material?  Yes  No  No
Did more than one person use the same disk on the same computer?  Yes  No  No
Did you exit the program before completion?  Yes  No  No
If you exited the program, did you return to the same section after you restarted the CD?  Yes  No
If you exited the program, did you do so on a “contents page” (the “contents page” are screens that list the activity lessons throughout the CD)  Yes  No  No

Would you like to add any comments on technical issues regarding the FPDC?
Please rate your opinion to the various components of FPDC.

<table>
<thead>
<tr>
<th>Item</th>
<th>Strongly Disagree</th>
<th>Somewhat Disagree</th>
<th>Neutral</th>
<th>Somewhat Agree</th>
<th>Strongly Agree</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Materials Relevant</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Instruction Effective</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Resource Parent commentary (Speaking from Experience) were helpful</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Dramatized Video Scenarios helped clarify topic</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Would recommend to resource families</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Topics addressed are useful</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>I hope to see similar Multimedia instruction in the future</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>The co-narrators presented the information in an organized manner</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>The CDs were easy to use</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>Interactive exercises helped me clarify and understand the material</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>The final exercise at the end of each session (Theory into Practice) helped me apply the material I learned</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>
### How would you rate the following topics?

<table>
<thead>
<tr>
<th>Topic</th>
<th>Strongly Disagree</th>
<th>Somewhat Disagree</th>
<th>Neutral</th>
<th>Somewhat Agree</th>
<th>Strongly Agree</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>I felt the audio was helpful</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I felt the pictures were helpful</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I felt the text were helpful</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The flow of the information was easy to follow</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The training was able to hold my attention</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Case Studies were useful</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>There was enough opportunity to get actively involved with the material</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The material was presented in an interesting way</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I could relate to the team narrators</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Content gave me a better understanding of the topic</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Please rate the overall impression of the CDs

<table>
<thead>
<tr>
<th>Aspect</th>
<th>Strongly Disagree</th>
<th>Somewhat Disagree</th>
<th>Neutral</th>
<th>Somewhat Agree</th>
<th>Strongly Agree</th>
<th>N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Information presented in a logical manner</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Screens contain an appropriate balance of information</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Screens are cluttered and have too many graphics</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The key concepts are emphasized appropriately</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The information is easy to understand</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>It is hard to follow along with the contents direction</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The language was clear to understand</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grammatical errors noticed</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Screens contained too much text</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Definitions and terms used properly</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Overall, I rate my experience with the Foster PRIDE Digital Curriculum:

<table>
<thead>
<tr>
<th>Extremely Dissatisfying</th>
<th>Slightly Dissatisfying</th>
<th>Neutral</th>
<th>Slightly Satisfying</th>
<th>Extremely Satisfying</th>
</tr>
</thead>
<tbody>
<tr>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
<td>[ ]</td>
</tr>
</tbody>
</table>
APPENDIX I

STAGE 1 STUDY FOCUS GROUP AGENDA
Foster PRIDE Digital Curriculum Pilot

Focus Group Agenda
for
Agency Leads

Date: June 20, 2007
Time: 10:30 – 3:00 pm.
Location: [Redacted]

1. Getting started – Introductions 10:30-11:00
2. Small group discussion of issues from focus group outline 11:00-12:30
   (See attached Focus Group Outline)
3. Lunch 12:30-1:00
4. Large group discussion 1:00-2:30
5. Next Steps: [Redacted] and Robin 2:30-2:55
6. Thank you! 2:55-3:00

Last updated: 6/18/2007
APPENDIX J

FOCUS GROUP QUESTIONS
Foster PRIDE Digital Curriculum Pilot

Focus Group Questions
For Agency Leads

Date: June 20, 2007
Time: 10:30 – 3:00 pm.
Location: Boardroom

1. Introduction –
2. Would you share your most memorable experience with any aspect of PRIDE since your involvement with the model, however recent that may be?
3. This has been a “whirlwind” of a pilot project. From the time your agency indicated a willingness to participate to our gathering today has been less than 8 weeks. Let’s discuss your reactions to this compressed time frame and how it has impacted you?
4. What have you heard from participants, if anything, about their sense of the 1 month period of time they had to complete the 3 hour CD and online survey?
5. Can we turn now to how we prepared you for your role as FPDC Agency Lead. You were provided with tools, reference materials and an opportunity to participate in regional teleconferences. Tell us about this orienting experience. (Refer to your handout package of tools provided)
6. How did you go about promoting the pilot within your agency? What, if anything, did you learn from this promotional experience?
7. Tell us about your experience during the one month period of the actual pilot phase.
8. What did your participants tell you of their experience with the product, if anything?
9. What have you learned from this pilot experience that you have not already mentioned?
10. What have you learned from the pilot about managing the transfer of learning perspective?
11. Let’s turn to the actual FPDC product itself. Now that you have had more exposure with this learning modality, what are your thoughts about it?
12. As we all prepare for full implementation in November, what next steps will you take within your agency to maximize FPDC learning opportunities?
13. Is there anything else you would like to tell us today?

Last updated: 6/18/2007
APPENDIX K

RECRUITMENT LETTER TO PARTICIPATE - INTERVIEWS
Subject: Request for Voluntary Participation in Research.

Hello [Name],

I am conducting research on the development and implementation of the PRIDE Digital Curriculum (PDC) for my dissertation at Northern Illinois University. The title of my dissertation study is *An Activity Theoretical Perspective on Inter-Organizational Collaboration in Instructional Technology Development and Implementation*. As a key member in the development and implementation of the PDC, I would like to interview you for this study.

Your participation is voluntary. To ensure trustworthy research, no compensation will be offered for your participation. However, contributing your time, perspectives and expertise to this research will assist and guide practitioners in future educational technology development projects.

Purpose of Study

The main purpose of this study is to examine human activity in collaborative development and implementation procedures of inter-organizational development teams. Advances in technology have made planning and producing more difficult and labor intensive. This research will examine activities associated with the inter-organizational partnership. The expectation of the investigation is not to place a generality on the results but to provide prescriptive insight for other practitioners in the educational technology field on the particularity of the PDC project as a representation of potential contradictions and possible solutions to collaborative projects in educational technology and training.

Tasks of Subjects (participants) in Study

Each subject will participate in an interview lasting approximately two hours. You may withdraw from your participation or refrain from answering any question during the interview process without penalty. The interviews will be recorded on a digital voice recorder. After the interview, a transcript of the audio recording will be provided to you for review. At that time you may omit, revise, or clarify any comments made during your interview. I will attempt to schedule the interview at a time and location that is convenient to you. Phone interviews may be conducted using a speaker phone and digital audio recording device for out-of-state interviewees. I have attached a Consent Form for Participation in Research document that I will ask you to sign prior to beginning the interview.

Some example questions that will be asked during the interview include:

- What was your role in the implementation process of the PDC?
- What challenges did you encounter in communication practices between the inter-organizational partners? How were these overcome?
- How were the roles and responsibilities divided within the organization and with external participants? How was this division of labor determined?
- Identify the community members you work directly with during the PDC development and implementation processes?
- What goals do you have for the PDC project? What goals does your organization have for the PDC project?

Potential Risks

As a participant in this study, there are two potential risks you should be aware of before consenting to participate. The first risk is your identity may be revealed. During the discussion and findings section of this research, it may be needed to identify your role/title on the project. Your
comments, if identified by your role/title, may be indirectly connected back to you through other documents, such as the PDC, which connect your role/title to your name. The second risk is called worker vulnerability and refers to risks a participant may be vulnerable to that relate to their work environment and livelihood, such as job retention, financial loss and peer pressure. As participate, your employer or co-workers may react negatively to your comments in the final research study. For instance, if you stated you deliberately used someone else’s copyrighted material to save cost, you would likely risk being fired and financial repercussions.

To minimize these risks, you will be notified of all comments you made that are intended to be written in the final published study which are connected to your specific role/title on the PDC. At that time, between the rough draft and final draft of the study results, you will have an opportunity to withdraw those comments or elect not be connected to the comments made during the interview. Additionally, the majority of comments made through all interviews will be summarized and generalized without connection to role/title. Furthermore, full transcripts from all interviews will only be viewed by the researcher and the transcriber and will be kept on a password protected computer privately owned by the researcher.

I mention the risks to this research as a precautionary measure but I hope that you will see the benefits of this research are geographically borderless and can help academic, social, governmental and corporate organizations in increasing inter-organizational collaborations for educational technology development. Your contributions in time and perspectives will be handled with the highest respect and an ethical responsibility of diligent scholarly research.

Please let me know if you are interested in participating in this study. I will then have you email me an address I can send the consent form. Two hard copies will be sent to you with a pre-paid return envelope for one copy to be returned to me.

Sincerely,

Robin Wyatt
APPENDIX L

CONSENT FOR PARTICIPATION
CONSENT FORM FOR PARTICIPATION IN RESEARCH

I agree to participate in the research project titled, An Activity Theoretical Perspective on Inter-Organizational Collaboration in Instructional Technology Development and Implementation, being conducted by Robin Wyatt, a graduate student at Northern Illinois University. I have been informed that the purpose of the study is to examine the inter-relationship activities of educational technology team members in the development of the PRIDE Digital Curriculum (PDC).

I understand that if I agree to participate in this study, I will be asked to answer questions regarding this study in an interview lasting approximately two hours.

I am aware that my participation is voluntary and may be withdrawn at any time without penalty or prejudice, and that if I have any additional questions concerning this study, I may contact the principal investigator, Robin Wyatt, at [email address]. I may also contact her dissertation chair member, [email address] through email at [email address].

I understand that if I wish further information regarding my rights as a research subject, I may contact the Office of Research Compliance at Northern Illinois University at (815) 753-8588.

I understand that the intended benefits of this study include an expansion of knowledge in the field of educational technology. Practitioners involved in instructional design and development can gain knowledge from the PDC personnel on effective techniques, useful tools and authentic workplace solutions in inter-organizational collaborations. I may also personally benefit through professional recognition as a member of the PDC.

I have been informed that potential risks I could experience during this study include:

a) Worker vulnerability – examples of these risks include: job retention, job restriction, peer pressure, strained employee relationships, and financial loss caused by the displeasure of an employer or co-worker on responses and comments I make during the interview.

b) Privacy - due to the specific roles of individuals in this study, your identity may be revealed. Individuals may need to be identified by their job title/role in the development and implementation processes, which can be connected to their name/identity on the PDC product.

I understand that the interview will be recorded and transcribed. Transcriptions will be identified by my role on the project. If someone else shares my same role then my first name will also be added to my transcripts (ex. John and Jane are both instructional designers then the transcriptions would be labeled “Instructional designer – John”). I will have the opportunity to review the transcribed interview and make corrections to my statements. I understand that once I review the transcripts, quotes from the reviewed transcripts may be connected to my title role on the project during the discussion and findings section of the final written research paper. I acknowledge that if I am concerned about a breach of confidentiality regarding any question, I will choose to not answer the question.

I understand that my consent to participate in this project does not constitute a waiver of any legal rights or redress I might have as a result of my participation, and I acknowledge that I have received a copy of this consent form.

__________________________                  ____________________________
Signature of Subject                          Date

I give permission to record my interview using a digital voice recorder.

__________________________                  ____________________________
Signature of Subject                          Date

I give my permission to be identified by my title role on project (ex. Instructional Designer and first name).

__________________________                  ____________________________
Signature of Subject                          Date
APPENDIX M

INTERVIEW QUESTIONS
Interview “Starter” Questions

Study title: An Activity theoretical Perspective on Inter-Organizational Collaboration in Instructional Technology Development and Implementation

The following questions will be implemented in the interview data collection process. This list of questions represents discussion topics and should be considered as “starter” questions which may evolve into additional questions as the interview proceeds. Additional questions may arise during the interview based upon answers provided to obtain clarity of their response. Furthermore, not all questions will be appropriate for all participants. Adjustments will be made for specific roles of each key member being interviewed. For instance, the interviewee in charge of marketing would not be able to answer some questions pertaining to development.

Instructions to Interviewee: There are approximately 35 preset questions. Some questions are simple and short responses while other questions may require time for reflection. Feel free to pause and contemplate your answers before providing a response. Additional questions may arise during the interview based upon your response. If any question does not apply to your position or activity in the development or implementation process, you can state that “it is not applicable.” As mentioned in the consent form, any question you do not feel comfortable answering you can simply state “I’ll pass on that one.”

Roles

1. What is your job title? What title did you have on the PDC project?
2. What was your role in the development process of the PDC?
3. What was your role in the implementation process of the PDC?
4. What role did the University serve on the development and implementation of the PRIDE Digital Curriculum?
5. What role did the serve on the development and implementation of the PRIDE Digital Curriculum?
6. What role did the (and/or government agency) serve on the development and implementation of the PRIDE Digital Curriculum?
7. What role did serve on the development and implementation of the PRIDE Digital Curriculum?
8. Are you aware of any other organization that also contributed to the development and/or implementation of the PDC? If so, what was their role?
9. Describe how, if any, the roles and members of the development team changed over time.
10. How did these changes impact the design consistency and workflow of the product throughout the nine modules?

Division of Assignments

11. How were the roles and responsibilities divided within the organization and with external participants?

12. How was this division of assignments determined?

13. Who wrote the grant for the PDC project?

14. Who was the content expert and how was that decided?

Tools

15. How was the media format of the training determined?

16. Who converted the in-class script to a multimedia script? What timelines, technical challenges, and contradictions did you incur during this process?

17. Next, we are going to look at a couple of the screen shots from the PDC product. Identify your involvement in the particular screen shot and any obstacles in developing it? Who else was involved?

18. What were the processes involved in screen development on the intra-organizational level and the inter-organizational level?

19. Describe general timelines and activities involved in the development and implementation process as it pertained to your role?

20. Was there a particular instructional design model or theory that you followed when contributing to the product?

21. How was the evaluation of the product determined during the early stages of development and after all the modules were completed?

Communication

22. Identify the community members you worked directly with during the PDC development and implementation processes? How often did communication occur?

23. What types of tools were used to collaborate between inter-organizational members? Did some work better than others? Why?
24. What challenges did you encounter in communication practices between the inter-
organizational partners? How were these overcome?

Rules and Culture

25. Were there any rules, such as technical, organizational, or cultural, within the organization you
work for that caused difficulty in working in partnerships with external organizations?

26. Organizational Culture has been defined as “the specific collection of values and norms that are
shared by people and groups in an organization and that control the way they interact with each
other and with stakeholders outside the organization.” Another definition is the “shared beliefs
and values, behavioral norms, and communication patterns that are reflected in an
organization’s policies.” With this definition in mind, describe the organizational cultural for
your place of employment.

27. How were the meetings conducted for members within your organization regarding the PDC
development and/or implementation? How were the meetings conducted with members
outside your organization?

Objectives and Goals

28. Given your specific role in the product development and/or implementation, what do you think
is crucial to the success of the PDC?

29. Describe the end-user of the PDC and how you considered this description when providing input
into the PDC development and implementation? How are you able to fulfill their needs and
restrictions as it pertains to your role?

30. What goals do you have for the PDC project? How have your goals changed through the
development and implementation process? Have you been satisfied with the outcome to date?

31. What do you perceive as the strengths of the PDC training in promoting the professional
development of the user?

32. What do you perceive as some limitations of the PDC training in promoting the professional
development of the user?

33. What are some ways to overcome any negative concerns about the PDC training?
34. In the next few questions, state the first five words that come to your mind as it relates to the PDC:
   - Verbs that describe inter-organizational collaboration
   - Verbs that describe intra-organizational collaboration
   - Adjectives that describe visual design
   - Adjectives that describe the distance learner
   - Nouns that describe instructional development tools
   - Nouns that describes “ease of use” as related to distance learning

35. What advice would you give to someone in your role if they were just beginning to work on a large-scale, inter-organizational project similar to the PDC?
PDC Interview Data

Screen Shot A

Screen Shot B

Screen Shot C
APPENDIX N

ACTIVITY SYSTEM #1: BUY-IN
In late 1999, the UNIV-Dir was hired by the UNIVERSITY as the Director of the Communication Services (CS) Department. One of the UNIV-Dir’s objectives was to expand the skills of his department staff into the rapidly growing digital technology field. In Activity System 1 (Figure 17), UNIV-Dir is Subject 1 in the collaborative ground of analysis. The UNIV-Dir heard of a Learning Anywhere, Anytime Partnership (LAAP) grant sponsored by FIPSE to help fund innovative projects in developing distance education using new digital technology. The UNIV-Dir viewed the LAAP grant as an opportunity to fund his objective to expand the staff’s skills. One of the LAAP grant’s stipulations was that the project be developed between inter-organizational partners. The UNIV-Dir used a community member (CM) at the university, a UNIV-Liaison, to find partners. The subjects identified in Figure 17 below, under Subject 2, were the inter-organizational PARTNER, STATE-Agencies, and EVALUATOR, who agreed to participate in the development of the instructional technology project, and FIPSE (the grantor).

The community member (CM) was the UNIV-Liaison at the university. The UNIV-Liaison’s office was located within the university, thus being a UNIVERSITY community member, but he worked for the STATE-Agency as an administrator and had the connections and background necessary to inform the UNIV-Dir about the grant and potential partners. The UNIV-Liaison informed UNIV-Dir that a grant was written the previous year to develop distance education training for the P.R.I.D.E. Model, but it had been declined. The UNIV-Dir asked if he could revise the grant. The UNIV-Liaison had many pre-existing contacts that were valuable for gaining the partners. The UNIV-Dir used the upper-level staff in the department to support both documentation to the granting committee and buy-in from 1) the granting committee, 2) the inter-organizational partners, and 3) the intra-organizational staff. The UNIV-Dir wrote and received approval for the $1.3 million grant.
Figure 17. Activity System #1, grant buy-in.
To gain the buy-in of the granting committee, UNIV-Dir needed to follow the rules and requirements of the grant. One such requirement of the grant was collaborating with partners on the project. The grant also required a 50% in-kind matching of the funds that could be non-monetary matching through the use of equipment/facilities and personnel time. The inter-organizational partners (Subject 2 in the tetrahedron) also had rules. The partners needed to consult with their organizations’ community members about investing in the project. The inter-organizational partners were non-profit organizations in the child welfare and education industries. Their culture valued volunteerism, but their rules limited their ability to buy-in time and money. The university provided nearly all of the ‘in-kind’ matching to accommodate the financial limitations of these non-profit organizations. Furthermore, the inter-organizational partners (Subject 2) had state and federal rules regarding child welfare industry standards, which included determining whether distance education was a viable choice for training foster parents.

There were four main roles within the division of labor during this activity. Writing the grant was done by the UNIV-Dir with the assistance of two community members at the university. The first Community Member 1, a UNIV-Colleague, was a director in another department at the university. The second Community Member 1 was the UNIV-Liaison. The three of them and the members listed under Subject 2 contributed to the writing of the grant in an advisor role, making suggestions for defining the project. The UNIV-Dir also needed to provide documentation for the grant, which included the Subject 2 (PARTNER, STATE-Agencies, and EVALUATOR) signatures of support and commitment to the project. Six STATE-Agencies provided their signature of support for the grant. The UNIV-DesignCoor and UNIV-Writer also supplied documentation for the grant application.
Once the UNIVERSITY and the inter-organizational parties bought into the project, the documentation and grant proposal were submitted to LAAP for final approval. The inter-organizational collaboration revealed a synergistic element that may have contributed to gaining this final approval by LAAP. The inter-organizational partners had a solid existing face-to-face curriculum in the P.R.I.D.E. Model of Practice. The STATE-Agency and PARTNER had spent years developing a curriculum through a 65-member committee to achieve a product with instructional integrity and versatility that could be used across the states and in other countries. The PARTNER also had an existing client base and network of state and child welfare agencies with a need to offer alternative distance education. Subject 1 (UNIVERSITY) had a department of highly skilled technical personnel, video production studios and equipment, and resources to create a distance education product. However, the UNIVERSITY’S initial objective to develop the staff’s skills in the newer technology required an authentic problem and project. Together the inter-organizational subjects brought complementing expertise and needs, which when combined permitted each to fulfill the need and organizational objectives.

Contradictions and Tensions

There were three contradictions and two tensions detected in the activity system on Grant Writing and Buy-in. Contradiction 1 (see Figure 18) represents the rapid technology changes. When the grant proposal was being written, it was a time that predicting the capabilities of technology and which tools would be available was almost impossible. By the time someone purchased a computer, it was obsolete as newer and faster hardware was being introduced rapidly. Topics such as digital divide were increasingly discussed. In a 1999 report, the 1998 data revealed significant disparities in computer access for higher income households and an increase
racial gap of those with access and those without (Irving, 1999). However, the data at the time the grant was being written was also reflecting an increase in computer access in all groups, with over 40% of households having access to computers (Irving, 1999, p. xv).

Additional results from the *Falling through the Net: Defining the Digital Divide* report reveal 32.7% of individuals had access to the Internet, 22.2% had access at home and 17.0% had access somewhere outside their home (Irving, 1999, pp. 32-34). In hindsight, it was hard to predict that Internet users would jump to 79% of adults by 2010 (Smith, 2010). I re-mention these statistics in the analysis section to put in to perspective the era in which this activity occurred. The rapid changing technology can be viewed as a contradiction because it is systemic to all organizations struggling to keep up with the present tools of that era.

