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## Adoption of plagiarism detection software by college faculty

Patricia Meyer

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## ABSTRACT

### ADOPTION OF PLAGIARISM DETECTION SOFTWARE BY COLLEGE FACULTY

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This study explored the adoption level of a specific plagiarism detection software by college professors in a classroom environment. As universities and colleges struggle with the issue of plagiarism and maintaining high standards of integrity, technology tools have been created and provided to assist faculty in identifying if a student has plagiarized their work. The university that was used in this study provided plagiarism technology to their faculty known as Turnitin©. Turnitin© plagiarism software assist faculty in educating students on how to properly research and cite sources when completing their course work. The software is capable of detecting if a student has copied word for word from the Internet or has used work from another student. Turnitin© provides reports on usage of the technology by faculty. These reports indicated low usage of Turnitin© by faculty. This study explored why the plagiarism software that was implemented at the university was not being used in the classroom.

NORTHERN ILLINOIS UNIVERSITY  
DE KALB, ILLINOIS

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ADOPTION OF PLAGIARISM DETECTION  
SOFTWARE BY COLLEGE FACULTY

BY

PATRICIA MEYER  
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A DISSERTATION SUBMITTED TO THE GRADUATE SCHOOL  
IN PARTIAL FULFILLMENT OF THE REQUIREMENTS  
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DEPARTMENT OF EDUCATIONAL TECHNOLOGY,  
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Doctoral Director:  
Dr. Hayley Mayall

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## DEDICATION

To my mother, I miss you every day.

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## CHAPTER 1

### ACADEMIC INTEGRITY

With the growth of the Internet plagiarism has increased with students investigating topics for research in their coursework. A study conducted by Brietag (2013) indicated that the rate of plagiarism in undergraduate students is anywhere from 19% to 66% (p.1). Plagiarism can occur when students lack the fundamentals on how to conduct research when assigned topics in their courses. Researching articles on websites can result in students cutting and pasting the material into papers without properly citing the source. According to the July 6, 2001 issue of the *Chronicle of Higher Education*, “Officials at some colleges say that in recent years they have seen a sharp increase in students cutting and pasting material into papers from websites without attribution, or purchasing term papers from online term paper mills” (Young, 2001, A26). A study by Baker, Thornton, and Adams (2008) found that a majority of students do not recognize that the cutting and pasting of source material is plagiarism.

Teachers are faced with the challenge of eliminating plagiarism in the classroom in order to maintain integrity levels at the university. A study conducted by Johnson and Martin (2005) states that technological advances have made academic dishonesty easier to accomplish and harder for the faculty to identify (p. 48). Just as students are using the Internet to complete their course work, tools have now been developed to assist faculty in identifying plagiarized assignments, papers and course projects. Technology has been developed to assist faculty and students with recognizing when plagiarism has occurred in a student’s submission, but the

technology also assist students in identifying when they have used outside work and it is not properly cited. Plagiarism software systems have been developed such as Turnitin©, EVE©, Copycatch©, Grammarly© and Wordcheck©. Turnitin© detection software is the most globally utilized plagiarism detection service available (Batane, 2010). Turnitin© is a system that also rates the highest in detecting student-student collusion, papers purchased from writing sites, and cutting and pasting from the Internet in one application (Carroll & Appleton, 2001). Turnitin© was the plagiarism software adopted by the university in this study.

### Problem Statement

As universities and colleges work to build a culture of integrity, providing faculty with the tools to educate students on the importance of integrity in their work and identifying tools to assist faculty in detecting possible plagiarism violations will play an essential role in achieving a university of integrity. Plagiarism detection software is available to assist faculty when determining if plagiarism has occurred. An experiment was conducted at George Washington University where a professor submitted the student's papers to a search engine called AltaVista which checked every paper for plagiarism. This was done in an introductory information security concepts course. The first paper submitted was found to be copied word for word from a website. Due to the professor's findings, it was decided to submit all student papers from the entire course. Out of the 42 papers submitted, seven students, or one of six, had plagiarized most or all of their papers by copying and pasting information from a website (Ryan, 1998).

A way to address this issue is to leverage the technology that is available to assist faculty in identifying plagiarism. Faculty tend to be resistant in using technology other than for

teaching. An article by Haynes (2008) states, “Individuals and societies resist change. Technology brings change. Higher education has its own sets of rules and expectations of behavior. Technology threatens to reorder those behavior patterns and is therefore a threat” (p. 3). As technology is purchased and adopted by universities, adoption and usage of the software is important as costs of purchasing technology are high.

The university in this study adopted plagiarism software to support faculty in detecting if student’s have copied outside work without proper citations, purchased papers from outside sources, or if the student is using the work of other student’s. Turnitin© is the software that was implemented for all faculty to use in their courses. Turnitin© was adopted by the university in 2013. The faculty had the option to login to the Turnitin© website to submit a paper for review. In November of 2015, Turnitin© was then placed inside the Learning Management System which when faculty turned on this feature, student papers were submitted automatically. This feature provided not only the faculty with a report on the paper, but the student also received a report. In 2016, reports on the usage of Turnitin© were provided to the university in this study which indicated usage of this tool (Figure 1). These reports show out of 1900 sections offered in the Fall 2016 semester, only 11% of faculty used the Turnitin© tool to assist in the detection of plagiarism in a session. This study investigated as to why faculty usage of Turnitin© was low and the reasons why faculty did not implement this software in their course.

Articles and studies have been done that discuss the importance of identifying plagiarism and what tools have been designed for use of detecting plagiarism. A study by McKeever (2006) discussed the advantages and disadvantages of using plagiarism software to detect plagiarism and another study by Smith-Merry (2013) discussed how Turnitin© has become more of a

distraction for faculty than a technology that helps in their teaching. It appears that there is a lack of research regarding if universities and colleges that adopt plagiarism software such as Turnitin© have experienced low usage by faculty. This study researched the problem as to why there was low usage of the plagiarism software Turnitin© by full time and visiting faculty at the university in this study.