The second contradiction has to do with the LAAP requirements. Contradiction 2 was the need for partnerships. This contradiction is part of the rules for the grant and as such is seen in Figure 18 as an arrow from the Subject to the Rules. To qualify for the grant, Subject 1 needed to obtain a partnership, which introduced a systemic contradiction in the grant writing process between the UNIV-Dir and the rules of the grant because this is an external pressure that needed to be overcome. The UNIV-Dir was not able to change this contradiction, but he was able to address this problem by using his resources; the previous grant and the UNIVERSITY Community Members. By gaining the assistance of the UNIVERSITY Community Members, UNIV-Dir was able to use their background knowledge and contacts with STATE-Agencies and PARTNER to create the partnership required for the grant.
Figure 18. Activity System #1, contradictions and tensions.
Contradiction 3 was a systemic contradiction between organizations pertaining to organizational culture. Each unique organization has its own culture of norms, policies and practices. This contradiction in the way one organization’s norms, policies and practices interrelate with another organization of differing norms, policies and practices can cause a strain on the relationship in the early stages of development and throughout the life of the synergistic activity. To gain buy-in of the inter-organizational partners, the UNIV-Dir needed to understand and respect the other organizations’ rules and objectives, as the organizations were defining their division of labor and contributions to the project. The UNIV-Dir understood some of Subject 2’s (STATE-Agencies and PARTNER) financial limitations and worked with them to create a project proposal that appealed to their rules and limitations.

In addition to these contradictions, there were two tensions in the grant writing and buy-in activity that were evident from the interviews: department staff readiness and trust and familiarity with the partners. Subject 1 (UNIV-Dir) viewed Tension 1 as department staff readiness. The UNIV-Dir wrote the proposal during his first year as director of the department. He had some time there to realize the potential of some staff. The UNIVERSITY staff predominantly had a video mindset and changing their roles to multimedia was something he felt might produce some resistance from the staff. To overcome this tension, the UNIV-Dir first addressed the topic with senior staff members in the department. Once they showed interest and the grant had made it through the first stage of approval, he then addressed the department members and asked if they would be interested in doing the PDC project. His technique of empowering the staff members to make the choice, rather than being told they would be working on the PDC project, helped reduce the tension. Tension 2 was in regard to the trust of the potential partners. Subject 1 (UNIV-Dir) did not have any previous relationship with Subject 2
(PARTNER and STATE-Agencies). The relationship all stemmed from Community Member 1, the UNIV-Liaison. Subject 1 perceived trust was one of the biggest challenges, particularly with the PARTNER. One such reason disclosed in the interviews was that PARTNER was not sure the foster parents or agencies would be ready for and accepting of this new technology.
APPENDIX O

ACTIVITY SYSTEM #2: STORYBOARDS
The grant was approved in summer 2000 with the anticipation that work would begin in the fall. The next activity system in the Determination theme involved developing a clearer shared vision as illustrated in Figure 19. Subject 1 included both the UNIV-Dir and the UNIV-DesignCoor. Subject 2 was representatives from the partnering organizations: PARTNER, STATE agencies, and EVALUATOR. During fall 2000, UNIVERSITY and the partnering organizations began conceptualizing a plan for how to approach the P.R.I.D.E. Digital Curriculum (PDC) project, and a two-day meeting was held in January 2001 for the partners to solidify their shared vision. The objective of Activity System #2, Shared Vision, was to provide information and gather input from the partners and community members, thus developing a consensus from the group on the direction of the PDC project. While this particular activity only took two days (although several months preliminary work went into preparing for the activity), the UNIV-Dir stated that this was one of the most important activities within the multi-year project.

Lesson number one is that creating and sustaining such a complex partnership is the greatest challenge. It was made possible because of the shared vision we all considered to be extremely important and the willingness to consult together until at last we could find solutions to what often seemed intractable problems (retrieved from LAAP Final Report).
Figure 19. Activity System #2, shared vision.
The division of labor pertaining to the meeting presenters was divided by topic for both Subject 1 and Subject 2: the intra-organization presented on topics of grant/administration (UNIV-Dir) and development and technological aspects UNIV-DesignCoor and the interorganizations members presented on state involvement (PARTNER) and evaluation (EVALUATOR). Rule 1 presented by the UNIV-Dir (Subject 1) was the grant requirements and administration. The UNIV-Dir needed to review what the limitations and requirements of the project were before developing the shared vision to assure the rules were understood and considered within the design. Rule 1 was from the original grant proposal. Both the interorganizations and the intra-organization shared a rule that each presenter had time limitations. Therefore, Rule 1 and Rule 2 both reflect the allocated time restriction. Furthermore, each participant needed to arrange time to attend the meeting, with most of the inter-organization members coming from out of state. Another Rule 1 listed here is something that seldom is considered a rule because it is only noticed when a problem arises: electricity needed to conduct meetings, particularly meetings that involved the use of electronic tools. This rule will be discussed in the tensions section below. The inter-organizations also had in their Rule 2 a financial consideration for travel arrangements, which was predominantly funded by the grant. The last Rule 2 was that the inter-organizations needed to contribute to the shared vision within their state regulations while collaborating on the inter-organizational and other state agency needs to develop a multifunctional product.

UNIV Administrators, Colleagues, and Department Staff

UNIVERSITY Community Members 1 were the UNIV-Administrators, UNIV-Staff within the department, and UNIV-colleagues, while the inter-organizational Community
Members 2 were members of the STATE-Agencies, PARTNER employees, and members of the EVALUATOR organization. The main tools the subjects used to present the information and ideas were PowerPoint presentations, the Internet (to show examples of other similar work), and the facilities in which the meetings were held. The meeting was at the university on the first day and then moved to the village hall on the second day. The synergism during the shared vision activity was that the organizations came with their own knowledge base but gained knowledge of other contributors. The UNIVERSITY had expertise in the technical creation of the multimedia but less knowledge of the child welfare agencies and evaluation processes for multimedia training. The Subject 2 STATE-Agencies and PARTNER had extensive knowledge of child welfare training but minimal knowledge of multimedia training. Subject 2 members were able to see examples of multimedia training and learn about the technical possibilities. Subject 2, EVALUATOR, also consulted with the group (UNIVERSITY, STATE-Agencies, and PARTNER members) on how a project of this type could be evaluated. The EVALUATOR also asked what the group felt would be indicators of a successful product. This permitted Subject 2, EVALUATOR, to learn more about what elements need to be included in an evaluation.

Contradictions and Tensions

The shared vision activity encountered one contradiction and two tensions as illustrated in Figure 20. A contradiction in any type of partnership that involves different organizations is that each organization has its own set of rules and objectives. The PDC project involved state regulated agencies, and these state agencies had regulated policies for foster parents unique to their own state. Because this project was being designed to accommodate multiple states and countries, it needed to be generalized. The original P.R.I.D.E. Model of Practice curriculum that
the PDC was being redesigned from had already addressed this issue. But it still needed to be considered when re-designing for multimedia. A simple example of this contradiction was if one state had a rule that caseworkers visiting foster homes were not allowed to wear jeans, the consensus then would be to not video record any caseworker wearing jeans. More challenging problems or variance in a law from one state to another were avoided by referring the trainee to state regulations. The PDC training material, as did the original P.R.I.D.E Model of Practice training, focused on soft-skills training: communication, friendliness and relationships toward others rather than the state regulations.

The two tensions identified in this activity were 1) functioning facilities and 2) visualizing concepts. Tension 1, functioning facilities, is mentioned in this activity because there had been a storm the first night. When the members arrived at the University for the meeting on the second day, they discovered the university had experienced a power outage during the night and the electricity had not been restored. This no doubt caused a panic to Subject 1 (UNIVERSITY) as Subject 2 members were from out of state and rescheduling was not an option. They needed to figure out what options they had. In this case, the village hall became a viable option and tool for continuing. Tension 2 on visualizing concepts was due to the lack of experience the inter-organizational subjects had with multimedia training. The UNIV-DesignCoor needed to find ways to explain some of the concepts, such as drag and drop or text entry. He used visual examples taken from online and images imported into his presentation to represent various activities in multimedia training.
Figure 20. Activity System #2, contradictions and tensions.
APPENDIX P

ACTIVITY SYSTEM #3: DESIGN
After the group members developed a shared vision and direction for the project, the group began re-designing the P.R.I.D.E. Model of Practice into the multimedia P.R.I.D.E. Digital Curriculum (PDC). It was mentioned several times within the data collection that the design section of the product development took much longer than expected. When the UNIV-Dir budgeted the time for the design, he assumed they would simply convert the written words and face-to-face training materials into a narration and multimedia platform. One of the complications with the re-design was that the STATE-Agencies and PARTNER noticed areas on the original training script that needed updating or re-wording. The UNIVERSITY also realized the re-design was a more complicated process because issues that were not relevant in written text format became relevant. For instance, the re-design needed to consider the diversity of the actors, the tone of how something is said, imagery of an abused child, or emotional and relationship concepts that are easier to state in writing than to capture in visuals.

The next two activity systems fall under the Design theme, as the central objective was to redesign the original curriculum and then be able to articulate the new design to the development team and partners. The first activity system in the Design theme is Activity System # 3, Design and Script Writing and the second Activity System #4 is on Screencoding. Originally I planned to separate the Design and Script Writing activities, but the activities became so entwined that they made more sense together. The screencoding activity was an intra-organizational activity that only involved the UNIVERSITY. As such, I used the flat activity system to capture the activity. Screencoding is mentioned in the Design Theme because it became an essential communication tool for the intra- and inter-organizational members to identify specific locations of the design.
The Design and Script Writing activity system saw two different methods or processes for addressing the activity, one by consensus design and another through a designated content team. The initial consensus design process had major tensions that required the team to innovate a new structure for the process. So there were two activity methods in the design and script writing processes that I refer to as Activity System #3a and Activity System #3b. Only two of the nine modules were completed under the initial consensus design activity system and then it was determined the activity structure needed to be revamped. The first activity process is illustrated in Figure 21 with the contradictions and tensions unique to the initial consensus activity system. I briefly explain the problems the team encountered in the initial consensus design activity before moving on to the revamped designated content team activity system that was used for the majority of the project. I will not go into details of the various elements of the initial consensus activity system because many of the activity systems analysis elements overlap with the revamped one. I will only elaborate on what aspects caused the tension in the design process.
Figure 21. Activity System #3a, initial consensus design.
The partners decided in November 2000 that they would start on Module 5 since it was less complex than Module 1. The final Module 5 script was dated February 2002, taking almost 15 months to complete. The second module the team worked on was Module 6, which they began in January 2002 and did not finalize until February 2003. Through the analysis of data, the initial design process had three contradictions and four tensions that caused friction within the activity system. The contradictions in Activity System #3a on the initial consensus design process included 1) a lack of resources on practices in the new media, 2) additional workload, and 3) cultural norms and practices. The lack of resources on practices in the new media was a global problem as subjects were searching for new communication tools and trying to keep up with the rapid technology changes. The intra-organizational UNIV-Writer in charge of developing a script had difficulty finding a sample multimedia script for how to demonstrate and articulate interactive features like branching or drag and drop. Television scripts were linear and Subject 1, the UNIV-Writer, needed to figure out how to communicate the design in a non-linear format. Furthermore, new terminology such as branching, drag and drop, text entry and other interactive features were not readily available as they tended to unfold while the technology was changing. This contradiction #1 coincided with tension #1, the learning curve of the subjects with the tools and processes, as they needed to learn how to communicate features and work within the software.

Contradiction #2 dealt with existing workloads and is considered a contradiction because many persons in these fields needed to balance work schedules when working on multiple projects. Rules from the one organization contradicted the rules from other organizations when
dealing with the existing workload because Subject 1 (UNIVERSITY) was accountable for the project while Subject 2 (STATE-Agencies, PARTNER) was not. The balancing of labor was a contradiction as each organization valued the project (and such allocated time) at different levels. The state partners were volunteering to work on the PDC, so their existing workload took precedence over the PDC project. This caused problems for getting timely feedback.

Contradiction #3 involved the cultural norms and practices of the UNIVERSITY Community Members 1 and the partnering organizations’ Community Members 2. The cultural influence was seen more at the community level as a contradiction while at a subject level as a tension (see tension 3) among individual personalities because at the community level, it was not something that could be easily changed. The cultural influence of the partners did affect the overall activity system of design because the methods in which they accomplished ventures were different within the two industries (media development and child welfare). The Community Members 1 at the UNIVERSITY were creative and much more use to free expression through their work, while Community Members 2 were more familiar with collaborating to gain consensual agreement.

The tensions that existed in Activity System #3a on the initial consensus design process were 1) learning curve, 2) design coordination, 3) personality conflicts, and 4) consensus design vs. medium. The tensions due to the learning curve were mentioned in contradiction #1 regarding the lack of resources on the practice in new media. There was a lack of resources in the literature on how to practice development in the new media.

The latter three tensions blended to become one huge problem for the development team (UNIVERSITY). Tension 2, design coordination, was between Subject 1 (UNIV-DesignCoor) and Subject #2 (PARTNER) over the division of labor as to who was in control of the design
team’s coordination. In other words, two of the organizational partners in the multi-partnership collaboration were essentially leading the project’s direction. A deeper examination was the result of tension #3, personality conflicts, between the UNIV-DesignCoor and PARTNER-ISME (initial subject-matter expert). The UNIV-DesignCoor approached the project with a creative flare, while the PARTNER-ISME approached the project with a strong curriculum and consensus approach. Tension #4 of this consensus design approach was the leading problem and led to restructuring of the activity system. Almost everyone interviewed mentioned the tensions and differing perspectives between the two personalities in tension #3. The UNIV-DesignCoor and PARTNER-ISME were highly competent leaders in their fields; however, the particular creative and child welfare agency personalities clashed when it came to gaining consensus approval. As the UNIV-Writer stated, “You just can’t produce multimedia through consensus design. It was too cumbersome and delayed the process.” The personality conflicts appeared to be a result of the differing cultural behaviors and beliefs of each organization’s norms. This particular tension will be elaborated on in the findings when I discuss the research questions at hand.

The PARTNER-Div (division head at PARTNER organization) stated in his interviews that the PARTNER-ISME had exceptional organizational skills. Prior to working for PARTNER, she led a state child welfare agency and understood the culture of state child welfare agencies. The PARTNER-ISME wanted to get consensus approval from all the participating states. It was interpreted by the intra-organizational participants at the university that this consensus design exhibited a lack of trust in their visual media interpretation. Although the specific PARTNER-ISME who was part of this tension was not part of the interviewed participants for this study, it appears from other interviewees, including her boss and co-worker, that her desire to gain
consensus was based on past experiences in the field where criticism often came from various interpretations of content. The PARTNER-ISME was concerned with examining all angles of interpretation, as they were critical to producing a training product that served multiple state and child welfare agencies’ laws, rules, and practices. What was unknown at the onset of the project was how transferring a face-to-face instruction into a digital version included a new visual literacy level. For example, case studies that were read from a book now became visual issues for debate, such as ethnicity, gender, or how a person dressed.

The UNIVERSITY’S perception of the design process in the beginning was greatly different than what it became. Serious problems also began to emerge at this stage. The project, as originally conceived, envisioned the instructional design process as largely confined to pedagogical, technological and artistic issues, all of which were in the sphere of UNIVERSITY expertise. The original proposal referred to a straightforward “translation” of the class-based curriculum to the distance formats based on the thousands of pages of well researched and through documentation published in the P.R.I.D.E. manuals and projected completion of the script process as a straightforward process carried out primarily at the university. As the university’s development team began, however, the partners developed serious concerns that far more involvement was required by content experts and the development team tried in vain to duplicate the collaborative process of the original P.R.I.D.E. development. Nearly three years of struggle were required to complete the first two modules before the partners were able to agree on and implement a more streamlined process, which then served the development throughout the remainder of the project. (LAAP Final Report, 2005).

In the most simplistic explanation, the initial design process did not work for three main reasons. First, the consensus process used in the original curriculum development was too
cumbersome to work in the multimedia development setting. Secondly, the clash over content and creative control through the two leading participants (UNIV-DesignCoor and PARTNER-ISME) was a cultural clash of their perspectives on how best to coordinate the design process of the multimedia product. Third, a lack of trust was often mentioned in the interviews and recorded notes. The original P.R.I.D.E. Model of Practice was built through a consensus design in the early 1990s. The UNIV-Dir for the project wanted to honor this consensus design, but it did not work for developing the interactive media. There were grant deadlines and development processes for the new media that required faster decision making power. The UNIV-DesignCoor elaborated on how the grant requirements and possibility of losing the grant funds forced change onto the activity:

Those LAAP grants went away in our second year of our three-year time. So they dispersed the money and said that they would allow people who had [existing] grants that lasted for the next year to come to term. They would fund those and then that would be it. …. [LAAP] didn’t have any more money but they were still overseeing the granting process. So for us to be able to, first of all, prove that we would – since they only had a limited amount of money, that we would get money for the third year and that we had made progress. Well, they weren’t very happy with our progress. I wouldn’t be either. And they said, “You’re going to have to change. And if we’re going to fund you for the third year, then you’re going to have to get a different schedule up. So that was the only way we were able to push to reorganize the whole development [design] process, which we did in the third year finally (personal interview with UNIV-DesignCoor).

Activity System #3b: Designated Content Team

The revisions made to the design process likely saved the project. Figure 22 illustrates the revised Activity System #3b. The major changes in the two activity systems were the subjects. Subject 2 (STATE-Agencies) in the inter-organizations were changed to reduce the amount of input and, thus, time to make decisions. The restructured designated content team members included the UNIV-DesignCoor, UNIV-Writer, three STATE-Writers, and the PARTNER-
PSME (primary subject-matter expert). The STATE-Writers all came from the same local state child welfare agency in the state the where the university was located. The STATE-Agency was the original author of the P.R.I.D.E. Model of Practice. There were seven remaining modules to re-design. The restructured designated content team also changed the process of consensus design to meet face-to-face in two to three day marathon meetings. Most decisions made during these marathon meetings were accepted as final instead of having to go through the redundancy of gaining consensus approval. The reduction in Subject 2 participants impacted the tools (SME-expertise) but did not limit expertise exclusively to the content design team. The team contacted SMEs outside the team whose expertise might be specific to the content at hand through either phone calls or emails during the meeting. The new content team tackled each module from beginning to end and had an almost finalized script by the end of the marathon meeting.

The changes made from Activity System #3a on the initial consensus design process to Activity System #3b on the revised designated content team design process are summed up as follows:

1) SUBJECTS: Subjects #2 changed from PARTNER and all partnering states to designated PARTNER-PSME (primary subject-matter expert) and local STATE-Agency
2) TOOLS: changed from multiple subject-matter experts to appointed subject-matter experts
3) RULES: Rules #2 changed from consensus approval, strict criticism, and multiple state laws/practices to designee authorization, consensual acceptance – existing workload remained a rule but the value changed
4) COMMUNITY MEMBERS: changed state administrators to state partners, reducing state contributions
5) DIVISION OF LABOR: changes included reducing the design team coordination to 1 person (UNIV-DesignCoor), reducing the number of people who were reviewers and editors, and having one script writer in charge of deadlines
6) SYNERGISM: change from consensus design to a designated content team design
7) OBJECT: no change
Figure 22. Activity System #3b, revised design process.
When the inter-organizational partners changed the rules from a consensus design to a designated team design, fewer community members provided feedback, which reduced the multiple iterations of scripts. Thus, the community members became more focused and purposeful. Instead of each state partner sending it out to multiple people in their administration, the partner representative from each state would review the near finalized script. STATE-Agencies only provided feedback if there was content they had serious concerns about. In other words, the Subject 2 (STATE-Agencies) community members provided more general feedback. The division of labor was then shrunk to a smaller content design team that had clear and specific roles in the process. The UNIV-DesignCoor was the only design team coordinator, eliminating the UNIVERSITY and PARTNER both trying to coordinate the process. The objective in this activity remained the same as the initial consensus design, which was to design the instructional technology product.

**Contradictions and Tensions**

As the design process changed, there were changes to the contradictions and tensions (see Figure 23). Some of the tensions and a contradiction that were in the initial design process were no longer issues for the revised design process because of time and experience. The initial tensions, such as learning curve and finding tools to guide them in writing a script, had resolved themselves over time. By the time the design process changed, the members of the team had already developed the layout for the script and were becoming much more familiar with the technology. So this experience played a significant role in reducing the tensions.

There were two contradictions and two tensions that existed for the revised activity: the contradictions were 1) existing workload and 2) cultural norms and practices. The tensions were
1) converting in-class activities to media-based material and 2) the deadlines. Half the content
team was interviewed for this study, and they all stated how the new content design team
collaborated wonderfully. There were no struggles of power or conflicts in perspectives that the
team could not overcome. Most importantly, the realization that the consensus design for
multimedia was ineffective was like a wall coming down. Being able to have designated SMEs
and a team who could make decisions on the spot in the marathon meetings liberated the process
from being bogged down by multiple reviews, edits, and iterations.