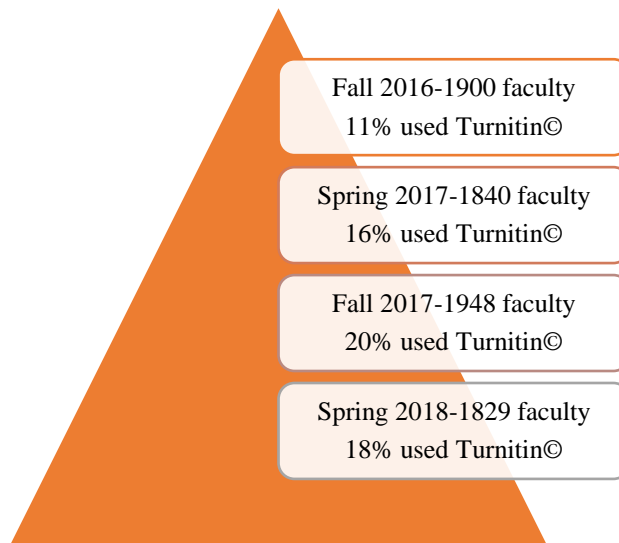


Figure 1: Usage data on Turnitin©.

### Research Questions

This study will be guided by the following research questions:

1. What was lacking in the implementation of Turnitin© to cause low usage by faculty?
2. What are the behaviors of faculty in using technology to detect plagiarism in their student's work?



## Plagiarism

Plagiarism, as defined in the Student Handbook (2016) by the university in this study, is:

In speaking or writing, plagiarism is the intentional or unintentional act of representing someone else's work as one's own. In addition, plagiarism is defined as using the essential style, and manner of expression, of a source as if it were one's own. If there is any doubt, the student should consult with his/her professor or adopt a "when in doubt, document" philosophy and reference the information source. Any statement made without documentation is, *de facto*, claimed as one's own and may be subject to a charge of plagiarism. Examples of plagiarism include:

- A submitted paper or other written assignment that contains word-for-word passages of others' work without proper acknowledgment.
- The paraphrasing of others' works which contains specific information or ideas and which is not properly acknowledged.
- Two or more submitted papers, lab assignments, computer programs, etc., that contain a resemblance beyond the bounds of reasonable coincidence.
- A submitted paper, examination, or assignment that contains data or conclusions which, upon questioning, the student cannot explain, support, or demonstrate direct knowledge of.

Computer piracy, which includes any act of copyright infringement (prohibited by federal, state, or local law); the use of software which has otherwise been expressly prohibited; copying; duplicating software code; and copying of notes, specifications, or technical descriptions of any software code whether copyrighted or not. (p. 3)

## Turnitin©

Turnitin© is a system that compares the submitted paper to a database of papers. This system was first introduced in 1997 and has been used in higher education. This database compares the paper to other student submissions, academic publications, online encyclopedias, news agencies, and other sources likely to be used for plagiarism (Heckler, Rice & Bryan, 2013, p. 230).

## Adoption of Technology

As new technology is being introduced, it is important to consider if the technology is what the consumers want and is able to accept. Studies have been conducted to address the issues involved with technology adoptions that have failed and the causes for the adoption to fail, but there have been limited studies on the attitude and perceptions of how new technologies were adopted and accepted. Ittersum and Feinberg (2012) discussed the uncertainties associated with new-technology adoption on whether and when the market will adopt them. The authors suggested that one way to reduce the uncertainties was to survey the target market of the technology to see the intentions to adopt the technology. This is a very low cost method to determine when a good time to rollout the new technology.

When determining new or updated technology adoption, research shows there are various factors to explore. A study done by Zhou and Xu (2007) discussed the adoption of educational technology. Involving faculty in the decision process and conducting pilot sessions before the introduction of software can eliminate any uneasiness of using the software and assist in building positive perceptions for the technology. When introducing technology to faculty or students, a training plan is an important piece to add to the adoption plan. Training will play an important part in making sure adoption of the new software is successful and allows the learners to use and accept the new technology. A study done by Johnson, Wisniewski, Kuhlemeyer, Isaacs and Krzykowski (2012) discusses how faculty are resistant to adopting new technology in their classrooms due to the fact they fear it could hamper the quality of their instruction. The study discussed the effects of introducing new technology without proper training could cause the faculty to falter in the classroom which could affect their careers pertaining to compensation,

tenure and receiving promotions. Other reasons that could be barriers of adoption were technology issues such as slow Internet connections, inadequate hardware or software, and low levels of technical expertise which could show their inadequacies as an instructor.

These studies by Zhou and Xu and Johnson, Wisniewski, Kuhlemeyer, Isaacs and Krzykowski discussed how faculty involvement is important when introducing new technologies in the classroom to faculty and students. Communication, training and involvement in the decision making process to all stakeholders can assist in the development of attitudes on the use of the technology, to determine what are the views and needs of the technology, and if the technology will show value to the student's education and assist faculty in their teaching.

### Theoretical Framework

The theoretical framework for this study will be focus on Hooper and Rieber model. This model developed by Hooper and Rieber (2011) discusses five stages in the adoption of technology. Hooper and Rieber described five phases of teachers' use of technology: familiarization, utilization, integration, reorientation, and evolution. The five stages are defined as:

1. familiarization, learning the "how-tos" of using technology;
2. utilization, trying the technology, but will not miss it if taken away;
3. integration, using technology for certain tasks (designated uses);
4. reorientation, using technology for more than delivery of content (focus is more on student learning); and
5. evolution, continuing to evolve, adapting and integrating technology.

Typically, teachers do not progress past the utilization stage to the evolution stage, where they use technology seamlessly in their instruction.

The Hooper and Rieber model (2011) will be used in the study to assist in identifying if it was the lack of being familiar with the software that caused low usage or the use of technology other than instruction of course material or as the model discusses, if reorientation was an issue in regards to using technology for more than just curriculum content.

### Significance of the Study

As universities adopt new technologies to assist faculty in their teaching, they need to be aware of the faculty's confidence level on using technology and attitudes towards the utilization of technology in the classrooms. With the introduction of plagiarism software such as Turnitin©, there is a need to ensure teachers adopt the software in ways that will enhance their teaching, assist the students in being successful in their educational studies and keep the institution ethically sound. Technology that is introduced and never used can be a liability to the budget of a university.

This study was aimed at determining why there was low usage the plagiarism technology by faculty. Based on internal reports from the institution of interest, only 15% of faculty teaching are using the software out of 1900 faculty teaching in an 8 week session. In order to make an impact and deter plagiarism, it is important faculty adopt the technology and implement the software in their course.

This study will assist other higher education institutions as they move to purchasing plagiarism software in making sure how to introduce this software with faculty and making

faculty aware of the importance of using this software is assisting students with their writing and upholding integrity in the classroom. The study will provide recommendations on how to introduce the software in order to build engagement levels and high usage of the technology.