The contradiction for the existing workload still existed as each member had external
responsibilities, but it was limited to only the designated content design team members instead of
all the other people and partners involved. Each member of the redesigned team was accountable
for being prepared for the meeting. The second contradiction regarding differing cultural norms
and practices between the community members for the inter-organizations still remained,
however, the UNIVERSITY members grew to learn more about the culture of social service
agencies and the inter-organizational members assigned to the revised content design team
appeared to have trusted in the media staff at the UNIVERSITY. The original inter-
organizational Subject 2 (PARTNER-ISME) who had some friction with Subject 1 became less
involved in the project as two other members of PARTNER were assigned to the designated
content team. There were no personality conflicts detected within the new team.
Figure 23. Activity System #3b, contradictions and tensions.
Designing multimedia activities from the original in-class activities did involve some tension. The content team needed to be aware of issues such as stereotypes, visual interpretations, converting concepts into visuals, sensitive topics, and whether an activity should be an interaction, narration, and animation and so on. Sometimes a team member would suggest one idea and someone else in the team would not like the idea. From listening to the interviews and reading the notes, the team handled these conflicts through respect for each member’s input without any one person dictating the outcome. If any concerns or objections were mentioned, they would as a group revise the idea or omit it. The second tension, the deadline, was one that motivated the team. Because the original consensus design had set the whole project behind schedule, the deadlines needed to be met. As mentioned, this tension was handled by setting two to three day marathon meetings. A new timeline was set and the members of the designated content design team made it a priority to set aside the few days for each module.
APPENDIX Q

ACTIVITY SYSTEM #4: SCREENCODING
After the Content Team designed the instructional product in a script format, they needed to communicate the design to the rest of the inter-organizational members (UNIVERSITY development team, STATE-Agencies, PARTNER) and needed to provide a reference code to identify specific parts of the design when communicating with other members. For instance, there were numerous narration screens for each session. If someone from a STATE-Agency wanted to discuss one particular narration screen, it was useful to have an assigned number similar to an address.

The screencoding on the script was an essential activity and communication document in the whole project. It was used by both the intra-organizational and inter-organizational participants in the project. UNIV-DesignCoor elaborated the importance:

It was the most important organizing principle that we had because everybody had the same script. They had for the most part the same numbers even though there were multiple versions of the script. The numbering didn’t change dramatically from version to version. There was a little tinkering around it with a few things but the numbering was really our central core anchor (personal interview with UNIV-DesignCoor).

Activity System #4 (Figure 24) on screencoding was an internal activity for the UNIVERSITY (intra-organization); therefore, a 1-dimenstional activity system (Engeström 1993) was used to review this activity. While this activity was not inter-organizational, it is included in this research because it became an important communication tool for the organizations and assists in answering the first two research questions. The subjects were the Instructional Design Team Coordinator and the Assistant Design Team Coordinator (which was my role in the project). The objective was to devise a document to identify each of the screens with the objective that both the intra-organization (development team) and inter-organizations (partners, SMEs) could understand. Since this type of instructional technology project was just beginning in the early part of 2000s, it was hard to find examples in the literature of other
projects on how screencoding on those projects was completed. So the UNIV-DesignCoor and
UNIV-ADesignCoor had to devise a coding system. The tools were the near-final script, the
module outlines written in the curriculum material, and past experience with the video method of
coding – referred to as timecode in video. The UNIV-DesignCoor determined the numbering
system of the screencode, and the UNIV-ADesignCoor would take the codes and incorporate
them into the script using a computer and Microsoft Word.

Figure 24. Activity System #4, screencoding.

Some rules the UNIV-DesignCoor and UNIV-ADesignCoor needed to consider for this
new media were screen sequences with non-linear directions. Also the animations were new to
the mix and needed to be coded differently than video. Another rule that placed an influence on
the activity was the pace of production. The development team wanted to start working on the
project. The UNIV-DesignCoor and UNIV-ADesignCoor needed to devise a coding system
quickly so everything from video clips to graphics to flash files could be saved with an
appropriate name for relocating them later. There needed to be a communication tool that could be understood by both media developers and people outside of video/audio production (the inter-organizational partners). The thought process for choosing how to devise the screencode came from a video background, but not everyone had a video background, even on the development team. The labor was divided between the UNIV-DesignCoor and the UNIV-ADesignCoor. In the beginning, the UNIV-DesignCoor was more involved in applying screencodes to each script. But as time went by and a system was developed, the UNIV-ADesignCoor wrote the screen codes on the script and then the UNIV-DesignCoor and UNIV-ADesignCoor met to review and make any necessary adjustments prior to releasing the Module Outline and script with the final screencodes. During the meetings, there was dialogue as to what sequences should be divided and considered an individual screen or which screens should have an alphanumeric value (which represented a sequence), but as the modules progressed, the process became easier. Thus, over time the process became more efficient and less time was required from the UNIV-DesignCoor. The UNIV-DesignCoor could focus on other issues in the development process.

Contradictions and Tensions

Overall, the screncoding was not as challenging but there were one contradiction and two tensions that the UNIV-DesignCoor and the UNIV-ADesignCoor needed to address during the process, as illustrated in Figure 25. Tension #1 was that the UNIV-DesignCoor and the UNIV-ADesignCoor were working with a new media format, which involved a new method of identifying sequences in a non-linear format. Unlike video, the screens and activities branched into different directions based on the users’ interaction with the training. There were also animations that changed within the screen. In video a person can point to each still image as a
frame, knowing there are roughly 30 frames per second, but the majority of screens in this new media format did not have the constant motion of video. Additionally, the images per second for Flash files could vary depending on the programming and that Flash and video have different rates of images per second. Plus, time could not be measured for interaction as it was for video because the end user can somewhat control the rate of time spent on the screen. In other words, it can be complex, so finding an appropriate solution to represent all the multiple media formats was a challenge.

Figure 25. Activity System #4, Contradictions and Tensions

Since all the videos were incorporated into a screen, the UNIV-DesignCoor and the UNIV-ADesignCoor were able to identify the screen with video instead of coding each image in the video, such as is done in the video production field. The edited video clips were coded as an object on one screen. However, the interactions and animations were a harder to break down. This brought on contradiction #1, interpretation of sequences. That was when the UNIV-
DesignCoor and the UNIV-ADesignCoor decided to use an alphanumeric type of coding instead of a plain numeric code.

The screncoding was an organizational tool for communicating to multiple people with different levels of technology skills. The UNIV-DesignCoor and the UNIV-ADesignCoor knew the importance of making it understandable to multiple audiences (Tension #2). The screncoding was one of the most essential communication tools used by the development team. The UNIV-DesignCoor stated:

"It was the most important thing, it was the important organizing principle that we had and we set that up early and there was some difficulty, in some cases, there were several things. Sometimes people didn’t understand that third number [lessons] completely because it was only related to the content for that particular module and the arbitrary breakdown that was part of it. And then also because the screens, sometimes the screens had multiple links, even within the same screen and we had to be able to storyboard those uniquely (personal interview with UNIV-DesignCoor).

This confusion, as illustrated in Contradiction #1, arose through the alphanumeric screncoding system because the Flash sequences were designed to help the multimedia/Flash specialist (UNIV-Multi) identify what content or activity should be on each screen. However, once the screen series was completed and turned over to the composition technologist (UNIV-Programmer), it was one published Flash file (.swf) rather than the multiple screen numbers seen on the script. So in the beginning the development team had some contradictions in the new media over where the existing screens identified on the script were since the compositing programmer only had one file. Eventually, the alphanumeric coding was clarified and the confusion resolved. There was also some confusion, to both the partners and development team, regarding the lessons. As the UNIV-DesignCoor explained above, lesson identification was new to the digital version to let the user know how far along they were in the training. Each content page became a unique screen with a check mark on the completed lessons. This was something
novel to this new media format. It was easy to determine how much progress in a training a
viewer had achieved, but the new media format did not have time indicators so the content page
was devised as a progress bar. These contradictions and tensions during from the screencoding
activity eventually dissolved, as the all the members of the inter-organizational collaboration
became familiar with the process.

As soon as the script and screencoding were completed for each session (CD), the
development team began working on creating the media objects and CDs. I will next examine,
through an activity theory lens, the third theme, Development.
APPENDIX R

ACTIVITY SYSTEM #5: STORYBOARDS
Development Theme

The initial intent of this research was to primarily focus on the development and implementation stages of the inter-organizational collaboration while developing the distance learning P.R.I.D.E. Digital Curriculum (PDC) program. As the design process revealed, much more time was required from the development team to re-design the curriculum for a distance education program than the intra-organization (UNIVERSITY) expected at the commencement of this project. As such, re-design was a necessary planning phase for the development. It was in that design phase that the majority of the organizational synergism occurred. The bulk of the development process was completed independently by the intra-organization. However, since it was the intent to research inter-organizational collaboration of instructional technology, it seems relevant to still discuss an activity overview in which the inter-organizational collaboration did not require as much synergistic involvement because it reflects the areas of collaboration and the areas of independence. As such, the development theme revealed three central activities: Activity System #5, Storyboards; Activity System # 6, Development; and Activity System #7, Video Production. Activities # 5 and #6 are both intra-organizational, while Activity #7 on Video Production involved an inter-organizational collaboration and used the three-dimensional activity system.

Storyboards

The Activity System #5 on Storyboards was also one of my participatory roles in the production prior to becoming the researcher of this study. The UNIV-DesignCoor assisted in the initial design of the multimedia storyboards. The video director (UNIV-VideoDir) created his own storyboards for the videos (storyboards discussed in this section only reflect the whole
multimedia project). The UNIV-DesignCoor and UNIV-ADesignCoor had no examples of multimedia storyboards when the development team began the P.R.I.D.E. Digital Curriculum (PDC), so the UNIV-DesignCoor used past experience with developing video storyboards. In television, the storyboard represents a visual sequence of events, or sometimes more broadly the scenes. A brief description of the event or scene is written below or to the side of the image. It could also be the audio portion of the scene. The storyboard for the PDC (see Figure 26), which shared similarities to video storyboards, was created to convey information about the media objects on each screen.

Figure 26. Example of storyboard.
Just as the Module Outline was used as an intra-organizational tool, so were the storyboards. UNIV-DesignCoor explained why the storyboard was used only within the university and not shared with the partners.

As you get lower and lower into the process, it’s harder and harder to define things for somebody who is not a visual audience. So to try to take something that is not fully finished and just in a script form and narratively (sic) say what’s going to happen, for the most part, people who aren’t visual, will have a really hard time understanding that. And we probably made some mistakes by trying to share some of that information too widely with [the partners], because they come back and say, you can’t do that and I’d say no, you misunderstood the concept. It’s not that. We were actually going to have [such and such], and then you got to explain it again. So then you don’t explain it, you give them the storyboard. Well, storyboard still isn’t enough because the storyboard, if it’s good and I’m not talking about just a storyboard for a dramatic scene where you might have a person or two or three and write out some dialogue. That might be somewhat understandable to them. Although all that seeing the expression of the kids or the hurt in the mom’s face or something else you might not really understand what’s going on there. But I am talking about something that might be moderately complicated thing like a drag-and-drop.

Let’s say we did a drag and drop into a timeline. Well, to explain, what is actually happening that these various phrases come out then you got to take these phrases and place them in the timeline; you got to move the timeline and at certain times, these things happen and even a storyboard may not completely allow someone who is not visual to understand what’s going on so the only way to get around that, and this is true of my life in television, instructional television, is that it is difficult to show anybody anything until it’s to really show them what it is going to be like, especially at some middle management or higher level, until it is pretty much done, not completely, but pretty much done. Now, I know that is a danger but I’d had been burnt so many times by somebody coming back to me and not understanding and then you go back to them again and they don’t understand.

….I think it would be very hard to describe or to identify what’s going on in what would be a normal film storyboard which is just pictures, because [multimedia is] not just about the pictures. It’s about the complex elements that interact with each other (personal interview with UNIV-DesignCoor).

The UNIV-DesignCoor gave the UNIV-ADesignCoor a list of particular items that needed to be identified on the storyboard. The UNIV-ADesignCoor then developed a rough draft.
of the storyboard, the UNIV-DesignCoor reviewed it, tweaked it, and then the UNIV-ADesignCoor finished designing a template for the storyboards throughout the nine modules.

The objective of this activity (see Figure 27) was to create an internal communication tool for the development team that outlined, per screen, the visual and audio components of the screens. Sub-objectives acknowledged the divisions of labor for the development team.

![Activity System #5, storyboards.](image)

The UNIV-DesignCoor and UNIV-ADesignCoor started the storyboard design with the components or elements that went into each page, along with who on the development team was responsible for that element. The storyboard also had a section to identify if the screen was complete. Early in the development process an expected date of completion was added. Some of the rules required for this activity were time, technology limits and pace of production. There was a narrow window between when the script was finalized and the development team began
working on the script. The pace of the development team eventually grew faster than time permitted for the creation of storyboards. It was, however, a useful tool in the beginning of the development stage to help the development team get a visual of particular aspects and template styles for the screens. The UNIV-DesignCoor explained “We [development team at UNIVERSITY] used the script as the primary tool but we storyboarded a lot of things, … a lot of the dramatizations and a lot of the interactive things we storyboarded, at least conceptually storyboarded, saying, these are the elements and they should be here, here, and here” (personal interview with UNIV-DesignCoor).

The storyboards were used primarily in the beginning of the development. As the development team became more familiar with the various types of screens and the production pace began to pick up, the storyboards were developed either at the same time as the screens or after the screens. Thus, the storyboards for the multimedia project originally identified the elements on the screens and the division of labor for each screen. Eventually the storyboards visualized and documented each screen for reference after completion. The division of labor was primarily done by myself (the UNIV-ADesignCoor) with the exception of reviewing the template, which was done by the UNIV-DesignCoor. Once the screens were created, an image of that screen was placed in the storyboard as a reference. Eventually, when the workload picked up and the development team was working on multiple modules at the same time, the UNIV-ADesignCoor received assistance from UNIVERSITY student workers (community members identified in Figure 28) for capturing the screen images and importing them into the storyboards. The following section will review the contradictions and tensions involved in this activity.
Contradictions and Tensions

Unlike film and video storyboards that provide a visual drawing or graphic of the scene prior to shooting the footage, the storyboard for the multimedia did not include an image before the screen was developed. A placeholder was positioned on the storyboard page until the image of the screen was completed. Therefore, contradiction #1 in Figure 28 refers to the fact that storyboards in video would have had a sketch of the scene, but in the multimedia storyboard, the images were not illustrated. In video, storyboards can be broken down by scenes, which requires fewer images. The storyboard served more as a detailed written description of the visuals, including any text that would be on the screen. But it was not possible to efficiently produce a digital image of what was supposed to be the image. In other words, it would be a waste of time to create a screen image for the storyboard on the computer while the graphic artist and multimedia technologist were also creating the screen. It was duplicating the work. So what the UNIV-DesignCoor talked to the graphics designer or multimedia technologist in a small meeting and occasionally, the UNIV-DesignCoor might hand draw an example of what he was envisioning. This storyboard development process is discussed in a narrative analysis in Appendix X. But the contradiction of images was a contradiction to multimedia versus video production.

Prior to the screen being developed, the storyboard contained specific elements to help guide the development team. The storyboards identified the screen code (number) and some discreet, unique title taken from the script. The script remained the central tool for developing the storyboard. The storyboard was developed with the basic information ahead of the actual development. After the screens were completed, an image of the screen was imported into the storyboard.
Figure 28. Activity System #5, contradictions and tensions.

The second contradiction was the pace of production. In the first few years of the project when the design process was slow, it was easy to keep up with the storyboards. But once the scripts started rolling in every few months for each module, the pace of development also picked up. As mentioned, it was my role as the UNIV-ADesignCoor to develop the storyboards, but I was also actively involved in the video production portion of the development. This brought on tension #1, workload priority. The development team was in a rush to get the development process completed and the storyboards by this time were not used to instruct the graphic
designers and multimedia technologist as much as they had been in the earlier stages. So the storyboards became lower on the priority list as the demands shifted. As the workload shifted, the student workers began creating the storyboards after the fact to keep as a reference. It was much easier and faster to view a screen on the storyboards than to navigate to the screen on the disk. Some of the student workers were not as familiar with Photoshop or Excel (the tools used to create the storyboards) and there were varying learning curves for each student to learn the process.

All three of the communication tools developed (interactive script, screencode, and storyboards) were used to guide the development team. The next activity system examines how the design process, communication tools, and inter-organizational collaboration guided the physical development of the product.
APPENDIX S

ACTIVITY SYSTEM #6: DEVELOPMENT
Activity System #6 (see Figure 29) is on the physical development of the PDC product. The UNIV-DesignCoor was the central subject in charge of overseeing and directing the development team. The UNIV-DesignCoor approved all graphics, Flash and video objects before anything was viewed by the partners. Everyone in the development team was guided by the UNIV-DesignCoor. Ultimately, the UNIV-DesignCoor was the one responsible for the look of the product, similar to a director of film. So when looking at the larger aspect of development, choosing the UNIV-DesignCoor as the central subject made sense. The tools the development team used may have been unique to the individuals in the group, but the team all had, in many ways, similar tools: some type of software, hardware, meetings (communication), and the script the design team had developed. The software or hardware changed based on the individual’s task. For instance, the graphics designer worked with Photoshop, the multimedia technologist worked in Flash, the compositing programmer worked in Director, and the video editor edited in Avid. “We [the UNIVERSITY development team] used Flash and certain other pieces, you know, Photoshop and other things to do some of the internal work. Some of the animations were done in Flash. But the whole piece was put together, the whole coordination and development of the whole piece was under Macromedia Director” (personal interview with UNIV-DesignCoor). The UNIV-DesignCoor needed to know a little bit about all of the software programs because he had to communicate with all of the staff members. The UNIV-DesignCoor needed to know the limitations and capabilities of all the software.
Figure 29. Activity System #6, development.

The object was to create media. The creation process for each media (graphics, text, animation, audio, video, and interaction) was different, but the UNIVERISTY development team all came together with the outcome of having an interactive media project. The UNIV-DesignCoor and UNIV-Writer were the guiding interpreters of the script for the instructional component as they were the ones who were in the content design team meetings. There were clear divisions of labor within the activity. Graphics and the multimedia technologist worked together. Video and audio worked together. And the multimedia technologist and the compositing programmer worked together. Each development team member’s expertise often guided the other UNIVERSITY community members. So the division of labor often overlapped with the community members’ roles because each group communicated with the other group to converge the media into an integrated product. There was communication about what each development team member might need to perform the tasks, such as the video editor inquiring about the video compression size for the multimedia technologist to import it into Flash. The
rules for the development team were related to software, technology, communication and creativity. Working with creative staff, the UNIVERSITY-DesignCoor knew that sometimes space and individual style needed to flourish. While many people might feel they did not want to hurt the feelings of a creative person, on the contrary, the group as a whole talked about the need to communicate so the development team could achieve exactly what the UNIV-DesignCoor and the partners were looking to achieve. The creative staff wanted honesty, but honesty requires the proper approach on how to be honest without being degrading or insulting. Also, respect for one’s expertise had to be considered. Placement of objects and design decisions are strategic decision artists will make based on their knowledge of the media. For instance, during a video production, an actor may be placed at a specific location due to natural lighting situations to avoid high contrast in the image.

The activity system for development was painted with a very broad stroke because the focus of this research was predominantly on the inter-organizational collaboration. However, Figure 30 shows that the development process has multiple activity systems within the broader development activity system. Each division of roles and community members could easily be expanded to elaborate on the sub-level activity systems. The legend in Figure 30 shows how the individuals collaborated, guided, or provided assistance to the other members.
Figure 30. Activity systems within development system.
Contradictions and Tensions

To examine the main contradictions and tensions of the development process requires looking at the activity from the lower levels. When these contradictions or tensions occurred at the lower level, they became issues the UNIV-DesignCoor needed to address the problem. Since this examination of development activity is broad to fit this research, contradictions and tensions that the individual members of the development team endured within their tasks are not discussed. Contradiction #1 (see Figure 31) has to do with the learning curve that the UNIV-Writer mentioned earlier. This was a new process and the designers and UNIV-DesignCoor needed to learn the capabilities of the software. Not only were the graphics and multimedia technologists learning this new software, but video was transformed from analog video to digital video. Editing software was gaining great strides in non-linear editing, but there was a process in learning the newer software. The UNIVERSITY television studios were also renovated during these early years to handle digital video and just a few years later needed more renovations to handle high definition. With the changes came file format changes, and the development team struggled for more hard drive space as the editing suites were being used. So there was a constant struggle between the tools that were needed and the limitations or rules to use these technologies.
Figure 31. Activity System #6, contradiction 1.
Tension # 1 in Activity System #6, as illustrated in Figure 32, related to personality conflicts among the crew members. The team typically worked exceptionally well together. The graphics had a buddy with the multimedia technologist. UNIV-DesignCoor and UNIV-Writer complemented each other’s personality between the UNIV-Writer’s organizational skills and the UNIV-DesignCoor’s creative flare. UNIV-VideoDir and I (as the participant UNIV-ADesignCoor) also worked well together. The UNIV-VideoDir and UNIV-ADesignCoor traveled together for video shoots several times and had respect for each other’s contributions. But one of the members, the UNIV-Programmer, tended to work alone. The UNIV-Programmer took the pieces and put the puzzle together by himself. None of the other members at the UNIVERSITY knew the Director software. The Univ-DesignCoor elaborated on the compositing programmer’s personality.

Part of the personality is that the programmer that we had in here was an unusual personality. He was a young Korean man who was brilliant. Is brilliant; he's still around doing programming in other places. But was not a very communicative person and I would say he was not a great team person. He liked working and doing this and he liked working alone. He liked challenges and he had a very peculiar sense of what was correct and incorrect. So he ended up designing a lot of things himself and that took a long time. Programming a lot of things himself which took a long time. And not letting anybody know until later and then the re-working of some of the things that he had already done needed to get done and so that took a lot longer (personal interview with UNIV-DesignCoor).
Figure 32. Activity System #6, tension 1.
The UNIV-DesignCoor continued:

He [UNIV-Programmer] would wait until he [UNIV-Programmer] felt like he had something completely right before he would show it to anybody... He had a very strong sense of authority, meaning that the -- he's very hierarchal in the way that he thought. So he -- he was very good with me because I was the leader of the team. As it went down in team members, he became less and less amenable to other people's suggestions or even to talking to people. So I often had to be intermediary. So when he was working with [Univ-Graphics] or he worked with [Univ-VideoDir] or he'd worked with some other person, you know, we had [Univ-AudioEng] in here for a while and almost everybody that came in some way or another, you know, it was either me or [Univ-Dir] who’s the director of the entire department, those were the authority figures that he would listen to, otherwise he would -- it would be harder to communicate with him (personal interview with UNIV-DesignCoor).

As UNIV-DesignCoor stated, he ended up having to be the mediator among graphics, multimedia and the compositing programmer, so the UNIV-DesignCoor addressed the tension by dealing directly with the programmer when possible. Of course that added tension to UNIV-DesignCoor’s already busy schedule, but it was the best process to keep harmony within the team.

Another tension in the development process had to do with the development team turnover. Figure 33 illustrates this Tension #2 in the activity system, staff turnover.

The PDC development occurred over the course of five years. The department went through several personnel changes as people retired or moved on to new jobs. The UNIV-Graphics1 (first graphics artist) retired after the first two modules were created, and the UNIV-Graphics2 (newly hired graphics artist) began working for the UNIVERSITY department. The two graphic designers had distinguishable styles, which caused tension in the visual continuity of the PDC over the nine modules. As the UNIV-DesignCoor explained, “we couldn’t just go back to the first two modules and redo them because it would be too costly and too time consuming.”
Figure 33. Activity System #6, tension 2.
The narrative analysis in Appendix X illustrates the different styles of the two graphic artists and elaborates on this challenge. Additionally, there were a couple of other graphic artists in the beginning of this project who had some influence on the original design. This is explained in more detail in Appendix X.

In addition to the graphic artist changes, the UNIVERSITY development team had some early changes to the multimedia technologist role. The UNIVERSITY development team had one staff member who first started as an assistant on Module 5 but ended up leaving during Module 6. His Flash experience was not at the level needed for this project. The development team also had another multimedia technologist for Module 5 and part of Module 6, but his primary duty at the UNIVERSITY was as a video director for the continuous production of another external partner. So eventually the UNIV-Dir hired a designated multimedia technologist (UNIV-Multi), who served on the development team until the end of the first revisions.

Immediately after we completed production, we went through a Stage 1 study to test the CDs. It was determined we needed to do some minor changes. By that time the UNIVERSITY hired yet another multimedia/Flash expert who assisted on the Flash components. So the UNIVERSITY development team went through several graphic and multimedia staff members during the development.

But the biggest tension and loss was when the compositing programmer (UNIV-Programmer) left the team. At that time the UNIVERSITY development team was into the development process, having endured the delays in the design process. The development team started out with module 5 and then 6. Then the development team followed the remaining module sequence: 1, 2, 3, 4, 7, 8, 9. In-house the development team did modules 5, 6, 1, 2, and 3 completely. When the UNIV-Programmer left the development team for another job, part of
module 4 was done more or less in-house, but it needed to be cleaned up. And then modules 7, 8, and 9 still needed to be composited. When the development team lost the UNIV-Programmer, all of the design and elements were created or near completion, but the UNIVERSITY development team had used up the grant time. The UNIVERSITY development team needed a quick solution. This tension caused the UNIV-DesignCoor and UNIV-Dir to outsource the remaining programming needs. The UNIV-DesignCoor and UNIV-Dir found a local company who would then help with the final compositing and programming. Outsourcing at the time, for this particular case, appeared to be the best possible solution to closing out the development phase.

The development team was not the only employment turnover problem the UNIVERSITY encountered. The UNIV-Dir also mentioned the administration of the grant at the UNIVERSITY. The UNIV-Liaison and the UNIV-Colleague who helped to write the grant (mentioned in Activity System #1) left the campus shortly after the project began. Additionally, another UNIVERSITY member was written into the grant as an administrator for the project but retired within the first year. So after the first year of the project, the UNIV-Dir had lost three members he had expected would assist in administrating and managing certain aspects of the grant project. The UNIV-Dir explained in his interview that the grant did not provide an extra contingency budget for unforeseen expenses and thus there were no funds available to hire someone for the administrative aspects of the project. This made those duties all fall on the UNIV-Dir.

As I mentioned earlier, the majority of the development activity occurred within the intra-organization (UNIVERSITY). However, one component of the development, the video production process, was an inter-organizational activity.
APPENDIX T

ACTIVITY SYSTEM #7: VIDEO PRODUCTION
Originally, the UNIVERSITY development team assumed the video production would be an intra-organizational process, but it was necessary for the UNIVERSITY to make the video production process inter-organizational. This activity system is represented in the three-dimensional activity system. In the video production activity system shown in Figure 34, the two main subjects were narrowed down to the video director (UNIV-VideoDir) and the PARTNER’s primary subject-matter expert (PARTNER-PSME). The objective of this activity was to produce scenarios and video clips that would be incorporated into the interactive training. There were a few different types of videos recorded in this activity: Speaking from Experience (experts interviewed), narrators, and scenarios (skits played by actors). The two subjects (UNIV-VidDir and PARTNER-PSME) in this activity served specific roles in the division of labor. The UNIV-VideoDir was in charge of the creative aspects of the video production activity, and the PARTNER-PSME was responsible for verifying the authenticity of the production from the child welfare perspective. While the video director always kept an eye on the authenticity or believability of the actor’s performance, the PARTNER-PSME’s expertise was in the authenticity of the child welfare industry practices. In this activity, the PARTNER-PSME was dealing with rules regarding the child welfare laws, state bureaucracies, the child welfare alliances. This required an expertise in multiple state policies. This will be discussed in the second contradiction of this activity.
Figure 34. Activity System #7: video production.
The video director had his own unique rules in the activity system. The Video Director first needed to work within the rules of the university. The department had greater flexibility, mostly due to the grant funds, that gave the UNIVERSITY department some freedom related to issues such as finances, but everything still needed to be paid through the business department, which had its own rules. This caused problems when trying to order food for a video shoot or needing supplies faster than the purchasing department’s payment process allowed. There were rules on how many hours a student worker could assist or even on the nature of what students and their skills were available. Schedules and availability for the video production crew always needed to be considered. In addition, being part of the media had its own rules. There are rules for using union actors. The UNIVERSITY department did not have to worry about other unions, such as for audio engineers, due to the size of the department and the purpose of the productions. Furthermore, there are rules for the technical aspects of video. The Video Director had to work with the rules of compression to make the unique video clips fit within a unique screen, given the limited data space available on a CD-ROM. Video production also has rules, such as the rule of thirds for placement of the talent and white balancing to ensure even color temperatures when shooting in remote locations. While I mention several rules for the video production, many of these rules did not cause a contradiction or tension because the video director was already familiar with the rules of video production and working in a university environment so he had learned methods to overcome any issues prior to the start of this project.

The community members involved in the video production occasionally overlap between the organizations, but there were also clear distinctions between the intra-organizational and inter-organizational subjects. The PARTNER-PSME had his alliances with child welfare agencies. He was able to reference them during any video situation, which may be questionable
through a phone call. PARTNER-PSME was the only subject-matter expert at the video shoots so he was representing the other agencies and partners within his community for authenticity of the content. The video director’s community members were more related to the video aspects of the activity. The director had to gather a production crew, including someone to operate the camera or cameras, run audio, help set up, and manage the talent contracts. Prior to the shoot the video director needed to find talent through working with talent agencies. During the shoot he needed to work with the talent to get them to perform in the creative manner he was trying to capture. This also included working with the parents of child actors. There was also non-union talent, such as the interviews for the Speaking from Experience screens. The UNIV-VideoDir was not the only one finding talent, as the UNIV-DesignCoor and UNIV-Writer also located talent. The UNIVERSITY development staff also used friends and family members for the smaller roles. The UNIV-VideoDir worked with the PARTNER-PSME and the UNIV-Writer and UNIV-DesignCoor to ensure that the scripts were based on what content the design team had envisioned.

When the UNIV-VideoDir and the PARTNER-PSME joined in this activity, they shared the script and their unique expertise as tools for accomplishing the goal. Another tool for any video production activity is the actual video equipment. This can include a multitude of equipment, such as video cameras, microphones, lights, light stands, and accessories for lighting. The script, talent, and locations were considered tools because they brought the scenario or story to life.
The video production activity revealed a three-dimensional activity system with two inter-organizational subjects: the UNIV-VideoDir and PARTNER-PSME. The two subjects had different rules and community members but brought their own expertise as tools to collaborate on this activity. There were two contradictions and two tensions detected from the interviews: Contradiction 1, depletion of resources; Contradiction 2, cultural insight; Tension 1, appearance and tone; and Tension 2, capturing concepts. The contradictions and tensions for this activity system are revealed in Figure 35.

Contradiction #1 involved the depletion of resources. The UNIVERSITY is located in the suburb of one of the largest cities in United States. As such, it was assumed that such a large city would have an abundance of talent. However, the UNIV-VideoDir reflected in his interview that one of the contradictions was the depletion of actors. Appendix X explains how the UNIV-VideoDir used two of the largest talent agencies in the city in additional to referrals from the UNIVERSITY development team. There were over 300 actors and experts recorded for this project. All roles needed to be documented for each talent to avoid placing an actor in two different roles over the course of the nine modules. If an actor played the part of a foster father in one module, then the actor could not be used in another module as a social work or biological parent. Additionally, some roles were more complicated and needed experienced talent. Because this project involved children, many children actors were recruited. Due to the project size of this particular case study, the UNIV-VideoDir started to run out of fresh talent. To overcome this contradiction, the UNIV-VideoDir and the UNIV-DesignCoor searched for family and friends within the development team to perform some of the smaller acting roles.
Figure 35. Activity System #7, contradictions and tensions.
The UNIV-DesignCoor was actively involved a local theatre and was able to pull some actors from this association. A smaller group of the development team went out of state for the Speaking from the Experts (expert foster parents) video sections and recorded some of the video scenarios in those states with fresh actors. In addition to the depletion of actors, the UNIV-VideoDir struggled to find authentic locations for the scenarios. The funds for this project did not budget the cost of locations. To record on public property, such as a state park, required fees based on city ordinances pertaining to videotaping. To deal with this contradiction, many of the development team members at the university provided their homes for an authentic environment to capture a scenario. The UNIV-Dir and UNIV-DesignCoor (who occasionally directed some video shoots) found methods of maximizing a location by choosing close-up shots or different angles of a room.

Contradiction #2 refers to the cultural insight of the audience (aka the end user of the product). The community members (intended audience) were the inter-organizational agencies who would eventually purchase or license the product, so satisfying their needs was essential to reaching the objective for the larger-scope goal of the whole project. The UNIV-VideoDir needed an inside knowledge of the cultural norms and rules of the child welfare field to create an authentic appearing video. The audience was state agency members who came with various sets of rules and norms, such as how they dressed and how they approached someone else. For instance, some states have a policy that a case worker should never stand between an exit, such as a door, and a birth parent. Another example is that a case worker should not wear jeans. With so many rules, it became almost impossible for the video director to make decisions on the spot during a video production. Minor details such as what the talent was wearing or where they were standing in the video could cause the video to be unacceptable or incorrect. This occurred on one
of the early video recordings in which a video needed to be shot again. To reshoot the video meant additional funds needed to be spent on a second shoot because the talent and crew need to be paid for each day of production not to mention the additional time in editing. This problem is seen as a contradiction rather than just a tension because the problem was related to the systematic formation of collective systems. The UNIV-VideoDir needed to work with the collective systems of multiple state and national agencies. However, the state bureaucracies had different rules, policies, and norms. The child welfare laws for each state bureaucracy also changed over time. There is a unique type of culture for the child welfare agencies that are not germane to the media field. The UNIVERSITY, as the development team in this interactive learning project, was an external organization to the child welfare industry and thereby was not able to fully see the cultural uniqueness of the child welfare industry. The PARTNER-PSME, the subject-matter expert, needed to know not only the rules and acceptable practices, but he also needed to balance the various agencies and policies. The PARTNER-PSME had a very unique and broad knowledge-base to be chosen for this role. It was this early contradiction that turned this activity into the inter-organizational collaboration depicted in Figure 35.

Tension 1 involved the appearance and tone of the actors. When converting an in-class script to a visual script, challenges arose in visually capturing the intended instruction. For instance, an instructor can verbally use a case study to explain a relevant situation to the lesson. But this can be a challenge for converting the look and feel of a story and the ability to visually display the story. The PARTNER-PSME explained how both the visual and audio presentation differed from an instructor reading a case study or a student reading a written case study.

I can remember two examples which I’ll call problems with the challenge with the technology… The actor who was playing the social worker seemed to have an inappropriate affect, sort of in terms of how she was delivering her lines, kind of whining. And I knew then that when we showed that it might look like the actor who was playing
the foster parent might put up her in a position that she’s doing a really good job but it almost kind of looked like condescending in terms of, and that was one of my jobs. To advise when I see the film in reality that wouldn’t sound like that. Whatever and so I think we had to re-shoot that.

Or the actor showed up in jeans and [PARTNER-ISME] saw that. It was very early and [PARTNER-ISME] saw that and she said no, that’s inappropriate, social workers shouldn’t be wearing jeans. And so then [PARTNER-ISME] sent an email to the partnering states, this is very early and give us feedback on whether your workers use jeans. I think eventually [the UNIVERSITY] had to re-shoot the filming or something because [PARTNER-ISME] said she didn’t want an actor wearing jeans…. But when you are in a classroom with the printed material, people just read something. They don’t know what clothing people are wearing or they don’t hear a person deliver the lines. I saw that on video and I thought, man, she’s really whining right now, you know that’s not good (personal interview with PARTNER-PSME).

Awareness of the actors’ appearance and tone was necessary for the UNIV-VideoDir and PARTNER-PSME. The actors in the PDC represented diverse ethnic groups, so the development team might specifically need an Asian man between 40 and 50 years old for one scenario. Because there were 24 disks in total, the diversity needed to be spread out through all the modules and sessions. Furthermore, diversity needed to be taken into consideration for the types of roles the actors were portraying to avoid stereotyping. Because the project was being distributed globally, unique groups, such as Native American Indians, also needed to be represented. The PARTNER-Dir explained the challenge of satisfying these multiple locales, ethnicities, and stereotypes that accompany visual media;

I think the production people [UNIVERSITY] would mix advice and were very careful to make sure the men weren’t the only ones doing the discipline and the women weren’t the only ones doing the nurturing. It was carefully done to avoid stereotyping and I think that’s the biggest issue with visual productions (personal interview with PARTNER-Dir).

In addition to the appearance and tone, capturing concepts (Tension 2) was a challenge. It can be a challenge to capture a visual story for which visuals may be hard to obtain or inappropriate to capture. Tension 2 dealt with this challenge of capturing concepts on video. For instance, there
are two modules in the PDC that deal with sexual abuse and development of children. The
UNIV-Video Dir reflected on this dilemma;

[The development team had] a couple of scenarios where a child has been sexually
abused. Well how do you really get a child who has no experience with that, and who
also may be awful young to be able to deliver that type of material. We had to find a way
that the material could be delivered, and it was up to me to make suggestions well how
about this, that, or this information, or we had a side conversation that comes in that
discusses it so a seven year old child doesn’t have to learn about material that probably
his own birth parents in real life have never discussed with him or her (personal interview
with UNIV-VideoDir).

Other challenges mentioned in Appendix X on the video production development were
general tensions involved in video production, like an uncontrollable noise at a specific location:
an airplane, ambulance or wind. Visual problems also arose when shooting video outdoors and a
cloud in the sky moves in and casts a different light on the scene. This video-related challenge
required the video director to pay close attention to the surroundings. If changes in light or sound
went unnoticed, they became a problem during the editing stage of the video. One last challenge
mentioned in the development activity was compressing and formatting the video objects to be
placed on the disks. After the development of all the objects and videos and the integration of the
multimedia into a viable product, the inter-organizations completed the physical development of
the project.
APPENDIX U

ACTIVITY SYSTEM #8: EVALUATION
When instructional designers and developers work toward the creation of an instructional product, they must keep in mind the end user and the diffusion of that product. The diffusion of the PDC began long before the product was completed. In fact, as the grant was being written, considerations for the diffusion were being made. As such, the focus on diffusion was a parallel process to the preceding themes of Determination, Design, and Development in many ways. The process of diffusion in the PDC project involved three distinct areas of activities relating to the use of the final product: evaluation, implementation, and marketing. The overall objective of each of these activities was to get the best possible dissemination of the product into circulation within child welfare agencies.

I examined the inter-organizational diffusion process from both a developer and organizations’ perspectives of the product. The activities in this section will discuss Activity System #8: Evaluation, Activity System #9: Implementation, and Activity System #10: Marketing and Distribution. Activity System #8 involved the early evaluations of the PDC by the EVALUATOR. The grant required an external evaluator to work with the development team and the EVALUATOR was the organization chosen and recommended by the LAAP granting administrators. This section will only focus on the inter-organizational activity process between the UNIVERSITY, PARTNER, STATE-Agencies, and EVALUATOR.

I will then discuss Activity System #9, Implementation. The Implementation phase involved the PDC’s full-blown Stage 1 study and first dissemination to the end user. This phase occurred in 2007. The Stage 1 study, of which I was the principle researcher, was a collaborative activity involving the ASSOC, UNIV, and PARTNER-PSME (primary subject-matter expert). The Stage 1 study focused on the implementation needs. It was an inter-organizational activity so I used a three-dimensional activity system. Some of the Stage 1 study findings are discussed in
this section, as it pertains to the implementation activity (the end use of the product), but most of
the findings are in Chapter 4. The focus of this research is on the inter-organizational activity
process in uncovering the implementation needs of the PDC. Lastly, a three-dimensional activity
system examined the inter-organizational strategy for promoting the diffusion of the PDC in
Activity System 10: Marketing and Distribution. The marketing phrase of the PDC began early
in the collaboration, as members of the team participated in pre-development marketing at
conferences.

During the determination, design, and development themes, there were various activities
involving the evaluation of the PDC product. I mentioned in Activity System 4, Design, the
original design process involved having experts in the field from multiple state agencies review
and evaluate the new media scripts as they were being written. That process delayed the progress
of script writing and was revised to a more efficient method of designing the PDC product with
less multi-state evaluation input upfront. The revised design activity continued to be evaluated
through multiple state agencies but with a faster turnaround after a designated team wrote the
first draft. The PDC was also evaluated within the development phase for its functionality and
any potential errors, such as spelling or grammar. After each disk was completed, members of
the development team reviewed and evaluated the PDC disk and then sent it off to the STATE-
Agencies and Partners for review. Activity System 8, Evaluation, focuses on the central
evaluation, which was a requirement of the grant.

One of the stipulations of the FIPSE grant was to hire an objective external evaluator for
the project. Originally, the UNIV-Dir explained that the UNIVERSITY had one evaluator in
mind – a “group that works with distance learning and stuff” (personal interview with UNIV-
Dir). The FIPSE people were not totally satisfied with it and suggested an EVALUATOR. This
was a consulting firm that a large part of what they do is evaluate educational media based education materials. So the EVALUATOR joined the inter-organizational collaboration through a recommendation from the granting agency. The budget shows that the EVALUATOR was first paid for consulting on April 11, 2001 through August 23rd, 2003 (budget document, undated) and received just shy of $90,000 or 6.6% of the grant funds. The EVALUATOR was involved in the project from the beginning Determination theme, through the Design, and just until the first PDC module were completed and burned to disk. The first module completed by the development team was Module 5. The EVALUATOR used Module 5 to complete the grant agency’s required evaluation of the product.

EVAL-Lead was the representative from the EVALUATOR. He was present at the first meeting on January 29, 2001. During this meeting he had the opportunity to talk with the partners and agencies involved in this project. The meeting notes from this date reflected the activities of EVALUATOR were that EVAL-Lead

Discussed the collection of data and feedback to determine what works and what does not. It, of course, is important to determine if the program is accomplishing the objectives with the major outcome desired being that the participants are learning the material. [EVAL-Lead] discussed embedded evaluation so that data could be gathered seamlessly and integrated right into the training. It was agreed that the object of the data gathering is not to determine if one medium was better than another, but simply to understand if the outcomes of each are adequate.

[EVAL-Lead] mentioned he would like two groups of approximately 100 each. One group with the traditional curriculum, and the other with the digital curriculum. He asked the group as a whole, what would they consider a success? It appeared one of the major signs of success would be to get more foster parents licensed who understood the primary competencies. It was mentioned that there should be pre and post classroom "tests" to compare with the embedded electronic training assessments (Meeting notes, Jan. 29, 2001).