### Assumptions and Limitations

#### Assumption of the research:

- Faculty will respond to the survey in order to gain a sufficient sample size for the study.
- Faculty attitudes towards plagiarism is one of high integrity and accepting of making sure students follow integrity guidelines.
- Faculty are accepting of new technology that will improve quality in their classroom.
- The self-report survey is a useful tool to measure teacher integration of plagiarism software and teachers' attitudes towards plagiarism software.

#### Limitations of the research:

- Turnitin© has limitations on the types of documents it will accept. The only documents that can go through their database are Word documents and Power Point slides.
- Turnitin© is the only tool that is used by the university in this study so I will be limited to just investigating this plagiarism software.
- Full-time faculty will be used in the study due to regulations by the university on using adjunct faculty in any study.
- One context for one technology. Adoption of other technologies may have different results.
- Responses are independent of each other.

## Chapter Summary

With the introduction of the Internet, plagiarism has become more prevalent at universities and colleges. Plagiarism has always been a concern with faculty and need support with the help of technology to identify issues with students. Plagiarism detection software has been developed and made available to faculty to assist in verifying if a student has plagiarized their paper. In this study, Turnitin© is the plagiarism software that will be the focus in this study. Turnitin© plagiarism software assist faculty in educating students on how to properly research and cite sources when completing their course work.

The study researched why Turnitin©, which is used at the university for plagiarism detection in this study was underutilized by faculty. Reports provided by Turnitin© to the university that indicate usage showed low percentages of use by faculty. This study provided the rationale as to why faculty did not use this tool as a method to detect plagiarism with their student's work.

## CHAPTER 2

### LITERATURE REVIEW

As new technology is introduced, an important piece is making sure it meets the needs of the user and that the user is able to accept and use the technology. In the following sections, a review of the literature pertaining to adoption of technology is presented and discussed. The review begins with a study on when and where technology should be introduced. The review discusses the importance of training faculty on the new technology and include them in the planning of the training of new technology and how conducting a training camp (i.e., bootcamp) will assist in the acceptance of the technology. This literature review will then conclude with how following Hooper and Rieber's model (2011) will provide guidance on how to have a successful adoption of technology.

Technology software has been developed and introduced to colleges and universities as a way to maintain integrity. The responsibility has fallen on the school to come up with a more effective way to enlighten the students and faculty on the importance of upholding academic integrity and swiftly respond to acts of academic dishonesty with the intention to eradicate it (Waithaka & Gitimu, 2012). Turnitin© plagiarism software has become increasingly popular and appear to be somewhat effective (Batane, 2010).

## Introduction of New Technology

When new technology is introduced, users tend to be cautious on how the technology will work to meet their needs. Studies that were reviewed for this study discussed whether faculty are uncertain about how technology will be looked at in their classroom. A study by Ittersum and Feinberg (2012) investigated the uncertainties associated with new-technology adoption on whether and when the market will adopt the new-technology. Pre-surveys can provide information on when is the right time to introduce new technology. Ittersum and Feinberg surveyed 354 students from a large US university regarding the student's intentions to adopt a cell phone with GPS technology. They surveyed students in two groups. The first group of students were asked to express their intentions of adoption using two traditional single intent measures, scaled intent and open-ended information. The second group of students was asked to express their intent to adopt using a new cumulative timed intent measure. The measures were in three month increments, and about 40% participated in follow-up surveys every six months over a two year period. The new measure outperformed the two single intent measures and achieved a rate of 80% in predicting whether and when a technology was adopted.

Faculty in this study did not complete a pre-survey before the technology was introduced and implemented in their courses. The pre-survey could have determined who would want to have this software in their classroom and who did not want to implement this software in their course. Turnitin© software is limited in that it only looks at Word documents and Excel spreadsheets. Accounting courses and programming courses would find no value of having this software in their course. This could be determined by conducting a pre-survey to determine who would benefit from the software. Ittersum and Feinberg (2012), also stated that "two of the most



critical uncertainties associated with new technology introductions are whether or when the target markets will adopt them” (p. 1). The authors suggested a way to reduce the uncertainties was to survey the target market that will use the technology first to see their intentions to adopt. The survey is a very low cost method to determine when a good time to rollout the new technology is and when to introduce technology upgrades.

Zhou and Xu (2007) conducted a study on the adoption of educational technology using an online survey asking full time faculty and adjuncts questions. The survey was divided into three parts. The first part of the survey addressed the instructor’s concepts of teaching from a student centered approach, understanding of teaching, goals of teaching, and criteria measurement of teaching success. The second part of the survey focused on instructor use of computers, expertise with computer technologies, perceived impact of computers on their teaching and learning, factors that influence their teaching, barriers to the use of computers, experiences, and preferences in professional development. The third part of the survey collected demographic information including gender, age, position, and subject area the instructors teach.

When looking at the results of the survey done by Zhou and Xu (2007), the survey showed how comfortable males and females are with technology. Males showed that they are more comfortable with technology and do not hesitate to start using the technology without instruction, while females tend to dissect the technology and require an understanding how this will apply to their teaching. They would prefer more training before attempting to use the technology. “These results draws consideration as to how training should be conducted when introducing new technology” (p. 150). Reviewing the audience, gathering background information and discovering if training is needed order may play an important part in having a

successful adoption of new technology. When looking at how to train faculty in order to get a better understanding if technology will be used, this study identified areas to consider when preparing the training.

### Training

When introducing technology to faculty or students, training is critical to acceptance of new technology. Johnson, Wisniewski, Kuhlemeyer, Isaacs and Krzykowski (2012) discussed how faculty are resistant to adopting new technology in their classrooms out of fear it could hamper the quality of the instruction. If faculty are unfamiliar with the technology and are hesitant to use for fear it could hamper their teaching, they will not adopt. The study by Johnson, Wisniewski, Kuhlemeyer, Isaacs and Krsykowski (2012) discussed how a training plan can help with the introduction of the technology. The study discussed how Carroll University conducted a three-day bootcamp which was held for faculty based on Malcolm Knowles Adult Learning Theory of Andragogy. In Knowles theory the four basic principles of andragogy are (as outlined by Kearsley 2011, p. 64):

1. adults need to be involved in the planning and evaluation of their instruction;
2. experience (including mistakes) provides the basis for learning activities;
3. adults are most interested in learning subjects that have immediate relevance to their job or personal life; and,
4. adult learning is problem-centered rather than content oriented.