The objective of this activity was an evaluation of the PDC. Since the activity involved multiple organizations, I used a three-dimensional tetrahedron activity system to examine the
synergistic aspects of the activity. The focus of this research was on the inter-organizational collaboration of the training material primarily from the developer’s perspective. Therefore, I divided Subject #1 as the UNIVERSITY and Subject #2 as the EVALUATOR. The EVALUATOR also worked with the PARTNER and STATE-Eval (the state agency supporting the evaluation. The UNIVERSITY had two central individuals within the University working on the evaluation activity. They were the UNIV-Dir and the UNIV-DesignCoor. The PARTNER and STATE-Agencies were also involved and served as Community Members for both the subjects, providing input and advice on what information obtained from the evaluation would be relevant to them. In addition, the Community Member #1 for the UNIVERSITY was FIPSE-LAPP, the distributor of the grant. The EVALUATOR and UNIVERSITY were located in distant states. The EVALUATOR needed a local agency to assist in gathering and distributing the evaluations. Therefore, Subject #2 had as its Community Member #2 one particular State Agency who assisted in connecting them with participants for the evaluation and field study. To maintain their confidentiality, I shall call them STATE-Eval. The STATE-Eval also served as a Community Member for the University (Subject #1) under STATE-Agencies, but to distinguish its unique role with the EVALUATOR, it is separated in the Community Member #2 category for this activity. The STATE-Eval was part of all the partnering State-Agencies and was the state who volunteered to provide the participants for the evaluation. The UNIVERSITY stepped back from the evaluation procedure to provide the EVALUATOR and STATE-Eval an opportunity to conduct the evaluation in the most objective way, congruent with research procedures. Figure 36 reflects the division of the Subjects and Community Members.
Figure 36. Activity System #8, evaluation.
The Division of Labor for the subjects was divided into the tasks needed to complete the evaluation. These roles are broken down broadly for the purposes of the collaboration aspect. The role of the UNIVERSITY, STATE-Agencies, and PARTNER in the evaluation activity was to provide information to the Evaluator on what type of information needed to be evaluated. The University also organized the State Agencies, Partner, State-Eval, and Evaluator together, as mentioned in Activity #2, Shared Vision. The role of the Evaluator was to 1) administer a technology and attitudinal survey of foster parents, 2) advise the design team on embedding assessment tools into the software, 3) carry out an assessment of the evaluations provided by the foster parents, and 4) conduct a discriminate study. The role of the Eval-State is summed up below from one of the project reports to LAAP-FIPSE (granting agency):

- Collaborated with Evaluator in the dissemination of a Technology Survey across the state to assess the saturation level of computers, technological savvy, type of use, and comfort level for the foster parent population.
- Volunteered to conduct the Field Test of Module 5.
  - Identified a target region—[site location].
  - Distributed the CD-ROM version and a Technical Feedback Form to the region administrators.
  - Set up a two-way (video and audio) videoconference training for staff on the new technology and the specific Module 5 program. This entailed partnering with [University] to set up staff time in [site location], [University] technical training personnel and the coordination of two television studio sites—in [site location] and [University].
  - Collaborated with [University] in delivering the “Train the Trainer” videoconference.
  - Began to design and setup mechanisms within the state for foster parent registration, monitoring, support and tracking.
- Maintained contact with [Partner] and [University] by periodic phone conferences. (EVALUATOR Report, PARTNER-PSME, 2001)

It was the role of the UNIVERSITY (Subject #1) to gather criteria objectives for the evaluation: what information needed to be assessed on the PDC and potential users that would determine not only the success of the end product, but also the value of the end product in terms
of its effectiveness. The focus of the criteria objectives was examined through different organizational objectives. The UNIVERSITY wanted to assess technical aspects of the PDC, such as glitches in the programming or ease of use. The STATE-Agencies and PARTNER wanted to know if the end users were learning from the material and their behavior toward providing the material in a CD format. So it was then the EVALUATOR’s role to blend the combined inter-organizational objectives into a research project. The PARTNER on the PDC project led the EVALUATOR and UNIVERSITY to the STATE-Eval. The STATE-Eval’s role was to assist in providing participants for the research (evaluation) and to mail out surveys from the prepared packet received from the EVALUATOR. The basic tools used in this collaboration were statistical analysis methods typical to research used and provided by the EVALUATOR, existing network of community members, and participants to complete the study. The UNIVERSITY’s contribution to the tools was the existing network of community members.

With the assistance of the PARTNER, the UNIVERSITY congregated the STATE-Agencies and the PARTNER into a two-day meeting to discuss what type of issues should be assessed on the evaluation (discussed in Activity System #2). The meeting was held within the UNIVERSITY’s state, and the STATE-Agencies, PARTNER, and EVALUATOR all traveled from out of state to the meeting. The travel expenses were primarily paid through grant funds. The STATE-Eval agency participated in the study by providing addresses of foster parents in its state for participation.

While some rules for Subject #1 and Subject #2 overlapped, such as meeting the deadline requirements of the granting agency, there were several rules that were unique to each organization. Rule #1 for Subject #1 was also the need to meet the evaluation criteria of FIPSE-LAAP, the granting agency. As mentioned earlier, the evaluation was a condition of receiving
the grant. The requirements of the LAAP were somewhat flexible to meet the various types of projects funded by the LAAP grants. Rule #2 for Subject #2 required the inclusion of rules for statistical methods and rules for good practice in research. The EVALUATOR needed to be concerned about following the proper statistical and research methods, while accommodating the multiple INTER-organizational objectives, to ensure there was little bias or other issues that could diminish the quality of the findings. As stated earlier, the object of this inter-organizational collaboration was to evaluate the PDC. The synergism the inter-organizational activity created was the objectivity of the evaluation, an external and unbiased evaluation. By having an external evaluator, it provided more confidence in the PARTNER and STATE-Agencies that the project not only was on target for being a valuable learning tool but that they could access foster parents at a distance. The UNIVERSITY staff mentioned how the results of the objective evaluation were a turning point for them in gaining the confidence of the STATE-Agencies and PARTNER as the UNIVERSITY staff felt the partners were not completely sure the foster parents would be ready for a distance learning method at the beginning of the project.

**Contradictions and Tensions**

The contradictions and tensions for the evaluation activity are reflected in Figure 37. The first contradiction in the Evaluation activity (Contradiction #1) developed from the proposed evaluation plan. The EVALUATORS met with the UNIVERSITY and partners (PARTNER and STATE-Agencies) to listen to what they wanted out of the evaluation. It was mentioned earlier in this analysis chapter that the UNIVERSITY felt the PARTNERS and some STATE-Agencies were uncertain the end users (foster parents) were ready for this distance learning method. So the UNIVERSITY was also hoping to gain insight into the technical aspects of the end user, such as
their comfort level and attitude toward distance training. The EVALUATORs designed an evaluation plan to accommodate the inter-organizations’ inquiries about this project. Once proposed, the granting agency reviewed the evaluation plan and, given that they were the ones providing a large portion of the funding for the project, were not happy with the plan. This is a contradiction and not a tension because it was not something that the UNIVERSITY or inter-organizational partners could control. The funding agency had the ultimate say in the rules and requirements of the evaluation.

The LAAP Final Project report identified Contradiction 1:

[The] FIPSE program officer expressed concerns that [the evaluation plan] was too ambitious and we struggled to narrow the focus and concentrate on identifying the key aspects of the project. The task became more difficult as we learned more detail about the true complexity of the multi-state environment that we are working with and the exigencies of our target population. Some things that looked reasonable at the outset suddenly looked much more challenging, as we got deeper into the process…. In the end, we looked at the project and concluded that two issues stood out above all the others. First and foremost, this project is about increasing access to training; hence, a major component of evaluation should focus on this…. Secondly, we are interested in assessing learning outcomes. The co-trainer model has been very well received for live training use. We wanted to assess how successful our efforts had been in transferring this process to multimedia distance delivery methods. (LAAP Final Project Report, UNIV-Dir, 11/15/2005)
Figure 37. Activity System #8, contradictions and tensions.
Tension #1, Final CD Submission, and Tension #2, Feedback from States, were related and influenced Contradiction #2, Research Development Time. As stated in the Design activities, the delays in getting feedback from the state partners slowed down the whole design and development process. In the second year, the team revamped the design process to a more efficient process. The delay did have a ripple effect, which can be seen in the evaluation of the product. The EVAL-Lead stated, “Delays and communication difficulties among partners have posed challenges to the evaluation effort. It has not always been clear what the ‘final word’ has been on issues of design and evaluation. Sometimes information has been slow in coming forth, thereby making planning for and development of evaluation activities difficult.” (Evaluation Report – August 2002 – EVAL-Lead). Because the design of the first module took much longer than expected, the development of the module was on hold until the STATE-Agencies and PARTNER could approve a final script. The module being evaluated was the first module of the nine module project. The first module not only took longer to design, but it also took longer to develop. The UNIVERSITY hired new staff, purchased new software to create the multimedia training, and created new templates for the multimedia screens. The learning curve for the development team consumed additional time on the first module. The later modules took less time to create because they were able to re-use some of the templates created on the first module. As such, by the time the first module (Module 5) was available on disk to submit to the EVALUATOR, much time within the project timeline had already been consumed. This left the EVALUATOR with less Research Development Time (Contradiction #2) to design instruments based specifically on the final project. While this contradiction set the EVALUATOR behind schedule, the EVALUATOR stated:
The Foster Pride Digital Curriculum Project is significantly behind schedule. Consequently, evaluation activities for the project are also behind schedule. However, it is the External Evaluator’s opinion that the product developed so far is of exceptional quality and constitutes an excellent application of distance learning technology. It is the External Evaluator’s opinion that the delays have been worthwhile and excusable. (LAAP Program Annual Progress Report 2002 – EVAL-Lead)

The Evaluator’s comments demonstrated that the contradiction and tensions in this activity related to the delay were acceptable due to the perceived quality of the outcome. The last tension mention here, Tension #3, Participation, was more an external tension for the Evaluators that did not directly impact the inter-organizational collaboration. The Eval-Lead stated that “The majority of testers encountered few problems and rated the training favorably. A few testers encountered technical problems with the CD-Based training. Technical difficulties appeared to account for negative reactions to the training (EVALAUTOR Report – Pilot Tester Evaluation of Module 5: Report of Results, March 2001). This is perceived and included as a tension for two reasons. First, the development team worried about any potential negative feedback that would come out of the evaluation as the value of the evaluation aspect would help gain support of the STATE-Agencies and PARTNER. This tension made the development team work diligently on correcting any potential technical problems before sending the disks off to the EVALUATOR. Secondly, the EVALUATORs could not receive responses if the participants did not clearly understand the submission guidelines or encountered any technical problems with the survey. In one of the studies conducted for the PDC, the EVALUATORs requested the participants to respond electronically, but they had received only two responses. The EVALUATOR then sent out the survey on paper with a self-addressed envelope, which increased the response rate. Overall, the contradictions and tensions in the evaluation activity were much milder than the two previous themes, Design and Development. I interpret this based on two reasons. First, the EVALUATOR was an external organization that was paid for their
service. They did not have anything to gain or lose through the results and were not influenced by any self-enriching motives. For instance, each STATE-Agency could have sought outcomes based on their needs or since the UNIVERSITY and PARTNER profit from future sales, they could have been more interested in slanting results in favor of the product. The EVALUATORs’ objective was motivated by their service as a professional external evaluator. Secondly, I perceived there was less tension in this activity because the EVALUATORs, along with the other participating organizations and individuals involved in this project, found a moral value to creating this foster parent training. This is perceived by the comments in their reports, as reflected above. The quality of the product, as the Evaluator stated, was worth the wait and delays. Their positive perspective helped reduce the tension of this activity.

In this section I explored the evaluation activity. This activity was completed by the third year of the project. The development team (UNIVERSITY) still had eight additional modules to create. During the remaining development time, evaluation was often conducted for each disk by the internal staff of the development team. The development team and content writers reviewed the modules and disks as each was completed. The UNIV-VideoDir explained:

I was asked to go through every once in a great while, was to go through a session and see how it flowed for me. I never really had any input on its look, or its flow. Mainly what I was looking at was - is something spelled correctly, is something still in the right place. Or if I go from this page to that page does it trans.–does it move to the next, to the next activity that I’m supposed to do (personal interview with UNIV-VideoDir).

The evaluation process paralleled the three previous themes to some degree. There were always individuals who reviewed the content as it was created. However, as the development process picked up speed, less evaluation and reviewing occurred from the inter-organizations. The PARTNER-PSME was the primary inter-organizational content expert who reviewed each completed module in addition to smaller pieces of the modules, such as a video clip. The
UNIVERSITY staff then reviewed the technical aspects to ensure functions such as navigations buttons, interactive material, video and audio materials were in sync and worked properly in addition to detecting any spelling errors. Up to this point, I have discussed some early stage evaluations, basically the alpha testing of the PDC. After all the modules were completed, the development team (UNIVERSITY) wanted to conduct a beta test with the actual end users. The next section discusses the first implementation and full-blown Stage 1 study conducted with all the modules completed.
APPENDIX V

ACTIVITY SYSTEM #9: IMPLEMENTATION
After the PDC was produced, the organizations worked together to conduct a Stage 1 study to assess implementation needs. The ASSOCIATION was the first organization to sign a licensing agreement with the UNIVERSITY to use the PDC product. The UNIVERSITY and ASSOCIATION negotiated within the licensing contract to conduct research in the ASSOCIATION’s broad geographic area. The P.R.I.D.E. Model of Practice, which is the model the PDC product is based on, is used globally to train foster parents. The ASSOCIATION was from another country and not one of the original state partners. I mentioned in the Design Theme how the PDC needed to be designed on a global perspective and that individual state laws pertaining to child welfare needed to be reshaped and visualized for an all-encompassing global perspective. Since the PDC could be a globally distributed product, having an international organization evaluate the product provided a glimpse at the versatility of the product. This research agreement added a new inter-organizational collaborator, the ASSOCIATION, into the activity process. The licensing agreement allowed the ASSOCIATION to duplicate, distribute and use the PDC for training purposes, and in exchange the ASSOCIATION recruited trainers, staff, and foster parents (called resource parents in the ASSOCIATION’s country) as research participants to collect and analyze information regarding the PDC diffusion. Evaluation Activity System #8 also consisted of a Stage 1 study, but I distinguish this section as the Implementation Stage 1 Study because the purpose of this dissertation and analysis was to study the inter-organizational activity. This beta Stage 1 study activity was a separate activity from the earlier mentioned evaluation activity. The Stage 1 study was not a requirement of the grant and focused on the implementation needs of the PDC. During the Implementation Stage 1 Study, my role as participant from the development phases changed to principle researcher of the Phase I study. At
this point, I had not begun my research into this dissertation so my role in the Stage 1 study was as a community member.

This activity system examined the process of conducting a Stage 1 study to prepare for implementation, much like a methodology section of research in which I examined the steps in which the research is conducted through the inter-organizational collaboration. However, in this chapter I examine the methodology with an activity theory perspective using a tetrahedron activity system to represent the subjects, roles, division of labor, tools, and such that were part of the activity system. The tetrahedron of Activity System #9, Implementation Stage 1 Study, is seen in Figure 38.

In this activity, the first process was to create a research advisory committee for participants in this activity (see Figure 39). As mentioned, a research component was negotiated within the licensing agreement so the ASSOCIATION sponsored the research for the UNIVERSITY. The main subjects in this tetrahedron activity system are Subject #1 as the UNIVERSITY and Subject #2 as the ASSOCIATION. The core advisory committee consisted of five members; two members from the ASSOCIATION, two members from the UNIVERSITY (including the researcher of this paper), and the PARTNER’s Primary Subject-Matter Expert (PSME). The PARTNER-PSME acted as a neutral community member for both Subjects with a research agenda for the PARTNER. The researcher of this paper was a member of the UNIV’s development team; however, the role in this activity was as the principal researcher for the advisory committee, and as such, she was drawn into this activity through a community member connection.
Figure 38. Activity System #9, Stage 1 study and implementation.
I had started my doctoral studies at the time the Implementation Stage 1 Study advisory committee was being created and requested permission to be the principle researcher of the study. The advisory committee had a three-fold mission: to 1) inform the ASSOCIATION about matters pertaining to their particular implementation needs, 2) inform the UNIVERSITY about matters pertaining to the perception and performance of the CDs’ technical aspects, and 3) inform the PARTNER and researcher about general best practice needs for implementation and perspectives of the distance learning training materials. This three-fold mission served as the overall Objective of the activity to Evaluate the PDC Implementation.

Figure 39. Participants in Stage 1 study.

Once the advisory committee was created, the group began the process of designing three research instruments to fulfill each of the research interests. The three instruments were similar for the majority of questions, yet each had unique demographic questions and were named appropriately for the 1) trainers, 2) staff, and 3) end user (note, the end user are the foster
parents, aka resource parents, and caregivers). The five-member core advisory committee was in three different geographical locations and, thus, met on several occasions through conference calls. As the committee members gave input into designing the instruments, they also mapped out the Stage 1 study and overall coordination of the study through the conference calls and emails.

The advisory committee divided the tasks of the Stage 1 Study: 1) instrument development, 2) gathering agency leads (for participants), 3) data analysis, and 4) technical consultation. The ASSOC-LeadTrainer and the UNIV-Researcher collaborated extensively on the instrument development and research communication documents to inform agencies about the Stage 1 study and its purpose, process, and technical issues prior to sharing and to gather feedback from the remaining advisory committee members. Appendix H identifies the final version of the End User Questionnaire. The UNIV-Researcher and ASSOC-LeadTrainer created an Information Letter (Appendix E) to inform agencies about the process and purpose. The UNIV-DesignCoor and PARTNER-PSME provided a PDC User Guide and PDC Trainer Guide to share with the participating agencies. The ASSOCIATION created the Stage 1 Agency Lead Activity List, and PDC Promotional Poster, which were reviewed by the advisory committee, and was in charge of gathering Agency Leads (ASSOC-Leads). The geographic span of the Stage 1 study was widespread and required local agency members to volunteer an ASSOC-Lead, a staff member within the local office to assist in the distribution of Implementation Stage 1 Study. The researcher handled the ethics review to conduct the study in the United States, while the ASSOCIATION handled the Canadian permissions. The researcher also handled the data analysis to maintain the confidentiality of the participants; therefore, the UNIVERSITY,
ASSOCIATION, and PARTNER did not view raw data. The UNIV-DesignCoor provided the technical consulting for the use of the CDs.

The research permissions were part of the rules of this activity for both inter-organizational subjects. Rule #1 for Subject #1 (UNIVERSITY) in this activity required that an Institutional Review Board (IRB) approve the study of humans and follow the guidelines of research. Subject #2 (ASSOCIATION) also needed to have the research instrument and process approved to assure compliance of Canadian research practice. Subject # 2 had 2 additional rules: 1) compliance with the UNIVERSITY’s licensing agreement to partner with the UNIVERSITY on research and 2) a deadline to meet reporting of the findings from the research. During the process of creating the instrumentation tools for the research and the communication tools, the ASSOCIATION also sought out volunteer agencies to participate in the Stage 1 study. A total of 25 out of 53 child welfare agencies in the region volunteered to participate, with one agency staff member (ASSOC-Lead) from each agency assisting in the dissemination of the research within the local agencies. The ASSOCIATION created several communication memos to the ASSOC-Leads. Once the research instruments were created, the questionnaires were placed on Survey Monkey. This tool reached a broad geographical area for electronic submission of the questionnaires. A preliminary test was conducted by five members within the ASSOCIATION’s agencies to ensure clarity and ease of access/use of the online survey program, and arrangements were made to mail the training CDs to the participating agencies. Participants were instructed to complete a training module on the CD prior to completing the questionnaire. The ASSOC-Leads and the Participants were part of Subject #2’s community members.

The ASSOC-Trainer prepared the ASSOC-Leads within one month of implementing the Stage 1 study. The ASSOC-Trainer conducted several conference calls consisting of no more
than five ASSOC-Leads at a time to ensure adequate feedback and participation in the discussions. Additionally, the UNIV-DesignCoor from the development team was available to provide technical consultation as the ASSOC-Leads prepared their agencies for the Stage 1 phase. Each ASSOC-Lead was in charge of promoting awareness of the Stage 1 study within his/her agency. ASSOC-Leads were directed to gather multiple participants from all three categories (Trainers, Staff, and End Users) and distribute the Research Information Letter and CDs. The questionnaires on Survey Monkey accepted responses for one month. After the data were collected, the ASSOC-Trainer developed an Agenda and Questions for a follow-up meeting with the ASSOC-Leads. The advisory committee reviewed the Agenda and Question follow-up. The advisory committee then met at the ASSOCIATION’s office with several of the ASSOC-Leads to participate in Focus Groups on the Stage 1 study process and to assess the individual agencies’ experiences and issues regarding the Stage 1 study. The researcher interviewed a few of the ASSOC-Leads to verify the proper research procedures had been performed at each agency. The Community Members for Subject #1 of this activity were the researcher and the PARTNER-PSME. As stated, while the researcher was part of the UNIVERSITY development team, in this activity the research served as a Community Member #2 to be an objective member of the advisory committee. The PARTNER-PSME played an advisory role for both subjects.

A summary of the tools used in this activity were the CDs, communication tools (conference calls, meetings, emails, word processing), research software tools (SPSS software, NVIVO, and Survey Monkey) and the Agency Leads, who served as the liaisons for gathering participants and distributing information about the questionnaires. The advisory committee used several tools to communicate among the committee members and to reach out and communicate with the community members. As mentioned, the advisory committee was from three different
geographic locations, so to plan the Stage 1 study, the committee relied on email and conference calls during the initial planning. The committee also arranged for face-to-face meetings at the ASSOCIATION’s central office. To develop the communication tools that would be sent out to the ASSOC-Leads and participants, the team used word processing software. Lastly, the Stage 1 study was to evaluate the PDC training material, which was on CDS. The UNIVERSITY needed to supply the CDs to the ASSOCIATION, which then disseminated the CDs to the individual agencies participating in the Stage 1 study.