In the study by Johnson, Wisniewski, Kuhlemeyer, Isaacs and Krsykowski (2012) having faculty involved in the planning of the bootcamp which allowed them the ability to have hands-on experience with the technology before placing the technology in the classroom. An important

part of this training was having the participants share best practices as to what worked for them and what did not. Faculty that had used the software shared some techniques they had learned by experimenting with the software. Once the faculty learned why the technology was critical to student learning, they were able to accept the new technology and could transfer the learning into the classroom (p. 48). The one area where the authors found great value was by conducting a pre-survey to assess the current learning level of faculty and to assess the anxiety level regarding the technology (p. 49).

In this study, the findings indicated that faculty did not have any involvement in the training. The rollout of the plagiarism software was done by introducing the software in three different pilots. The first pilot of faculty who tested the software were English faculty. The second pilot was done with faculty that taught online courses only. The third and final rollout was to the entire university. Faculty that taught courses where Turnitin© would work on assignments and projects had the ability to use the software in their course. Training was developed for faculty on how to set it up in their course, but there was a lack of training on how to implement the software with their students. The study indicated that the faculty did not attend the training developed by the university but searched the Internet for information on how to use the software.

Faculty training is an area that needs to be explored pertaining to the importance of how training should be completed in order for a successful adoption. Schrum (1999) offers four useful points relating to technology training for teachers. The author talks about the time to train on technology when it involves personal or pedagogical use compared to learning a new teaching model. Second, the importance of access to the new technology not only at the school but being

able to access it at home. Third, fear of unknown is always an issue and fourth, the new technology may require teachers to reconceptualize the way they teach (p. 81).

The approach to faculty training should be unique to the individuals. The training should be basic and easy for faculty. The current cultures should also be considered. Objectively, it is not the effectiveness of technology, but the teacher's perception of the effectiveness of technology that determines whether technology will be used (p. 21). One of the most popular training approaches, according to Zhao and Czikowski (2001) is "having experts 'sell' to teachers the mighty power of technology" (p. 25).

### Theoretical Framework

The research above discussed the importance of when introducing new technology, having faculty be involved in the decision making, survey faculty to gather feedback if the software will assist in their classroom and the importance of training faculty in order to build an understanding as to why the software will help them in their teaching.

Hooper and Rieber (2011) researched how a classroom without technology might change or adapt when computers are integrated into the curriculum. Studies conducted by Hooper and Rieber (2011) offered five steps to adopting technology and five key attributes that are important to an adoption of software. The steps can guide the participant in making sure they understand the new technology which will lead to a successful adoption. Hooper and Rieber (2011) discussed which steps should be taken to assist the instructor through the process of adoption and accepting the new technology in education. Instructors many times are confused as to how the technology will support them as they teach their students. Turnitin© being introduced as a

detector for plagiarism could cause confusion among faculty as to how this will help in teaching students as compared to using the technology as a tool to catch students who are plagiarizing their assignments.

Hooper and Rieber (2011) discussed the steps of adoption and the purpose of each stage.

The five steps are as follows:

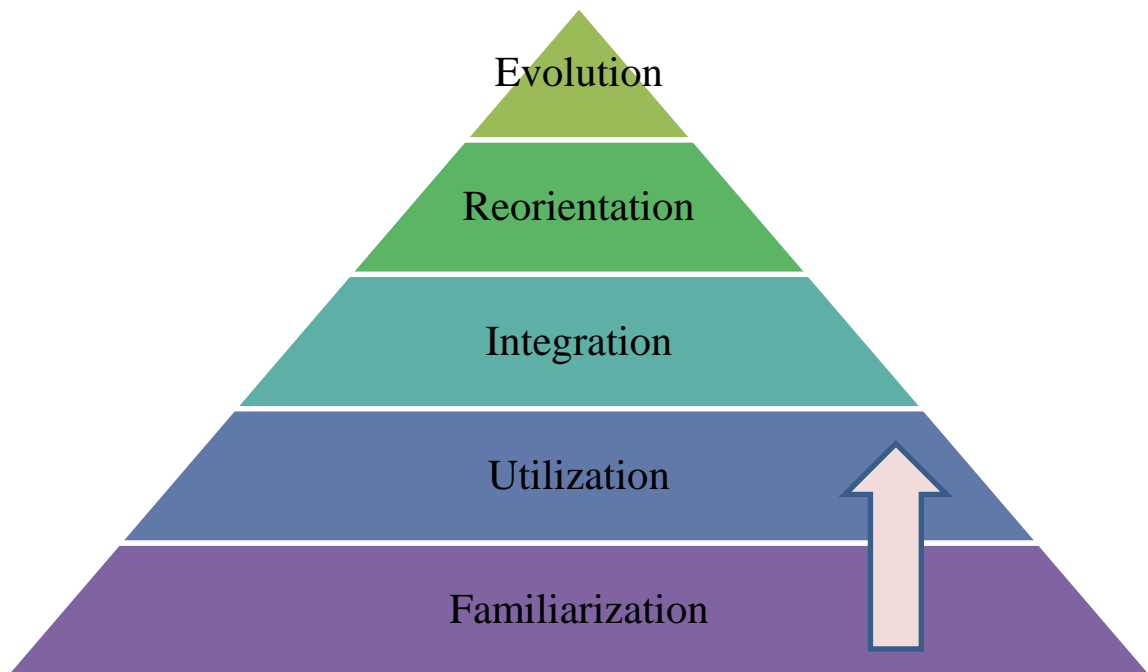


Figure 2: Five steps of adoption. Adapted from the Hooper and Rieber (2011) model of adoption of both “idea” and “product” technologies in education.

In the familiarization stage, the instructor could participate in a workshop which covers the “how-tos” of the technology. The utilization stage is more of a hands-on approach where the instructor tries out the technology. At this stage, it is important to gain an understanding of the importance of the technology and not just give it a try. It is important to see how the technology will help in educating their students in the classroom. If frustration occurs at this stage, the technology could then be discarded. Hooper and Rieber (2011) consider this stage as one of the most important stages in making sure adoption of the technology is achieved.

The integration stage is the breakthrough phase. At this stage the instructor will apply tasks or responsibilities to the technology which in turn creates a link with the technology. If removed, the instructor will not be able to proceed with the instructions. Reorientation is where the instructor will review what the purpose of the technology is and how the technology will help with the faculty views of education as student-oriented. The faculty will be able to see how technology will engage the student in the learning process and how the technology guides the student in becoming a researcher and explorer. The student begins to see how technology can be used in ways that they may not have anticipated. The evolution stage is a reminder that the educational system must continue to evolve to remain effective. The classroom is constantly changing due to new advances in technology. It is important that educators stay informed of the changes in technology in order to apply the new technologies to the student learning (Hooper and Rieber 2011, p. 4).