Contradictions and Tensions

One contradiction and three tensions developed during the Stage 1 study, as illustrated in Figure 40. The UNIVERSITY needed to supply the CDs to the ASSOCIATION. Since the ASSOCIATION was located outside the country, the delivery of the shipped CDs was stalled in the postal customs department. This delay was a contradiction between inter-organizations that involve crossing over country lines and the associated dilemma of dealing with customs. The duration of the study was already set and needed to proceed. As the time quickly drew toward the beginning of the Stage 1, the CDs still had not arrived. To address the contradiction, the UNIVERSITY loaded a vehicle with enough CDs and drove the nine hours to deliver the product to the ASSOCIATION’s office just a day or two before the Stage 1 was to begin.
Figure 40. Activity System #9, contradictions and tensions.
The second tension in this activity involved the research development time. The ASSOCIATION had a contract with the UNIVERSITY in which it agreed to the research. Furthermore, the ASSOCIATION also wanted to conduct its own research to assess this new tool for use in their agencies. It was decided the ASSOCIATION would only have the questionnaires open for one month. The advisory committee worked on getting a focus for the questionnaires and then developing the questionnaires. There were several iterations during the process of reviewing and rewriting. Once the solicitation communication and instruments were developed, they needed to go through the Institutional Review Board process. The ASSOC-Trainer spent that time gathering and preparing the Agency Leads. The dissemination of the study was over a large geographic area so the Agency Leads helped to gather participants and pass out the CDs to the participants. The Agency Leads were directed to solicit all members of their agency (trainers, staff, and foster parents/resource parents). After the questionnaires were completed and closed, the committee met with the some of the Agency Leads in focus meetings to evaluate the research process. Several of the Agency Leads acknowledged that the time restraints for the research caused tension for them. As the researcher, I then began the process of analyzing all the data. One of the tensions that caused a delay in the design activity was that there were too many people (partners) involved in designing the material. Those partners were volunteering and had other commitments that took priority over their input and review of the design process. I felt very much the same on this research activity. I was a young doctoral student at the time of the study and eagerly asked if I could volunteer to be the principal investigative researcher on this Stage 1 study. As a parent, working full-time, and attending graduate school full-time, I also felt the tension of completing the research and writing a report within the time limits. Figure 41 summarizes the research development time. While the time limitations were considered a
tension, as a whole, the group felt this tension pushed them to stay on track and complete their tasks in a timely manner.

Figure 41. Stage 1 research development time.

The third tension in the Stage 1 study was the multi-purpose needs analysis. The UNIVERSITY was interested in the Stage 1 study to uncover any technical problems that might have been missed during development. Additionally, it hoped to have some data to support the product that could be used in marketing. The PARTNER-PSME was also interested in the marketing potential of the product. Additionally, the PSME wanted to find out if there were any training needs from the study and guiding principles that could be extracted from the agencies’ experiences to develop implementation guidelines documentation. The ASSOCIATION wanted to know if there were any training needs but also sought out perspectives on the quality,
acceptance and implementation needs of the training material. The PDC product was a distance learning material. I also had my own research agenda to gain insight into the end-users’ perspectives on the distance learning material and any influencing factors that might have impacted their perspectives regarding the material. There were concerns about whether the distance learning material would be acceptable to the staff and end users. Given the multiple subjects involved in the research, there were debates over what questions to ask and how to state the thoughts of the committee. For instance, the term “foster parent” on the questionnaires was re-worded to “resource parents” to reflect the geographically correct terminology for the same meaning. While the advisory committee tried to keep the majority of the questions the same for each questionnaire (trainers, staff, and end user), each group had some unique questions. In total, there were 195 questions among all three groups. Given that the questionnaires were very time consuming to complete, the research offered to provide one person a laptop through a raffle of all the participants. The Agency Leads acknowledged that the raffle helped to solicit volunteer participants; the participants were excited about the raffle portion.

Although this activity had a few tensions and a contradiction, the response to the implementation Stage 1 study was successful at obtaining a broad range of participants, reaching 5% to 7% of the ASSOCIATION’s projected population for the trainers, staff, and resource parents (caregivers). The Stage 1 study also served as a status check point on the inter-organizational collaboration. In essence, the Stage 1 study was an evaluation of the overall objective of the inter-organizational collaboration to produce a distance training product. The organizational activities up until this point had all been based on the activity theory and a systematic approach to design and development, whereas the secondary study results identified whether the organizations had designed the product effectively in the eyes of the actual people
using the products. The results from the Stage 1 study thus became a checkpoint in the process of
the inter-organization’s design and development of the PDC. If the product was perceived
favorably at this point but did not succeed in full integration into the agencies, the failure of the
product's success could be seen in the implementation and marketing processes.

Stage 1 Study Results

The results for the Implementation Stage 1 Study can be found in Chapter 4; however, a
summary of these results is shown below.

KEY FINDINGS OF PDC (from 2007 Stage 1 Study)

- 86% of resource parents have access to a computer, while 79% use computers
- 98% of resource parents found the PDC content useful, while 96% would recommend
  this learning resource to others
- 94% of resource parents would like more training in this format
- 96% of trainers agree or strongly agree the PDC will assist in resource family training
- 80% of adoption staff found the PDC content useful to them
- 83% of children’s services staff found the PDC content useful to them
- 77% of staff believes the PDC would be useful training for all agency staff
- 87% of staff believes the PDC helped to increase their understanding of the needs of
  children in care
- 89% of staff believes the PDC is helpful in understanding the importance of teamwork in
  caring for children
- 90% of staff believes the PDC is helpful in their understanding of the role of resource
  parents
The Stage 1 study provided an overwhelming acceptance from the end users of the PDC. Ninety-eight percent of the end users found the information on the training CDs useful and 96% would recommend the product to others. The physical creation of the training materials into a distance learning product, from a development perspective, could be considered a success based on these data. However, the product had not reached its full potential in dissemination, and it is in this final analysis of activity systems that the inter-organizational collaboration began to disintegrate. As I had mentioned a few times, the activities in this analysis did not follow a strict linear path. Marketing of the digital training material began shortly after the grant was approved. The UNIVERSITY, PARTNER, and STATE-Chair began traveling to conferences and marketing this training material in 2000 and continued attending various conferences during the development of the PDC. The greatest of the marketing labor was expected to be after all the training modules were completed.

In the original grant, it was implied that the UNIVERSITY would be the lead responsible for the development of the training material into a digital format and the PARTNER would “take the lead role in national diffusion of the new digital curriculum” (LAAP Proposal, n.d.). In other words, the PARTNER’s role was to contribute to the marketing of the materials, as stated by several participants interviewed for this study. The UNIVERSITY brought into this collaboration the technical skills of digital creation, whereas the PARTNER was a national publisher and distributor to all child welfare agencies in the nation and would therefore be the link between the developer (UNIVERSITY) and the state agencies. Figure 42: Activity System #10 reveals the two central subjects in the inter-organizational collaboration are Subject #1 as the UNIVERSITY and Subject #2 as the PARTNER. This activity looks at the three-dimensional tetrahedron
activity system to examine the relationship between the subjects. The objective of this activity was to market and distribute the PDC.

It was intended at the beginning of this partnership that the marketing and distribution of the PDC would be an inter-organizational collaboration with the PARTNER focusing on the marketing aspects and the UNIVERSITY providing the materials (CDs). The subjects participated in marketing of the PDC as soon as the grant was awarded and before the products were created. The tools used for marketing were conferences, marketing materials, and pricing. The conferences helped provide feedback to the design and development in the early stages and were used to help promote the PDC and network with various state agencies. There was a broad range of marketing materials developed. The PARTNER-PSME produced content related instructions for implementing the PDC into practice and provided other content related information for the marketing materials. The UNIVERSITY graphics team developed printed brochures, animated samples, promotional disks, and a website to help market the PDC. Additionally, pricing was considered as a tool in the marketing because there were two different methods for purchasing the product. This will be discussed later in the tensions section.
Figure 42. Activity System #10, marketing and distribution.
A division of labor between the two subject organizations, the UNIVERSITY and PARTNER, was presumed from the beginning. The original choosing of the PARTNER was due to its connection with child welfare agencies. Not only was the PARTNER a globally recognized advocate for child welfare, but it also was a publisher that marketed materials such as books, training, and its own journal on child welfare. The UNIVERSITY had expected that the UNIVERSITY’S role in the product would be minimum after the development of the products. The activity system was devised based on the assumption of the roles in marketing and distribution. Community Members #2 for Subject #2, PARTNER, were a key factor for determining the partnership. As mentioned, the PARTNER had the connection to a broad range of state agencies to promote and market the PDC. However, as the development of the material progressed, Subject #1 (UNIVERSITY) grew to develop its own Community Members #1, which included state child welfare agencies, the STATE-Chair of the foster parent training model, and a vendor of duplicating the products onto CDs.

The rules for the marketing and distribution of the PDC drastically impacted the progress of the Marketing activity. Subject #1 had to deal with a rule within the child welfare industry on the decision pace of licensing the product. Decisions were not made quickly for agreeing to a new training product and the pace was impacted by changing personnel within the state agency (personal interview with UNIV-Marketing). Subject #2 also had to deal with a substantial rule at the time the marketing and distribution began. Subject #2 encountered major budget cuts at this time and had to let go of the key players within the PARTNER organization who had worked on the PDC project. Not only did the PARTNER have budget cuts, but the UNIVERSITY also had diminished the grant funds by this point. It is not identified on the activity system whether the UNIVERSITY encountered this financial loss as a rule or issue because it was not mentioned in
the interviews by either the PARTNER or UNIVERSITY participants. It was mentioned in this activity system for the PARTNER due to comments made from both sides (UNIVERSITY and PARTNER). The UNIVERSITY continued to fund the marketing and distribution with the funds created from any licensing agreements they acquired.

Contradictions and Tensions

Contradictions and tensions within an activity can sometimes create innovative solutions that help an activity grow. This research examined this innovation of a solution during the design activity. That was not the case for the marketing and distribution activity. This activity revealed one contradiction and four tensions that impacted the synergy of the partnership. The impact was so great that the inter-organizational collaboration broke down between the UNIVERSITY and PARTNER. Figure 43 displays the contradictions and tensions developed within Activity System #10: Marketing and Distribution.

The activity revealed a contradiction due to budget cuts. There were three main staff members at the PARTNER organization connected to the UNIVERSITY and this project development, and all three were let go as part of the organizational restructuring due to the budget cuts. Two of the PARTNER staff were interviewed for this research. One interviewee explained that when he was let go, he had no warning. He was told to gather his belongings and immediately leave the premise. It is a typical practice for organizations, the interviewed participant stated, for higher up employees or employees who have access to sensitive organizational records (personal interview with PARTNER-Dir).
Figure 43. Activity System #10, contradictions and tensions.
The budget cuts, thus, caused a break in the key players of the inter-organizational collaboration with no transitional period to familiarize additional PARTNER staff with the UNIVERSITY staff. PARTNER staff who were assigned to take over the PDC collaboration did not have a pre-existing relationship with the UNIVERSITY. The UNIVERSITY staff interviewed for this research explained how they felt disconnect with the PARTNER and were uncertain of who they should be working with within the PARTNER organization for the marketing and distribution. One of the PARTNER staff stated that they felt the ownership of the project had been lost in the re-organization of the PARTNER since the new staff had not been directly involved over the six years in the development of the digital training material. Another participant from the PARTNER organization stated that the PDC was considered a “feather in their cap,” but the value of the PDC did not weigh as much as other products the PARTNER marketed and published.

The first tension identified a confusion in the roles and responsibilities of the marketing and distribution activity. The UNIVERSITY had hired a staff member to handle the marketing of the PDC. This new UNIVERSITY member in the inter-organizational collaboration joined the group about the time the PDC was first being implemented (Activity System #9) in September 2006. The UNIV-Marketing member was one of the participants interviewed for this research. She explained that there was no clear communication with the PARTNER for the marketing and, as she put it, she was “flying solo” (personal interview with UNIV-Marketing). In other words, the UNIVERSITY was marketing the PDC with, what she felt, was very little to no collaboration on the part of the PARTNER. As stated several times throughout this research, it was expected that the PARTNER would contribute the majority of the collaboration to the marketing given its link to the state agencies. The lack of clear roles and responsibilities could have been a mixture
of the contradiction with the PARTNER’s budget cuts and re-structuring. The PARTNER re-assigned roles in the organization, which created the contradiction of having staff in the PARTNER organization who were perhaps not clearly assigned to help market the product (as perceived by the participants of this research). The UNIV-Marketing staff was also a new member of the UNIVERSITY organization, so both sides had new members in the inter-organizational collaboration. However, there was one existing link that remained. The PARTNER-PSME (principal subject-matter expert) who had been let go from the PARTNER organization became an independently paid consultant for both the PARTNER and the UNIVERSITY. The PARTNER-PSME consulted with the PARTNER primarily on the model of practice for the original face-to-face training material. The PARTNER-PSME also provided consulting for the UNIVERSITY for the PDC digital training material. The UNIV-Marketing member explained that because the UNIVERSITY did not feel it were getting support and marketing support from the PARTNER, the UNIVERSITY “took control” of the marketing (personal interview with UNIV-Marketing). The UNIV-Marketing member worked on marketing to the different agencies, the UNIV-DesignCoor provided technical assistance for distribution and technical questions, the PARTNER-PSME provided content-related assistance during the marketing and distribution, and the graphics department at the UNIVERSITY developed the marketing materials (personal interview with UNIV-Marketing).

The second tension examined in the data collection identified the methods of distribution as a conflicting tension between the two organizations. The two organizations had different perspectives about how to price the product. The UNIVERSITY and the PARTNER both had experience in publishing. The department at the UNIVERSITY that developed the PDC product had offered licensed telecourses for decades. The telecourses were video formats of college
courses that could be viewed as a distance learning course for credit. The video courses could then be broadcast on the college’s educational TV channel. This form of licensing the material derived from broadcast stations that license sitcoms and other television shows. The PARTNER was more experienced in publishing similar to that of a book publisher, where books were sold on an individual basis as needed. For instance, if a school wanted to purchase books for a class, it would purchase a set number of books to accommodate the expected number of students in the class. In essence, video traditionally is licensed for a set length of time whereas books are traditionally purchased in a set quantity.

The UNIVERSITY and PARTNER had different perspectives on how the product should be sold based on their cultural influences. During the data collection, I was able to interview two different regional organizations. From my analysis, neither licensing nor selling by individual copies would have been inappropriate. One organization I interviewed was for a very large and geographically spread out region. The option for licensing made sense since the child welfare agencies needed large quantities and the licensing offered an economic advantage (personal interview with ASSOC-Lead). The other organization was much smaller. While that organization did spread over the entire state’s region, the population was much lower. That organization was better suited for only purchasing a set number of training materials and sharing the material throughout the region (personal interview with STATE-Reviewer). While there was a conflict about how to price and distribute the training materials, the tension created from these conflicting perspectives involved a lack of united direction. The PARTNER began to sell the training materials on its website as individual disks, while the UNIVERSITY sought out agencies interested in licensing the complete set of modules.
The third tension the UNIVERSITY staff acknowledged was that when the last of the training materials were being burned onto disks, questions about who owned the copyright to the original materials (from which the CDs were derived) began to surface. As stated earlier in this research, this inter-organizational collaboration was about transforming a pre-existing face-to-face training model into a digital distance learning format. When this collaboration began on the PDC in 2000, the original material was owned by a STATE agency who agreed and was a secondary partner on this collaboration. However, the rumors about the ownership of the original material claimed the copyright had been transferred from the STATE to the PARTNER just before the director of the STATE agency resigned. There did not appear to be question about the copyright ownership of the PDC material that this inter-organizational collaboration created. The PDC ownership was likely divided between the UNIVERSITY and the PARTNER as principle partners in the grant, although clear acknowledgment of this was not stated in any interview.

As the PDC was just about to roll out to all the agencies and the marketing phase was scheduled to hit full force, the rumors and uncertainty created distrust and friction between the inter-organizational members of this collaboration. I did not delve into this tension as it was not the focus of this research on the activity theory perspective of the inter-organizational collaboration. I mention in this research the topic because the data analysis revealed this tension as an issue within this activity affecting the trust of the partnership. The UNIVERSITY proceeded the marketing and distribution of the PDC through independent efforts when the collaboration failed. The UNIVERSITY utilized relationships it had established during the development process with the STATE-Agencies.
The fourth tension identified by the UNIV-Marketing was partly an effect of Contradiction #1. State agencies were the customers of the PDC product. Many non-profit state agencies were going through their own budgets cuts and occasional changes in staff. The UNIV-Marketing staff member acknowledged that one of the tensions she felt made the marketing challenging was the decision pace within the child welfare industry. She explained that she worked with one of the top five high-profile employees in the agencies. The negotiating time would last several months as the STATE agencies explored their training options. The UNIV-Marketing staff indicated that on several occasions changing staff roles in the STATE agencies extended the marketing process even longer as they moved to familiarizing and negotiating licensing terms with new members of the STATE agencies.

The participants for this research were interviewed in 2010. Since then, the UNIV-Marketing member has left the UNIVERSITY and another employee of the UNIVERSITY took over the marketing for the PDC. The UNIVERSITY and the PARTNER have not restored their collaborative efforts on the marketing and distribution of the PDC. There is no mention or marketing of the PDC on the PARTNER’s website (reviewed in 2015), but the PARTNER does continue to market the original face-to-face document. The UNIVERSITY continues to market to state child welfare agencies and improve the product. In 2014, the UNIVERSITY revised the PDC CDs to an online version.

This concludes the activity systems analysis of the primary activities in the inter-organizational collaboration of the instructional technology development and implementation of the PDC. In the next section I collectively scrutinize the findings from the activity systems to answer the original research questions.
APPENDIX X

DESIGN AND DEVELOPMENT NARRATIVE ANALYSIS
In this final appendix, I provide more details into the design and development of the PDC. This narrative analysis was developed to gain an understanding of the processes prior to examining the activity systems analysis. References in the findings chapter activity systems analysis sections refer back to this appendix for greater detail that was omitted from the findings chapter and individual activity systems analysis to provide a more reader-friendly analysis. As stated in both my literature review and conclusion, the literature on authentic instructional development processes from the development team perspective is sparse. This appendix is intended to be viewed as a contribution to the field of educational technology for literature from an instructional developer’s perspective. It is, as mentioned previously, a case study that is not generalizable or considered a model for all instructional development. The PDC project was a very large endeavor that involved hundreds of individuals from multiple organizations. This section is a summary from the key members and participants in this study on their perspectives and work processes. These participants provided their time to this research and contributed such a wealth of information that it dutifully deserves to be part of this paper as an authentic contribution to the field in their tribulations and accomplishments.

Design

The instructional design component was predominantly done to the original P.R.I.D.E. Model of Practice prior to the PDC project. It was originally perceived by the development group that they would simply be redesigning the instruction for a new delivery method. At the onset of the collaboration, the university did not anticipate the time that would be needed to redesign the material from a print instructional manual to an electronic training. The most significant influence of the inter-organizational collaboration came from within the redesign of the training,
and while an analysis of the learner was conducted within this project, the analysis focused more on the technical needs and readiness and did not focus on the pedagogical perspective. The design component was mainly conducted by the content design team. The contributors to the content design team were the UNIV-DesignCooor and UNIV-Writer, two members from the STATE-Agency, and four members from the PARTNER organization.

The intra-organizational and inter-organizational collaboration were considerable in the design component of developing the PDC. Within this area, the intra-organizational (UNIVERSITY) participants brought years of technical and creative experience, and the inter-organizational partners (PARTNER, STATE-Agency, additional state partner agencies) participants conveyed expertise in the content and instructional integrity of the product. The PARTNER-PSME, co-author of the original P.R.I.D.E. Model of Practice, was the principle subject-matter expert for the P.R.I.D.E. Digital Curriculum. He provided an example of how the collaboration in one activity occurred between the multiple organizations during the design stage by first sharing an instructional example in a class setting:

One way to support relationships with children in families is to ensure that we are supporting the child’s culture or his or her attachment or connection to their culture because unfortunately in some cases, kids are placed, for a variety of reasons, maybe they couldn’t find a caregiver in the same ethnic or racial background, or class-based background, whatever it might be. So, you know, in the classroom we have these vignettes where we say well imagine that when a child comes in your home and he’s at breakfast, he spits out the milk and says this milk is awful. What the heck, we don’t have this and this milk tastes awful. How would you respond if you were the caregiver? And then we would come up with, and this is in the classroom training, we would come up with three possibilities. Of course one is more appropriate than the other two (personal interview with PARTNER-PSME).

Then he continued:

The [UNIVERISTY] people then would say okay, let’s run with this. They would come up with this process I called it United Way barometers. You know, I think now in the fall, United Way time, when communities are raising money, it’s almost like I call it a barometer when they start putting in red when they have reached 10,000, then 15,000,
then 20,000. Well [UNIVERSITY] came up with this great way to give people instant feedback right away so that if you clicked on the right answer, the barometer would go up two notches. If you didn’t, it would stay still. I mean they came up with all that. I mean the interactivity. We may have come up with the subject-matter and say this is how we do it in the class and they say okay here’s how we’ll give [it to] people… because if I am in a classroom, I’ll give people feedback right away, but I’m not in the living room with the foster parent and she’s got to get that feedback. So they would come up with these really creative ways to give people feedback (personal interview with PARTNER-PSME).

Instructional Design Model

The advantage of developing an interactive multimedia curriculum in this case study was that the P.R.I.D.E. Digital Curriculum is an offspring of a successful pre-existing print and classroom based curriculum. UNIV-Dir explained;

One of the reasons we selected it is because it already had a lot of intellectual integrity already, pedagogical integrity, already put into it. It had been tested. It had been used in a lot of places. So we didn’t have to do a lot of that. What we had to do was make it work in a different kind of delivery, in a different media rather than a classroom setting” (personal interview with UNIV-Dir).