The study conducted by Hooper and Rieber (2011) presents the traditional role of technology in education and describes two technologies, product and idea. The product technology is the hardware. The idea technologies are what faculty create in the classroom by

having the product. Hooper and Rieber give an example of how faculty can create a simulation to assist learners due to having computer technologies available in the classroom. Learning is described as receiving information and “instructors who adopt technologies without considering the belief structure into which these products and ideas are introduced are necessarily limited to the third phase of integration” (p. 5). Understanding how technologies are going to benefit the students in their learning and how technology will have an impact on the future of teaching will help guide instructors on retaining quality in the classroom (p. 5).

Kebritchi (2010) investigated the factors affecting instructor’s adoption of modern educational computer games. The purpose of the study was to inform educators and instructional designers on the factors that could affect the adoption of this type of technology in the classroom. The study centered on a game called Dimenxian which was a computer game designed to teach Algebra to middle school students. A comparison study was conducted that showed first the adoption attributes for the games and other educational software and second the game adoption factors that were more inclusive than the barriers of using the software game.

The participants of the study were three instructors with over seven years of experience teaching mathematics. Two of the instructors were frequent computer game players while the third instructor did not have any interest in playing games on the computer. The instructors participated in a two-hour interview in which they were provided the website to access the computer game, see a demonstration of the game and have a chance to play the game. The instructors were then asked a series of open-ended questions on five key attributes: (a) relative advantage, (b) compatibility, (c) trial ability, (d) complexity, and (e) observability. The results showed that the instructors suggested using a combination of learning with fun and the alignment

of learning preference of the participants were two main reasons for using the mathematics game (p. 260). Recommendations from the instructors were made before they would adopt the game such as adding assessments, how the game will be supported, engagement and problem solving instructional strategies, rich mathematical content, an attractive game context and story, ability to adjust difficulty levels and to allow the instructors to experience the game before implanting in their classroom. The study by Kebritchi (2010) has similarities to the Hooper and Rieber model (2011) in that it discusses the importance of familiarization of the software before its use and utilization of the software where the faculty take on a hands-on approach to learning the software.

The studies discussed addressed the elements regarding why there are barriers of adoption and discussed how pre-work (focus groups, training) and post work (conducting surveys after implementation) to determine when is the right time to introduce the technology. Ittersum and Feinberg (2102) discussed in their study the importance of knowing when and whether a new technology should be introduced in order to have a successful adoption. Conducting surveys of the stakeholders and getting the stakeholders input can make an adoption of software successful. Determining that you have the right people involved is important. As the faculty are introduced to the software, if they gain an understanding on how the software works and how it can help in the educating of students, the faculty will then utilize the software and integrate it in their course. The administrators must have an understanding of the software and how faculty will use it in their course. If administrators never use the software and are involved as the decision process, there will be resistance to adopting the software (p. 26).



## CHAPTER 3

### RESEARCH DESIGN OF STUDY

The research design of this study is quantitative and the goal of this study was to answer the research questions with the hope to address why there was a low percentage of use of plagiarism detection software, the faculty attitudes regarding plagiarism software and the perceptions of faculty to adopt plagiarism software and use in their course.

This study addressed the following research questions:

1. How do faculty perceive the use of technology such as Turnitin© to detect plagiarism in their student's work?
2. What are the behaviors of faculty in using technology to detect plagiarism in their student's work?

#### Variables Defined

*Faculty attitudes on technology* refers to the level of confidence faculty have in the use of technology, ease of use in new technology and confidence in the use of technology use for plagiarism.

*Faculty attitudes towards Turnitin* refer to opinions of faculty regarding using Turnitin© in the classroom with the work students provide for a grade.

*Technology integration* involves the infusion of technology as a tool to detect plagiarism while providing student learning on how to conduct research, cite sources and improve originality in the student's work.

## Participant Description

The university is located in the Midwest and has 90 locations in the US and International. The university has an enrollment of 40,000 students and is regionally accredited by the Higher Learning Commission. The university offers programs in Business, Engineering Information Systems, Media Arts, and Web Design. The university falls under the umbrella of an education group which also has a university for nursing students and a school that preps students to take the CPA exam. The school has been in existence for 80 plus years and started offering online course delivery in 2001.

The participants of the study were full time faculty and visiting professors that teach both online and at the onsite courses for the university in this study. These faculty are located all over the country and teach graduate and undergraduate level courses in business administration, health services management, computer information systems, media arts and technology, and general education. The faculty are assigned to teach in a specific college (i.e., College of Business & Management, College of Media Arts, etc.) and are required to have industry background in order to teach at the university. They must hold a master's degree in the subject area or 18 credit hours in the area where they are teaching. A doctorate is preferred but not required. The university currently employs over a 1000 faculty and the survey was sent to faculty teaching in the fall semester. This was a total of 938 surveys that were emailed to faculty.

When the faculty teach, whether online or in a classroom, a learning management system called eCollege is utilized for delivery of the course curriculum. The faculty are enrolled into the eCollege course which contains Turnitin© plagiarism software embedded into the course. As

student's write and submit their assignments, the software checks the papers to determine the level of use of outside sources and if citations have been noted in the paper. A report is generated to the student and the faculty in regard to the amount of outside sources used and if all outside work that is copied word for word is cited correctly in APA format which is the formatting style adopted by the university in this study.

### Instrumentation

When preparing the survey to be sent out to faculty, two surveys were used that had previously be used in studies. The table below are the two instruments where questions were taken to develop the TAS survey (see Table 1). This survey will be created using Qualtrics™.

Table 1  
Instrument Design for Research Study

Instrument	Name	Authors	New Instrument
1	Computer Technology Integration Survey	An, Y and Reigeluth, C. (2012) Questions 1–10	Turnitin Adoption Survey (TAS)
2	Academic Integrity Survey	Grady, P. (2012) Questions, 1,2,4,6,7,23,24,25–29	

Qualtrics™ is a survey tool that can allow you to prepare questions for a survey, create a link that can be shared with the participants of the survey for ease of completing the survey and prepare the data results that can assist with analyzing. The survey was sent via email to the faculty teaching in the fall 2017 at the university in this study. One advantage of surveys sent by

e-mail is the ability to reach out to large numbers of participants located across a wide geographic area (Merriam & Simpson, 2000). A second advantage is that surveys have been found to be effective for studies that describe characteristics of large groups (Merriam & Simpson, 2000). Third, the anonymity of electronic surveys provides participants with a greater comfort level than face-to-face interviews when wanting feedback that is honest (Nardi, 2003). Fourth, electronic questionnaires provide faculty members with a format for responding that is typical at this online university.