The P.R.I.D.E. Model of Practice was developed, in the early 1990s, over a couple years through a collaboration of several states, organizations, and individuals specialized in child welfare or related services. The P.R.I.D.E. Model of Practice is a professional development training curriculum that views foster/resource parents as professionals working in a team for the best welfare of the child. Christianson (2006) conducted a study on the original P.R.I.D.E. pre-service training and concluded the model was an effective training model for foster parents. The UNIV-DesignCoor held a high degree of respect for the pre-existing curriculum. He stated the instructional model was “outstandingly designed” so UNIVERSITY was attracted to the P.R.I.D.E. Model because of its “professional development and empowering the parent as a very
strong partner helping the child, the agency, and the birth family to do the best thing for the child” (personal interview with UNIV-DesignCoor).

The pre-existing P.R.I.D.E. curriculum was developed for print and classroom based presentations. When UNIVERSITY began working on the PDC version, the original content needed to be redesigned for the new multimedia format. However, at the time the grant was approved, there were not many multimedia models available to follow on a project of this scale. When the staff at the UNIVERSITY was asked which instructional design model, theories, or authors they used to help develop the interactive media, none of the participants interviewed could identify a specific model, theorist, or author. This aligned with other research in the field that identified many instructional designers as not particularly following one instructional design model but basing their opinions and decisions on past experiences (Ertmer et al., 2008). The UNIV-Writer explained that her instructional design model was more television based and the UNIVERSITY staff learned new models along the way.

I would say if we probably sat down and researched it a little bit better to see how others before us had proceeded in this new and emerging area, this was still all very new, how other people were taking the video medium model and transforming into this interactive computer model. It might have been helpful. It might have helped us select the right software in the beginning because researching as we were working was difficult. It might be better to do all of the research before we started the work but we moved a little fast. And we might have caught some of the mistakes we made earlier” (personal interview with UNIV-Writer).

UNIV-Writer’s interest focused on finding or designing a script format and working model for interactivity content. She noticed that what most people were using basic training models on was how to train someone well. So around the turn of the century when the PDC project was being proposed, the literature she could find pertained mostly to information on training, such as how to retain knowledge through combining audio and video together. These
trainings did not particularly meet her search for a multimedia training model that guided her, as developers, on the how-to aspects of creation.

The UNIV-DesignCoor also came from a creative approach of television.

What we wanted to do is take some of those already existing design elements [from the original PDC] and tried to figure out some ways of making them visual or making them media base. So there were tremendously rich instructional design modalities that were being used. However, what we contributed I think was that we took an already strong instructionally designed piece and we re-conceptualized it for a completely different medium….The way I approach something is I listen to the people that are content experts. I have a background in television, I have a background in education, I have a background in theater and a number of other things and I look at something and I say now, how can I make this understandable to an audience. Who’s the audience and how can I make it understandable to them (personal interview with UNIV-DesignCoor).

The videographer for the PDC concurred that his model was approached more as a creative design than an instructional design, stating “mine was pretty much self-enclosed on whatever I decided to do with the videos” (personal interview with UNIV-VideoDir). The graphic artist that was interviewed during this study, [UNIV-Graphic2], identified this was her first time working on an instructional, interactive design. She attempted to instill the instructional integrity not by an awareness of models of instructional design based on learning theory but through a logical approach. She felt, similar to UNIV-DesignCoor, her role in the instructional aspect was to make the images easily understood. UNIV-Graphic2 elaborated;

I tried to depict with the images that I chose [in] the scenario as best as I could. So some of the sexually abused issues, maybe [containing] audio, I tried to make the imagery set the tone for that particular scenario, and like some of the imagery was kind of very sad children” (personal interview with UNIV-Graphic2).

Figure 44 provides an example of implementing this instructional integrity into creative design by utilizing graphics. In this image a young girl is viewed from the downward angle, which can represent inferiority, weakness, and a victim. She is clinging to a doll and perceivably expresses
fear, anger or sadness. Before any word is read on the screen, the learner’s emotions can be intrinsically aroused.

Figure 44. Significance of graphics.

As mentioned, the creative design was merged with a pre-existing instructional design model used in the P.R.I.D.E. Model of Practice. The PARTNER-PSME explained that the PDC used a competency-based and outcome-based approach to learning similar to the original P.R.I.D.E. Model of Practice training. He explained this approach as

1. Outcome – what you want to see happen
2. Competency - look at what knowledge and skills do people have to have to achieve outcome
3. Learning Objectives – develop objectives based on the competencies

The PARTNER-PSME provided an example of this thought process and approach using the P.R.I.D.E. Model.

If I want someone to be able to help children behave in a socially acceptable manner, I look at all the knowledge and skills that a caregiver has to have in order to be an effective disciplinarian. And once I have those competencies, I then have to write down learning objectives, in other words, if someone is an effective disciplinarian he or she needs to exhibit good listening skills. That would be the objective or needs, to determine the needs that are motivating behavior….I know from my experience that there are certain methods that are more effective in reaching a learning objective then others… the best way to get
somebody to achieve a learning objective is by using a right instructional method, if you will. And the [UNIVERSITY] people, of course, they know the best technological way to get people to achieve the objective is that we use from the P.R.I.D.E. program so that if we said we needed to develop this feeling objective or doing objective or knowing objective, they had the expertise on how to design the screens and that interactivity to get those objectives….It was totally collaborative. I think it was a process I think we all contributed equally. But again they brought it to life. I mean they are the ones who brought it to life (personal interview with PARTNER-PSME).

The strength of the intra/inter-organizational relationship was highly beneficial in this area of amalgamating creative design and instructional design. An example of the outcome base approached to multimedia, as described by PARTNER-PSME, can be seen in Table 24.

Table 24
Outcome Based Approach to Multimedia.

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Level of Competency</th>
<th>Learning Objectives</th>
<th>Method for Interactive Multimedia - Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Know Something</td>
<td></td>
<td>Knowing (Cognitive)</td>
<td>Provide information – Graphic List, Narration, Case Study</td>
</tr>
<tr>
<td>Develop a Skill</td>
<td>Increases</td>
<td>Doing (Operative)</td>
<td>Illustrates or demonstrates someone using the skill – Actors, Role-playing, Animation</td>
</tr>
<tr>
<td>Demonstrate Knowledge and Skill</td>
<td></td>
<td>Feeling (Affective)</td>
<td>Text Entry, Interaction (i.e. drag &amp; drops)</td>
</tr>
</tbody>
</table>

PARTNER-PSME clarified that “when designing an interactive, multimedia program, you still have to choose the most effective method for reaching the learning objective. In other words, you don’t just choose a ‘role playing’ activity in the interactive setting because you can create it or it is aesthetically pleasing. You choose a ‘role playing’ activity if the learning objective is a skill objective.”
As a member of the International Society for Performance Improvement, PARTNER-PSME’s responsibility, as he put it, was to look at the whole human performance and technology aspect of training. PARTNER-PSME explained, “When a person’s not doing the job the way he is expected, we shouldn’t just discern or decide that we’ll send that person to training because the person’s not doing the job the way the job is expected” (personal interview with PARTNER-PSME). He stated 1) look at the causes of that disconnect or gap in performance between what a person is supposed to be doing [and] what a person is actually doing, 2) then you do a performance analysis, and 3) from that you decide what the solution is.

When it comes to training, and sometimes it’s not just training, sometimes people don’t do the job because they don’t want to do the job. If a person is totally competent and has the knowledge and skills but isn’t doing the job, all the training in the world is not going to help that person do the job. You have to find out what those causes are and try to address those causes. It’s folks like [Robert Mager, 1984] who have contributed to human performance technology” (personal interview with PARTNER-PSME).

PARTNER-PSME identified himself as a big fan of Robert Mager. Mager’s (1997) influence can be seen in the PDC’s instructional framework (see Figure 45 for sample competencies and objectives screen). PARTNER-PSME felt that Mager did a lot on development, “making sure designers and trainers would design training to achieve outcomes and learning objectives. That designers were not just putting a whole bunch of things together because they thought it would be fun or cute.” Gagne’s (1965) conditions of learning and principles of instructional designs and Knowles (1980) research on andragogy can be seen as influences on Mager. These perspectives and theories sway toward a humanistic orientation that self-actualization was a prime objective and educators assist learners in developing and achieving their full potential at both cognitive and affective levels.
Another source PARTNER-PSME felt influenced his design work on the PDC was Kirkpatrick’s (1998) *Evaluating Training Programs: The Four Levels*. The four levels include Level 1) Reaction – the degree participants react favorably to training; Level 2) Learning – degree participants acquire the intended knowledge, skills, attitudes, confidence and commitment derived from their participation in the training activity; Level 3) Behavior – the degree participants apply in their job what they learned in their training; and Level 4) the degree targeted outcomes are reached resulting from the training activity and subsequent reinforcement.

As a global trainer to trainers, PARTNER-PSME came up with three characteristics of effective training he shares with his participants: 1) training should be based on objectives, 2) trainers should adhere to individual as well as group learning needs, and 3) instructional design of the training should be balanced between active and less active, i.e. when the trainer is more active then the learner is less active and vice versa (personal interview with PARTNER-PSME). This was applied to the PDC through varied activities within the module. The design was based on
objectives and the modules provide multiple learning modes such as various forms of activity and providing text and an audio off button that permitted the user to watch and listen to the narration or to read it depending on preference. Also the modules went through sections where the learner would learn principles and concepts, view demos of how-to perform in certain situations, and then demonstrate understanding through various activities such as text entries, quizzes, and interactive drag-and-drop activities with instant feedback. When the narrator was speaking, there was no activity on that screen; the screens that did provide activity were separate from narration. From the interviews, it was clear that the technical team from the UNIVERSITY viewed the instructional design from the media delivery perspective, whereas PARTNER-PSME was an instructional designer with a stronger pedagogical perspective and connection to the literature.

**Script**

The script was the outcome of the design process and as such it was a collaborative process between the inter-organizational partners. As shown in the design process, the object of that activity was to design an instructional technology product that could be used for distance learners. The outcome of that object is the script. I saw through the design activity system analysis that the script was an activity within an activity. In other words, the content design team collaborated to create a design for the development team, but writing the script was not only about the inter-organizational collaboration. There was more to the script. It involved communicating both within the organization and with the inter-organizational partners. The script was the object of the creation of a communication tool, just as the storyboards and
screencoding process had become an intra-organizational activities to create communication documents for the whole development process.

During the analysis, I examined the different versions of the scripts. As UNIV-Writer mentioned, the group had decided to start on Module 5. In the first draft of Module 5, there was a great deal of comments inserted by UNIV-Writer. The comments were not the actual part of the script but explanations and descriptions. The information in the script explained why the script basically had or was missing some things. It also had throughout the script descriptions and explanations of instructional technology terminology. In other words, it was too wordy with extraneous information. She was including information that should have been separate from the script. For instance, Figure 46 shows the first page of the first script she translated with a list of assumptions that are not part of the end product.

It took time in the beginning but then once we got a format and everybody looked at it and said, okay this works because it kind of was of a combination of, if people looked at the script even though you [are] the first generation of the script, people looked at it and had suggestions and you modify it and then you end up with the multimedia script you now see because we had to figure out where to put timecodes and how to identify the screens. All that was a process of a group figuring out how to make this a multimedia script (personal interview with UNIV-Writer).

It’s understandable her motive was to inform the readers (the inter-organizational partners) to first, make sure they understood what she was trying to do, and second, make sure they understood the terminology. However, the script should only have information that is necessary to translate the design. During the first module, UNIV-Writer had narrowed down a clear system for writing the interactive script.
Module 5

Session 1: Respecting and Supporting Child/Birth Family Ties

Assumptions:

1. There will be at least two narrators who will be used interchangeably throughout the program.
2. The overview of PRIDE and instructions on how to use the programs will be taken care of elsewhere.
3. There will be film footage of a group of foster parents who will comment on various aspects of the training. This could also be done using digital still photos and voiceovers. These excerpts will be referred to as Foster Parent 1, 2, etc. If we end up using this technique, we should create a consistent case study with the foster parent so the user will have continuity. So, they should introduce themselves briefly and say a little about the foster children in their homes.
4. There will be a series of vignettes illustrating concepts in the training. The exact number of content of these vignettes will be determined by CWLA and Governor's State.
5. Most screens should have some sort of graphic in addition to the text. The nature and type of these graphics need to be discussed with CWLA and Governor’s State.
6. This outline should be viewed as a rough draft of a storyboard.

Note: An interaction screen means that the user will have to interact with the program in some way, usually by clicking on a response or by entering some text.
As she proceeded through the modules, less extraneous information was included in the document.

I would cut and paste in little cameras so that the cameras, the camera icons that people see, so they know that part was going to be video. Then I, you know, voice over, you know it's a script, if you look at the script which I know you did see them, that was the very first design I came up with after reading the modules. Just how do you, I had to hand something to you, because people need things to react to. You see, because you need a digital something to react to. So that first script was the design (personal interview with UNIV-Writer).

Below is a description of an interactive script based upon what was eventually used for the PDC. Keep in mind, this description of an interactive script was designed for instructional media and specifically for the needs of the PDC project.

The interactive script is the original written version of an interactive product before it is created. It is broken up into a collection of screens. A screen represents a digitally created image displayed on some light-emitting monitor which may or may not contain motion. Each screen can contain a combination of navigation buttons, video, audio, graphics, text, animation or interaction. Only unique navigation is noted in the script. A screen does not have a set time length but is determined by either the activity occurring within the screen or the end user through navigation options. It is typically a separate piece to a larger activity, lesson, or purpose. For the PDC, the interactive script provides; 1) Title of Project, 2) Version of Script (with date), 3) some type of screencode to identify the location of sequential and non-sequential screens within the product, 4) unique title to each screen, 5) icons to identify type of screen, 6) identification of the types of interactions and activities on the screen (i.e. video, drag and drop, text entry, narration...), 7) the text that would appear on the screen, 8) a visual description of the screen activity, 9) title to additional video scripts on screen (with or without the video script
incorporated – likely depending on length/size), 10) timecode for any video or audio (i.e. sound bites of audio or video clips to add to the screen), 11) sample visuals on a screen, 12) page numbers on each page of the script. Figure 47 shows a sample page from one of the scripts in the PDC.

Figure 47. Example interactive script.
In this script, screen 08:01:03:14 – Same time, Different Meanings is an animation with an audio icon, representing a voice over (someone speaking without seeing them). The image in Figure 48 shows how it looked after it was created. The two circle icons moved across the page at different speeds to represent a child’s speed in time versus an adult’s speed in time.

![Figure 48. Translated script into screen.](image)

After UNIV-Writer had finished a rough draft of the script, she would send it out for the partners and content experts to review.

Development

When designing an interactive multimedia product, consideration is taken for other issues besides just the instructional goals. The instructional goal is part of the learning objectives mentioned in the design section. However, there are other influences that will impact how the product is developed, such as the intended audience’s technical capabilities, expected
dissemination plan, evaluation methods, delivery medium, diversifiability of elements, and life expectancy of product, just to name a few. This list provides some insight into what an instructional developer will consider when providing their expert opinion into the product development logistics. For instance, when the UNIVERSITY is requested to have a training video recorded, they might ask several questions:

1) Is the video strictly as a back-up for learners who missed this training session (small audience)
2) Will the video be used in future courses/training? In-class or online? (larger audience)
3) What is the expected number of people who will view the training video?
4) Will it be imported into a Content Management System (CMS) and broken into segments?
5) Will it need to be placed on a DVD?
   a. Will there need to be a menu?
   b. Will there need to be bookmarks?
   c. Will it be watched in its entirety
6) If you want a data file, what format should the video be in (i.e. Flash, QuickTime, AVI...)?
7) Do graphics need to be added to the video?
8) How many people will be videotaped (a 2-person interview will have different audio/video/lighting needs than a video shoot involving a trainer/teacher and 30 participants).
9) Where will the video be taped (location)?
10) What is the anticipated life expectancy?

This list is also not exhaustive. Each answer can generate a new question or unique projects may require additional questions. What the questions do reflect is that the video creation side has a different perspective from the instructional perspective. For example, while both designers and developers examine the potential for using the material on a Content Management System (CMS) or other means of reaching learners, the designer looks at the instructional aspects, while the developer examines the technical aspects and needs. The audience size may not change the instructional objectives, but it will likely influence the intensity of development when considering return on investment.
The P.R.I.D.E. Digital Curriculum was approached with some of these questions already answered. The intended audience was foster parents, potentially on a global scale. At its original design, the audience was expected to be limited to the licensed foster parents. In addition, each state had unique laws and rules that apply to foster parent training. By importing any of these laws, regulations, and rules into the final product, it could make the product inappropriate for an individual agency, state, or country. The UNIVERSITY also knew that this was a large-scale project with an enormous amount of video, graphics, animation, audio, and video. The dissemination of the training would be to individuals so interaction and evaluation should be embedded into the PDC. While those instructional activities were discussed previously in the design section, the interface (common surface boundaries and space) and navigation capabilities and functions needed to be created.

**Screencoding**

Once the script was close to completion, a coding system was developed to communicate and keep track of the various pieces in the development process. Coding each screen early on was necessary to provide a reference point in which the development team and the partners could identify the specific screen or activity. There were no coding systems available the UNIVERSITY used their prior knowledge of video to create a screencoding system. In film, a motion image is made up of several still images per second. An old flip book with minor variations on each page can appear to have motion if the person holding the book flips the pages quickly. In a book, each page could have a page number to identify the exact sequence of pages in the flip book. In video, these images (similar to pages in a flip book) are identified by a “timecode”. There are roughly 30 images per second in video. A video editor can go directly to
one image in a video by finding that timecode. It’s often perceived as an address, just as an address will help us find the location of a specific home or business. The timecode for video looks like 02:23:45:12; the first set of numbers (02) represents the hours, 23 would represent the minutes, 45 then represents the seconds, and 12 would represent the frame or still image (out of roughly 30 images per second). Editors may use the timecode to also sync the video with the audio.

When changing the media to an interactive format, it was a little bit more complex to place a coding system on the interactive media. Video is a linear process which moves in one direction, however, interactive media is non-linear. Some examples of the differences are: 1) the screens could branch off into multiple directions, 2) interactive media could return to previously viewed screens, and 3) screens could be skipped depending on an answer made by the user. Therefore, we needed to develop a system of coding which allowed for “branching” the screens.

The UNIVERSITY screencoding process began as soon as the script was near completion. It was important to get this done as soon as possible so that the team members on the development side could start saving and documenting each screen that they were working on. The PDC had 9 modules, most modules (except for 1) had more than one module called sessions, each session contained lessons and each of the lessons then contained screens. Similar to the video timecode, the interactive screencode was broken up by 4 sets of two digits and occasionally an additional alphabet, thus becoming an alphanumeric coding system. For example, Module 5, Session 3, Lesson 2, and the 25th screen would look like 05:03:02:25. If the 25th screen was an interaction or animation with a series of screens, the 25th screen would have an alphabetical symbol afterwards (i.e. 05:03:02:25e with ‘e’ representing the 5th screen in that unique series of screens for that interaction or animation).
The perspective of activity versus screen differs for the instructional designer and instructional developer. In the screenencoding and development process, activities can run over several screens. It could be an activity with interaction on multiple screens or it could be one Flash animation object. If coded by activities, there would be more difficulty in identifying the smaller part of the activity, which in turn could cause communication problems for the development team. Furthermore, the development team is not skilled in training the material and so they may not know when one instructional activity ends and another one begins. There could be hundreds of screens in one session and yet only a couple dozen activities.

Each session in the PDC represented a different CD that was produced. Originally, the thought was that each session would fit on one CD, but module 9 ended up having one session being split due to the amount a data could not fit on one CD. The Lesson was something that was new to the PDC version of the P.R.I.D.E. training. UNIV-DesignCoor explained:

The third number [in the screen code] was something that we devised and it was not in the original curriculum. That was something we called a lesson number. And one of the, sort of instructional design methodologies that we tapped into is that particularly when people work on computerized instruction or education they want to feel like they have some touchdowns along the way that says, “I finished this, I accomplished that.” Well normally these things are three hour long blocks that people sit in classrooms. Just dumping a three hour long block depending on how much time they had, and people could come back and forth to these things, they didn’t know if they, if we didn’t have some touchdowns along [the way] like the table of contents or something. They could go, “Oh my God! Do I have two hours left or one hour left or am I just two minutes into it or how much time?” So we devised a breakdown which is essentially what we called Lessons, which were organized around little blocks of content (personal interview with UNIV-DesignCoor).

The team also needed to code the screens for internal documentation. Coding the screen permitted the various development team members to identify and communicate with each other what object belonged to what screen. In example, a particular audio sound bite of a 13 year old
boy, we needed to find the audio sound bite out of maybe hundreds of audio clips that were recorded for all the modules. Just like we would use the timecode to quickly access a specific image in the video, we used the screen code to locate the objects in the screen. In other words, there would be a screen named 02:03:04:28. There may also be a 02:03:04:28.mov file for a video on that screen, a 02:03:04:28.bmp for an image on that screen and a 02:03:04:28.fla for a flash file of that screen. Theoretically, that was the intent of the screencoding process. This does not mean that all screens and team members always followed this procedure. It became apparent during revisions that some files were lost or time consuming to find when the objects were not coded and saved properly. Thus, any one organization coding an interactive project needs to understand the importance of a long term coding system for identifying objects used in each screen. Figure 49 shows how the PDC devised a screencoding system.

Figure 49. Screencoding.