A set timeline was communicated to the participants that the survey was to be completed within 30 days of receipt of the email with reminder 15 days. The 30-day time period to complete the survey provided enough time to complete the survey with the hopes of giving enough time to get a good sample of feedback. A concern is that if the survey is available to the participants for a long period of time, it will be forgotten so placing a short timeline for completion may drive the faculty to complete the survey judiciously.

The TAS contained 45 questions that were grouped into three main categories. The first section were questions on Academic Integrity that were taken from a survey that Grady (2012) developed when completing her dissertation. Questions 1 through 15 were taken from parts of the Grady survey.

The second category asked questions regarding technology and how faculty accept technology and their role. Questions 16–25 on the TAS survey were taken from a survey by An and Reigeluth (2011). An and Reigeluth created a 10 question survey that were formed around technology beliefs (see Appendix B). All 10 questions from the An and Reigeluth survey were used in the TAS survey.

The third category in the TAS survey contained questions to the faculty member regarding Turnitin©. Questions 26–45 on the TAS survey questioned faculty on their knowledge of Turnitin© on if they use the software in their course, how to setup the software in their course and they felt that Turnitin© had an impact on reducing Academic Integrity violations. The questions were a variety of closed and open ended by having participants answering questions using a Likert scale (rate 1–5). The survey was kept anonymous and as the faculty completed the TAS, the survey mechanism in Qualtrics™ assigned a number to that responder.

### Ethical Concerns

Responses were collected through the Qualtrics Survey™ tool. “Qualtrics uses Transport Layer Security (TLS) encryption (also known as HTTPS) for all transmitted data. We also protect surveys with passwords and HTTP referrer checking. Our data is hosted by third party data centers that are SSAE-16 SOC II certified. All data at rest are encrypted, and data on deprecated hard drives are destroyed by U.S. DOD methods and delivered to a third-party data destruction service” (Qualtrics.com, 2014). It will be important for faculty to know that this TAS will be an anonymous survey with the hopes of making them comfortable to complete and the ability to provide truthful responses.

### Data Analysis

After Institutional Review Board approval, prospective participants were sent an email which invited them to participate in the study and provided them with links to the Qualtrics™ survey. The Qualtrics Survey™ tool that was used collected information on the research and

provided one area to report all responses into an Excel spreadsheet. The spreadsheet that contained the data collected was manipulated in order to pull responses from each of the questions posed on the TAS survey and categorized all data for analysis. The data was reviewed and compared to the factors as to why there was a lack of use of software was interpreted by the reports submitted to the university by Turnitin©. Once the data is collected a complete analysis and interpretation of the data was written and finalized.

### Limitations

Turnitin© has limitations as to what type of documents it can accept in its system. Currently, the only documents that can be run through their database are Word documents and Power Point slides. If it is a Math course or accounting course that uses Excel spreadsheets, Turnitin© does not have the ability read these documents to determine if the student copied from outside sources.

Turnitin© is the only tool that is used by the university so the study is limited to just investigating this plagiarism software. There are several other plagiarism software available to assist faculty with detecting plagiarism, but this study only had access to this software.

### Chapter Summary

As previously stated research was conducted to explore why the plagiarism technology adopted by the college in this study was underutilized by faculty in identifying if student's work was plagiarized. Usage reports provided by Turnitin© indicated that there is low usage of this tool by faculty. A web based survey was sent to the faculty at the university in this study to

collect data to analyze and determine reasons for the lack of adoption. The hope of this research was to determine what could have been done to have a successful adoption of the software by faculty to this type of software and how an increase in usage by faculty of this software can assist in building a university of high integrity.

## CHAPTER 4

### SURVEY ANALYSIS

#### Results

Chapter 4 includes the results of the survey to demonstrate what areas of the study can show why there was a low usage of Turnitin© at the university in this study by full time and part time faculty. The results of the survey was focused on the two research questions:

1. What was lacking in the implementation of Turnitin© to cause low usage by faculty?
2. What are the behaviors of faculty in using technology to detect plagiarism in their student's work?

#### Participants

A survey using Qualtrics™ survey tool was sent to faculty via email on August 9, 2017 to 938 full time and visiting professors (see Appendix B). The email indicated to the faculty that they had until September 1, 2017 to complete the survey. A reminder email was sent to the participants on August 28, 2017 asking those who did not complete the survey to take time to complete the survey. Out of the 938 survey's sent out, I received a response rate of 18% or 170 responses. This section will discuss the results starting with the background of the participants.



### Participant Demographics

The survey began with collecting the demographics of the participants. The participants were asked their gender, age and level of education. The largest amount of responders to the survey were male while the level of education was at a doctorate level (see Table 2).

Table 2  
Level of Education of Participants

Question 3	<i>N</i>	Percent
Masters	81	47.65%
Doctorate	89	52.35%

Fifty-two percent of the responders held a doctorate while 48% held a master's degree. The age of the participants indicated a range from 30 to over 65 years of age. When asked what level they teach at the university, the participants indicated that most participants teach at the undergraduate level (see Table 3).

The survey showed the response rate by gender. Out of 171 responses, 56% were male professors and 44% were female professors (see Table 4).

Table 3  
Level Taught of Participants

Question 4	<i>N</i>	Percent
Undergraduate	107	63.69%
Graduate	61	36.31%

Table 4  
Gender

Question 2	<i>N</i>	Percent
Male	96	56%
Female	75	44%

### Academic Integrity

The next section contained questions regarding Academic Integrity. These set of questions that were presented to the participants determined their knowledge of Academic Integrity and if they understood the process of reporting a student who may have violated the academic integrity policy.

Questions 1 and 2 addressed the reporting of a potential violation. The data provided showed that faculty generally report violations and would report a violation if faced with an Academic Integrity issue as shown in the table below. Out of the 157 faculty that responded to this question, 50% responded they would report an issue if faced with one (see Table 5).

Table 5  
Reporting an Academic Integrity Issue

Question 6	<i>N</i>	Percent
Strongly agree	45	26.63%
Agree	43	25.44%
Somewhat agree	33	19.53%
Neither agree nor disagree	17	10.06%
Somewhat disagree	17	10.06%
Disagree	11	6.51%
Strongly disagree	3	1.78%

When asked if they feel supported in the process of filing an Academic Integrity case, 44% felt strongly that they had the support from the University. Comments that were added to the end of this section indicated that many times when they submitted a case, they were ignored or they were asked to make the issue a teachable moment and not enforce the violation. When asked if the process of filing a case is too time consuming, over half of the faculty responded that the process can be time consuming (see Table 6).

Table 6  
Academic Integrity Violation Process

Question 10	<i>N</i>	Percent
Strongly agree	22	13.10%
Agree	35	20.83%
Somewhat agree	32	19.05%
Neither agree nor disagree	45	26.79%
Somewhat disagree	8	4.76%
Disagree	20	11.90%
Strongly disagree	6	3.57%

Below are the comments pulled from the survey regarding the process for an Academic

Integrity issue:

When I encounter what I believe to be INTENTIONAL academic dishonesty, I report it. I do find many cases that I honestly believe, after talking with the student, are unintentional; the student did not understand the severity of their behavior. The university's policy allows for these to be treated as a "teachable moment" without formal reporting, and I follow that policy. I do wish that there were a way to report and track that a student has had this counselling, without further repercussions, to avoid the possibility that a student could have multiple incidents treated as "teachable moments" without reporting.

I have reported several instances of blatant plagiarism and I have never received a response from the university. I don't know if they have received it, I have not been asked for added information or clarification, I do not know how it was handled with the student (no information on the outcome).

The process indicates, correctly, that the first step must be between the student and the Professor. A remedy should be attempted before taking the next step.

Simplicity and directness is the best policy.

At the end of every 8 week session, students are provided with a survey to give feedback on the course and the professor teaching that course. Professors at the university in this study are required to maintain a score of 3.6. A concern about the faculty evaluation collected at the end of the semester showed some concern that the student they have submitted for a violation may score the professor low which could affect their securing teaching opportunities and give them a low performance evaluation.

### Technology

Section 3 of the survey questions were focused on attitudes of faculty regarding the use of technology in the classroom. When asked if they support the use of technology in the classroom, 78% of the faculty responded that they strongly agree with the question (see Table 7).

Table 7  
Support Technology Use in the Classroom

Question 16	<i>N</i>	Percent
Strongly agree	132	78.11%
Agree	31	18.34%
Somewhat agree	6	3.55%
Neither agree nor disagree	0	0.00%
Somewhat disagree	0	0.00%
Disagree	0	0.00%
Strongly disagree	0	0.00%

Faculty responded that they should be in charge of technology in the classroom. With regards to a technologist overseeing this process, faculty responded that they felt they should have input in adding technology to the classroom.

Question 19 asked faculty regarding technology and does it assist them in completing tasks more effectively and efficiently. Half of the respondents strongly agree that technology does help them in their classroom to be more efficient and effective (see Table 8).

Question 22 pertaining to keeping up with new technology was asked and the response showed that faculty strongly agree that they need to keep up with the changes in technology (see Table 9).

Overall the responses were positive regarding the use of technology and wanting to learn more about new technology in the classroom. Faculty want to have a voice as to what technology should be included in their course but want to make sure it helps their student's in their learning.

#### Turnitin©

When faculty were asked if they were aware of Turnitin© and that this plagiarism software was adopted by the university in this study, 98% stated overwhelming that they were aware. When determining if proper training was provided to faculty, 66% of the respondents stated that they had received training on the software.

Table 8

## Technology Assists Faculty to Be More Effective and Efficient

Question 19	<i>N</i>	Percent
Strongly agree	92	54.44%
Agree	40	23.67%
Somewhat agree	26	15.38%
Neither agree nor disagree	8	4.73%
Somewhat disagree	3	1.78%
Disagree	0	0.00%
Strongly disagree	0	0.00%



Table 9  
Keeping Up With New Technology

Question 22	<i>N</i>	Percent
Strongly agree	96	57.14%
Agree	62	36.90%
Somewhat agree	8	4.76%
Neither agree nor disagree	1	0.60%
Somewhat disagree	1	0.60%
Disagree	0	0.00%
Strongly disagree	0	0.00%

A question was then asked if they use Turnitin© in their course to detect plagiarism and 86% of the faculty responded that they are using Turnitin© in their classroom (see Table 10) while 82% responded that they felt Turnitin© does help in identifying plagiarism issues in student papers.

Table 10  
Use of Turnitin© in the Course

Question 29	<i>N</i>	Percent
Yes	145	85.80%
No	24	14.20%

When asked how faculty received training, 31% stated they went to the Turnitin© website to view training tutorials (see Table 11).

Interestingly, the faculty responded that even though Turnitin© was adopted and implemented into their course, only half have seen a decrease in plagiarism in their classroom. Only 63% felt that Turnitin© made them a better instructor. When asked if Turnitin© is easy to use and if it is the only plagiarism software they use, 60% answered that question stating it was easy to use and was the only software they use.

A question regarding what search engines faculty also use along with Turnitin© was asked and 60% of faculty use Google to assist them in detecting plagiarism (see Table 12).

Faculty responded that Turnitin© is an effective tool to use and they like that the reports

Table 11

## How Faculty Learned to Use Turnitin©

Question 38	<i>N</i>	Percent
Attended a training session	29	20.00%
Viewed the training presentation in the Center for Teach Excellence	28	19.31%
Viewed information on the Turnitin© website	45	31.03%
Other	43	29.66%

Table 12

## How Do You Check Content of Your Student's Work?

Question 42	<i>N</i>	Percent
Google	101	62.3%
Yahoo	0	0
Other	52	32.1%
I don't check for plagiarism in my students work	9	5.5%

are returned to the students so they have the ability to check their papers on how outside resources were used in their writing.

## Analysis

This section will look at the questions that specifically address the research questions in the study. Analysis of each research question is organized in the following way: statement of the research question, results of the analysis as related to the research question, and faculty comments, if any.

### Research Question 1—Turnitin© Implementation

This section will discuss Research Question 1: what was lacking in the implementation of Turnitin© to cause low usage by faculty?

The survey consisted of questions regarding Turnitin© and if faculty were aware of the plagiarism software. When asked if they were aware of Turnitin© and that is assisted in detecting plagiarism in their student's work, 100% of the responses were that they did know about Turnitin© and what it is used for in student's work. When asked if they were aware that the school in this study had adopted it and implemented in their course, 98% answered that they were aware that Turnitin© is used at the university.

Question 38 asked whether training was conducted and if they were properly trained on the software was asked of the participants in which 66% stated that yes, they were properly trained. A question to determine how they were trained was posed to faculty. The following table shows that most faculty viewed how to use Turnitin© on their website (see Table 13).