Once the screen codes were determined, they would be added to the final script document. The script would be reviewed again and make sure everything made sense with the screencoding. An outline of each module with screencodes was then created for the development
team. The Module Outline document (see Figure 50) was an intra-organizational tool that was not shared with the partners. It provided a quick reference of what types of screens contained various types of objects. For instance, the videographer could quickly skim through the Module Outline document to see how many videos were needed and where he could find the details in the script (based on the screencode). The Module Outline contained in the left column the screen number followed by a simple title of the screen in the next column. The next 6 columns contained the various screen types or objects located on the screen. The different types included; animation, narration, video, audio, text entry and special graphics.

The columns chosen to incorporate into the Module Outline for the PDC were; interaction, animation, video, audio, text entry and special graphics. These columns identified the common elements on the screen. The special graphics column represented all the remaining screens that were not likely a template, meaning they were generally a unique content screen requiring special attention. Interactive and graphic lists such as bullet points were typically found on these screens. The notes column permitted a section to simplify or clarify the screens and was limited to a few words. For instance if the screen was based off a template screen such as Speaking from Experience of Narration, it would be written that in the notes. It also might have how many checks would be on a content page, or if the screen had text entry, a sliding bar, or drag and drop activity. It was designed as a quick reference for the development team.
<table>
<thead>
<tr>
<th>Screen #</th>
<th>Title</th>
<th>Animation</th>
<th>Interaction</th>
<th>Video</th>
<th>Quiz</th>
<th>Text Entry</th>
<th>Special Graphics</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>02:01:00</td>
<td>Contents Page</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>No Checks</td>
</tr>
<tr>
<td>02:01:01</td>
<td>Session One Introduction</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Narrator Screen</td>
</tr>
<tr>
<td>02:01:02</td>
<td>Meet Some Foster Parents</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Meet the Foster Parents</td>
</tr>
<tr>
<td>02:01:03</td>
<td>Promoting Positive Behavior</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Narrator Screen</td>
</tr>
<tr>
<td>02:01:04</td>
<td>How should I handle this?</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td>Click on Image</td>
</tr>
<tr>
<td>02:01:05</td>
<td>What does Discipline actually mean?</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td>Multi-Choice/Click on Text</td>
</tr>
<tr>
<td>02:01:06</td>
<td>Competencies and Objectives</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td>Click on Test</td>
</tr>
<tr>
<td>02:01:06a</td>
<td>Competencies</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Graphic List</td>
</tr>
<tr>
<td>02:01:06b</td>
<td>Objectives</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Graphic List</td>
</tr>
<tr>
<td>02:02:00</td>
<td>Contents Page</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Two Checks</td>
</tr>
<tr>
<td>02:02:07</td>
<td>The Challenge of Discipline</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Narrator Screen</td>
</tr>
<tr>
<td>02:02:08</td>
<td>Reasons Why Discipline &amp; Punishment...</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td>Drag &amp; Drop</td>
</tr>
<tr>
<td>02:02:08a</td>
<td>Reasons Why Discipline &amp; Punishment...</td>
<td></td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td>End of Drag &amp; Drop</td>
</tr>
<tr>
<td>02:02:09</td>
<td>The Challenge of Discipline</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Speaking From Experience</td>
</tr>
<tr>
<td>02:02:10</td>
<td>Contents Page</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Two Checks</td>
</tr>
<tr>
<td>02:02:11</td>
<td>How should we handle a case?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Scenario</td>
</tr>
<tr>
<td>02:02:12</td>
<td>Why to use Punishment</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Narrator Screen</td>
</tr>
<tr>
<td>02:02:12a</td>
<td>Eight Goals: Example Goal 1</td>
<td></td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td>Graphic Screen - Example</td>
</tr>
<tr>
<td>02:02:12b</td>
<td>Eight Goals of Effective Discipline: Goal 2</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td>Text Entry and text only</td>
</tr>
<tr>
<td>02:02:12c</td>
<td>Eight Goals of Effective Discipline: Goal 3</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td>Text Entry and text only</td>
</tr>
<tr>
<td>02:03:13f</td>
<td>Eight Goals: Your Responses - Goal 5</td>
<td></td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td>Text Only</td>
</tr>
<tr>
<td>02:03:13g</td>
<td>Eight Goals: Your Responses - Goal 6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Text Only</td>
</tr>
<tr>
<td>02:03:13h</td>
<td>Eight Goals: Your Responses - Goal 7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Text Only</td>
</tr>
<tr>
<td>02:03:13i</td>
<td>Eight Goals: Your Responses - Goal 8</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Text Only</td>
</tr>
<tr>
<td>02:03:14</td>
<td>Corporal Punishment</td>
<td></td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td>Click on Text, Done Button</td>
</tr>
<tr>
<td>02:03:15</td>
<td>Discipline and Child Safety</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td>Speaking From Experience</td>
</tr>
<tr>
<td>02:04:00</td>
<td>Contents Page</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Three Checks</td>
</tr>
<tr>
<td>02:04:16</td>
<td>Effective Discipline: Self-Assessment</td>
<td></td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td>Narrator Screen</td>
</tr>
<tr>
<td>02:04:16a</td>
<td>Effective Discipline: Resilience</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td>Sliding Bar</td>
</tr>
<tr>
<td>02:04:16b</td>
<td>Effective Discipline: Determination</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td>Sliding Bar</td>
</tr>
<tr>
<td>02:04:16c</td>
<td>Effective Discipline: Confidence</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td>Sliding Bar</td>
</tr>
<tr>
<td>02:04:16d</td>
<td>Effective Discipline: Gentleness</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td>Sliding Bar</td>
</tr>
<tr>
<td>02:04:16e</td>
<td>Effective Discipline: Openness</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td>Sliding Bar</td>
</tr>
</tbody>
</table>

Figure 50. Example of module outline.
Media Bits and Pieces

The extensive amount of elements (video, graphics, animation…) developed for the PDC began as individual media pieces. UNIV-Dir saw two main purposes for making the learning objects in a modular format. First, the smaller pieces could make the whole project or each individual modular easier to update. Second, he felt the objects in this modular design would be more customizable. Culturally specific components could be targeted to not the whole audience but subsets of the audience. Also, for states that have legal requirements “that are kind of different, that require a different language, something like that… it would allow updates. It would also allow us to do multiple versions economically and address some diverse needs and diverse populations” (personal interview with UNIV-Dir). While the database concept never flourished (partly due to the financial limitations), the modular, interchangeable objects did become a big part of the PDC design and development. Reusing objects saved on production time.

Types of Screens

Throughout the analysis I refer to several types of screens that were created by the development team. The screens in this section will provide a visual of what the team actually did create. Many of the screens were templates. In other words, once a screen was designed with a specific purpose, it could be re-used with minor changes to the video, audio, text, or graphic. There were several types of screens, but all the screens had basic navigation. Figure 51 identifies the navigation buttons.
One of the first screens in the training was the Content Screen (see Figure 52). This screen, which was also called an Index screen, appeared after each lesson was completed so that the person completing the training would see his/her progress. The Narration Screen (see Figure 53) was spread out between all the modules with different narrators for each module. Narration screens were co-trainers guiding the viewer through the training. Sometimes one narrator would appear on the video, while other times two narrators may appear. On all the Narration Screens, the transcript of what the narrator was saying appeared in text format. This mnemonic technique
of video, audio and text was optional depending on the individual’s learning style. The learner could turn the sound off for the narration and read the text if that was their preference. Once the graphics for the first narration screen was produced, it was used throughout the 9 modules as a template for the remaining narration screens. The graphics artist would change the color of the background for each module to set a color theme for the modules.

Figure 52. Contents screen.

Figure 53. Narration screen.
At the beginning of each session there would be the narration screen introducing the “co-trainers” followed by a Competencies and Objectives screen (see Figure 45). As PARTNER-PSME stated earlier in the instructional design model, the competencies and objectives were an instructional model from the works of Mager (1997) that was used in the PDC design. The competencies and objectives informed the learner of the goals and desired outcome from the learners before they actually began the instruction. The learner could not move forward, and the Next button would not be activated until the user clicked on both the competencies and objectives buttons. While the instructional media was interactive, responding to the user’s actions, the user still followed a sequential path. These learners had regulations that required them to be exposed to so many hours’ worth of training within a set period of time. In some of the sessions there was also a Review option in which the learner could review concepts and information either earlier in the same session (disk) or a previous session (disk) within that module (see Figure 54).

Figure 54. Review.

During the development, the video crew taped interviews with experienced foster parents. The PARTNER-PSME wrote the questions before anyone started developing the script. The
development team went to three different states to interview the parents. Near the beginning of the session, the interviewed foster parents were introduced in a collage of video clips (see Figure 55). The learner had to click on an image and the video would play inside the collage picture frame. Instructions for activating the video were stated verbally. Throughout the training, the learner also viewed Speaking from Experience screens with individual experts discussing the topic at hand (see Figure 56).

Figure 55. Speaking from experience 1.

Figure 56. Speaking from experience 2.
In addition to the stories that the experienced foster parents shared in the training, there were case studies, sample situations, or scenarios a foster parent could possibly encounter. Figure 57 illustrates a case study the end user would read, later be asked questions, and go through some interactive activities. Figure 58 illustrates a case study in which the end user viewed one or more videos. Sometimes the case studies were interactive. The sequence of videos depended on the end users’ responses.

Figure 57. Case study, read.

Figure 58. Case study, watch.
Videos were useful for all three objectives: knowing, a cognitive objective; doing, an operative objective; and feeling, an affective objective. For instance, the case studies above worked toward a cognitive objective. Videos were also used to demonstrate a skill or method that was being taught. The learning objective in Figure 59 is an operative skill in which the learner will learn effective communication through first watching how the skill is done and then going through a series of interactive activity to reflect on how he/she could handle a similar situation. In some videos the talent spoke directly to the camera. For instance, in Figure 60 the development team interviewed people around the university on what they felt it meant to be a professional. The P.R.I.D.E. Model of Practice is team centric, so the foster parent is considered a professional member of the team. To teach professional team development skills, the case studies examined a situation from multiple perspectives, such as from the case worker, birth parent, foster parent, adoption worker, foster child, and birth child of the foster family.

![Image](image_url)

Figure 59. Vignettes.
The animation screens contained a motion graphic/Flash file. For instance, a graphic of a boy traveling across the screen while a voiceover (person talking without being seen) told a story of the lost connections the boy may be feeling (see Figure 61). The animations helped to add visuals to what might have been a portion of the in-class lecture. The animation screens typically did not have any interaction. At the point when the animation is occurring, the user is absorbing a visual demonstration/representation of the skill or information being taught. This can help in retaining the information. Animations can also help the learner visualize concepts (see Figure 62). Text can also be animated to stimulate a visual mnemonic. Figure 63 and Figure 64 illustrate two different methods in which animated text were used. Figure 63 used the animated text to show words being used in a communication activity. Figure 64 displays a graphic list that gradually appeared, one line after another, while the narrator’s voiceover summed up a concept.
Figure 61. Example animation, image.

Figure 62. Example animation, concepts.

Figure 63. Example text animation with audio.
Video Production

There were three main types of video shoots for the PDC. The first type was narrations. These shoots were done in a studio environment. Professional actors would narrate the curriculum by using a teleprompter. A teleprompter is a glass device that is placed in front of a video camera, the text from the script is reflected on the glass so that the narrator can read the script while looking in to the camera. The reflected glass with text cannot be seen through the camera. The narrators spoke directly into the camera, whereas, the narrators appear to speak directly to the learners. There were two narrators per session. The original training had two narrators; one was a trainer and one was a foster parent. In the digital version it was decided to have this content delivered through an on-screen video. Both the narrators were professional actors portraying their assigned role of either trainer or foster parent. The content that was narrated was from both the original P.R.I.D.E. training and revised for the digital curriculum by the content design team. The material originally derived from both real-world trainers and a foster parent on the content design team. The narrations were also design to have the
accompanying text displayed on the screen next to the narration. An audio button was placed on
the screen so that the viewer could choose to turn off the narration sound and read the text
themselves. It typically took about 1 ½ to 2 days to shoot the narrations per module. Some of the
narration involved both narrators on screen at the same time while other narration pieces were
shot with the individual narrator. After the narration was shot, the actors would additionally read
off soundbites for the interaction and additional screens. These were voiceover for screens that
did not have video, only audio. Example of soundbites are “click next to continue”, “that’s right”
for correct answers, or “no, try again” for incorrect answer. In total there were 17 narrators for
the all nine modules. Narrators are paid more than standard union actors. For 1 ½ days’ worth of
a narration it would cost $1,759.00. In two modules, we used the same narrator because UNIV-
VideoDir and UNIV-DesignCoor felt he was so good at.

We actually used him twice because he was so good. He played the part of a foster
parent so we were often working with professional actors who in the case of narrators
functioned in sort of a dual role. They functioned as narrators but they also were
supposed to be playing essentially or at least having the persona of either a worker or an
experienced foster parent so he was our experienced foster parent ….this is something
that really was kind of extraordinary that we did that we actually put all of what would
have been narration on with video narrators, both of the co-trainers being on recorded
video and then all of their words down the right side of the screen so that people can look
at things either visual learner, auditory learners or readers, they could get it either way
(personal interview with UNIV-DesignCoor).

The next type of videos shot were the vignettes. These were short scenarios acted out,
typically by professional actors. Sometimes, however, UNIV-Writer explained “we have actors
who did the voice over and some of the onscreen and sometimes we had staff that we did the
voiceover. I actually did, at one point we were moving so fast, we would grab you out of the hall
and have you say something. So some staff did voiceover and some staff did a little acting but
more of the actors and the voiceover people are professional union scale actors.” UNIV-

VideoDir explained his approach to finding the actors:

I got most of them from one of the acting agencies located in Chicago. Although I did use two different acting agencies over the time, most I’d say 70% of the actors came from one of the locations. We also when it came down to some of the minor roles, meaning a headshot that was just a monologue we started looking into area theater groups, even ourselves stepped forward and got in front of the camera just to rattle off a couple of lines, or you know even a voice over. So, you know when you’re hiring 150 some actors even here in a big city like Chicago you start to deplete your talent poll. Especially when ethnicity, and nationality played a very large part on who I hired, as well as the child’s age (personal interview with UNIV-VideoDir).

Before each production the development team would have a pre-production meeting where the group/production crew would sit down and the video director would discuss where the shoot would be, what was going to happen, what the plans were and who was going to be in the video. Information such as how many talent was important for the crew because, for instance, the audio engineer would need to know how many microphones were needed, the lighting director might need to know how many instruments were needed, and information about the talent was needed to prepare the contracts in addition to having a head count for food arrangements. The production meetings were necessary to make sure the crew all received the same communication and knew what was expected. If the crew took longer to set up the set, then the actual recording time was shortened. When working with union members, it was required that the actors be dismissed before the 8 hours for a full day or 4 hours for a half day or they would receive overtime, even if the production only ran over by a few minutes. Any miscommunication prior to the shoot could delay the shoot and end up costing money. UNIV-VideoDir explained this time is money problem “Any minute over those windows, we’re paying them for a whole other day. And obviously our clients don’t want me to throw away $700 or $900 for being two minutes over [the] allotted time period (personal interview with UNIV-VideoDir). At one point in the
production, we paid the union actors $624.00 for a full day and $405.81 for a half day. This amount changed in the development process as the union had renegotiated and increased the pay for union actors. The UNIVERSITY used just over 160 actors for the PDC, of which the majority was professional union actors.

The last type of video shoot was the Speaking from Experience shoots. These shoots did not involve professional actors. The participants that were interviewed were as the title exclaims “experienced” foster parents and trainers. The production team would travel to several locations in Illinois, Texas, and California to interview experienced foster parents and trainers.

The state partners would assist UNIVERSITY in locating experts on the topic of each module. A list of questions would be prepared by PARTNER-PSME, with the assistance of the other content development team members. After the questions were prepared, the team would search for a location to conduct the video shoots. The majority of interviews for the Speaking from Experience tapings were conducted in local child welfare offices, in addition to a couple tapings in California, and Texas. The video crew would travel to a child welfare agency and spend a day or two interviewing the experts. The audio would be transcribed into text, cleaned (such as typos), add timecode to each comment, and then it was sent off to PARTNER-PSME to pull out excerpts for the training. The excerpts would then be added to the script.

**Challenges**

When converting an in-class script to a visual script, challenges arise in visually capturing the intended instruction. For instance, an instructor may use a case study to explain a relevant situation to the lesson. This can be a challenge for converting the look and feel of a story and the ability to visually display the story. PARTNER-PSME explained how both the visual and
audio presentation differs from that of an instructor reading off a case study or a student reading a written case study.

I remember I was not onsite for some of the filming and I can remember two examples which I’ll call problems with the challenge with the technology but I wasn’t on site and then there was a module on teamwork, module 6 I’m thinking. The actor who was playing the social worker seemed to have an inappropriate affect, sort of in terms of how she was delivering her lines, kind of whining. And I knew then that when we showed that it might look like the actor who was playing the foster parent might put up her in a position that she’s doing a really good job but it almost kind of looked like condescending in terms of, and that was one of my jobs. To advise when I see the film in reality that wouldn’t sound like that. Whatever and so I think we had to re-shoot that.

Or the actor showed up in jeans and [PARTNER-ISME] saw that. It was very early and [PARTNER-ISME] saw that and she said no, that’s inappropriate, social workers shouldn’t be wearing jeans. And so then [PARTNER-ISME] sent an email to the partnering states, this is very early and give us feedback on whether your workers use jeans. I think eventually [UNIVERSITY] had to re-shoot the filming or something because [PARTNER-ISME] said she didn’t want an actor wearing jeans…. But when you are in a classroom with the printed material, people just read something. They don’t know what clothing people are wearing or they don’t hear a person deliver the lines. I saw that on video and I thought, man, she’s really whining right now, you know that’s not good (personal interview with PARTNER-PSME).

It can also be a challenge to capture a visual story where visuals may be hard to obtain or inappropriate to capture. For instance, there are two modules in the PDC that deal with sexual abuse and development of children. UNIV-VideoDir reflected on this dilemma;

[We had] a couple of scenarios where a child has been sexually abused. Well how do you really get a child who has no experience with that, and who also may be awful young to be able to deliver that type of material. We had to find a way that the material could be delivered, and it was up to me to make suggestions well how about this, that, or this information, or we had a side conversation that comes in that discusses it so does a seven year old child doesn’t have to learn about material that probably his own birth parents in real life have never discussed with him or her (personal interview with UNIV-VideoDir).

Another challenge was in finding the talent for such a big project. The actors in the PDC represent diverse ethnic groups so we might specifically need an Asian man between 40 and 50 years old for one scenario. Because there were 24 disks in total, the diversity needed to be spread
out through all the modules and sessions. Furthermore, diversity needed to be taken into
consideration for the types of roles the actors were portraying to avoid stereotyping. Because the
project is being distributed globally, unique groups, such as aboriginals in Canada, needed to
also be represented in the videos. When dealing with multiple locales, diversity in the talent was
important to satisfy the wider range of learners. PARTNER-Dir explained the challenge of
satisfying these multiple locales, ethnicities, and stereotypes that accompany visual media;

I think the production people would mix advice and were very careful to make sure the
men weren’t the only ones doing the discipline and the women weren’t the only ones
doing the nurturing. It was carefully done to avoid stereotyping and I think that’s the
biggest issue with visual productions (personal interview with PARTNER-Dir).

Yet another challenge for the video production crew was the location in which these
videos would be shot. The video director felt this was one of his most difficult tasks because “in
the professional media of Chicago if you’re looking for a location even for like a half a day can
range anywhere from 300 to a thousand dollars….So, pretty much, well definitely, all our
locations had some sort of connection to us [the development team]” (personal interview with
UNIV-VideoDir). In other words, the locations for the video shoots were likely a home of one of
the staff members at UNIVERSITY. The locations needed to look authentic for the vignettes and
the cost of building a set or renting a studio location was too high to be reasonable for the PDC
budget.

Finally, one of the last challenges for the video shoots was general challenges to video
production. These challenges include things like an uncontrollable noise at a specific location,
such as an airplane, ambulance passing by or wind. Visual problems could also arise like when
shooting outdoors and a cloud moves in. PARTNER-PSME explained how the production crew
would recognize and adjust to these challenges:
UNIV-DesignCoor and UNIV-VideoDir and sometimes UNIV-Dir were just so good at what they did and working with the professional actors that even if they saw something I mean they had this expertise. They could be a scene that I thought was really good but the audio guys picked up some noise, an airplane going over the house. Or the lighting changed or something and these guys were just so good. They would ‘wow wait a minute we got to redo that’. …UNIV-VideoDir would say it’s really good but let’s do a safety and get another one done (personal interview with PARTNER-PSME).

Once the video was all shot and edited, there still remained one more challenge – getting it compressed properly to integrate into the multimedia disks.

The other difficulty would be in the post production. Meaning making sure the compression that I would make or the format that I would have this video come out of the editing system would work with the CD…. I believe we used Flash format, and [the] Director software, and I’m not very familiar with what the guidelines are for those but it was up to the graphic artist to say here’s what I need. I’d give him [or her] a compression and if it didn’t work we had to go back to step one and try to compress again… that happened, happened fairly often, not because we didn’t know what we were doing but because no two screens were really the same. There was either a whole lot more video, or there was a lot more graphics, or there was a lot more interaction you know compared to the other ones (personal interview with UNIV-VideoDir).

Once the videos were shot and edited, PARTNER-PSME would view the final version for approval prior to any of the other partners seeing the video. Occasionally, UNIV-VideoDir would send PARTNER-PSME a copy of the video but most of the time PARTNER-PSME would view the video when he was in Illinois for a content design team meeting.