Table 13

## How Training Was Obtained

#	Question 38	N	Percent
1	Attended a training session	30	21%
4	Viewed the training presentation in the Center for Teach Excellence	28	19%
5	Viewed information on the Turnitin© website	45	31%
6	Other	43	29%

Question 29 asked if faculty use the software received a response rate of 88% out of a 170 response rate stating they did use the software. Question 32 asked if the faculty felt that plagiarism decreased as Turnitin© was introduced in their course. Out of 143 responses, 56% stated they saw a decrease in plagiarism. When asked if they felt Turnitin© caught all plagiarism in a student's work, 30% out of 144 responses stated they did assist in catching plagiarism.

Some of the comments from faculty regarding the software stated they did use the software but with several issues. The comments from faculty were:

I always am looking for new technology, so latched onto it as soon as I found it. I'm hindered by other teachers poor use of the system. For some reason other faculty have "cutoffs", like "20% is OK and more than that is plagiarism". Thats silly to me. Plagiarism is clearly defined, its not a "percentage". You could have a 30% match with NO plagiarism, or 5% match WITH plagiarism. Other teachers let their students "keep" returning in the same work, and students just keep changing words until the plagiarism goes away. I've had to work hard to reset expectations of my students.

I find Turnitin cumbersome. I recently used it in another university. Because it was an outside resource, the IT department could not assist in why it wasn't working. Turnitin has absolutely no way to contact for tech support other than text message. They did not respond. It was a nightmare. It also provides some very confusing and invalid material.

Using it to grade is difficult and not helpful to the students. I do not like or use this technology whenever I have the choice.

Turnitin does have some limitations—it often references a student’s paper from another school. What it does not show is whether or not that content found in THAT student’s paper came from another website. This would be helpful to know. I host a con-call at the beginning of all of my graduate marketing courses. I make it VERY clear on the con-call (there are three identical calls so that all might find a suitable time to participate) and I put it in writing . . . what constitutes plagiarism. I also make it known that failure to cite . . . and/or a research paper that is essentially a “cobbling together” of cited content extracted from other sites . . . and devoid of the adult learner’s own perspectives . . . will likely result in a poor grade.

I have found it cumbersome, complicated and often inaccurate. The color coding is . . . good idea but needs work. Once we see the colors, then what?

To determine why faculty do not use Turnitin in their course, question 39 asked as to why they opted out of using Turnitin© (see Table 14).

Table 14  
Opt Out of Using Turnitin©

#	Question 39	<i>N</i>	Percent
1	Not familiar with how Turnitin© works.	1	3%
2	Turnitin© doesn’t work with the type of assignments in my course.	18	46%
3	I don’t feel Turnitin© should be used to detect plagiarism in students work.	1	3%
4	The process of using Turnitin© is difficult.	3	8%
5	Other	16	40%

Turnitin© will only accept files that are Word or PowerPoint. Many of the courses at the university deal with Excel spreadsheets or programming codes which may not be detected in Turnitin©.

Some of the comments from faculty in regards to how Turnitin© works with finding plagiarism in a student's paper indicated that it does work but has limitations. The comments from faculty were:

Great tool, but it is important to check the work manually to ensure there is truly an issue. I use it as a learning opportunity for the student if it appears unintentional. If it appears intentional, submit to AI.

Over the years Turnitin seems to have changed how it reports matching papers. Now there is less reporting of matches to sites that sell assignments as "study aids" even though a Google search will find several matches.

Turnitin is essential however, if Turnitin wasn't available other plagiarism checkers would be necessary. Turnitin can be replaced with other software that will perform just as well.

Though Turnitin© was adopted by the university for faculty to use in detecting plagiarism, question 42 asked if there were other methods faculty use to detect plagiarism. The table below shows some of the other options faculty used (see Table 15).

Table 15

## Other Plagiarism Detection Methods

#	Question 42	<i>N</i>	Percent
1	Google	101	62%
2	Yahoo	0	0%
3	Other	53	33%
4	I don't check for plagiarism in my students work	9	5%

Summary Findings

The responses to the questions indicate that faculty do have an awareness of Turnitin© and did receive training on Turnitin©, but a large percentage of faculty attended training on the Turnitin© website instead of using any training available by the university. Out of the 170 respondents, 88% of faculty use Turnitin© but many responded that this software doesn't necessarily catch plagiarism. Several faculty will use Google™ to find if a student is plagiarizing and this could be in place of files that Turnitin© may not accept.

Research Question 2—Behaviors of Faculty in Using Technology

A section of the survey focused on questions to faculty was regarding technology. This section will discuss research question 2: what are the behaviors of faculty in using technology to detect plagiarism in their student's work? This question was to determine if faculty have a fear of new technology and tend to stay away from using technology in their course.



When asked if they support the use of technology in the classroom, question 16 shows that all faculty are supportive but at different levels (see Table 16).

When asked if technologies are important for student learning, 64% responded strongly that they agree (see Table 17).

When asked in question 20 if technology is important to teaching and learning, over half of the faculty responding strongly agreed that technology is an important piece (see Table 18).

Taking time to learn about technologies can be a struggle for some faculty. When asked if they are willing to take the time to learn about the technology, 60% of the faculty strongly agreed that they would take that time to learn (see Table 19).

When asked to respond to the statement if it isn't their responsibility to incorporate technology into the curriculum, faculty responded that it is their job to do this (see Table 20).

### Summary Findings

The survey findings show that faculty do embrace technology and feel that it is important to student learning. The faculty have a strong understanding that technology is a part of the classroom and are willing to take time to learn the technology that is being incorporated into the classroom.

Table 16  
Support Use of Technology in the Classroom

#	Question 16	<i>N</i>	Percent
1	Strongly agree	133	78%
2	Agree	31	18%
3	Somewhat agree	6	4%
4	Neither agree nor disagree	0	0.00%
5	Somewhat disagree	0	0.00%
6	Disagree	0	0.00%
7	Strongly disagree	0	0.00%

Table 17

## Technology Important for Student Learning

#	Question 17	N	Percent
1	Strongly agree	108	64%
2	Agree	42	25%
3	Somewhat agree	14	8%
4	Neither agree nor disagree	0	0%
5	Somewhat disagree	3	2%
6	Disagree	2	1%
7	Strongly disagree	0	0%

Table 18

## Technology Important to Teaching and Learning

#	Question 20	<i>N</i>	Percent
1	Strongly agree	94	55%
2	Agree	48	28%
3	Somewhat agree	20	12%
4	Neither agree nor disagree	6	4%
5	Somewhat disagree	0	0%
6	Disagree	1	.5%
7	Strongly disagree	1	.5%

Table 19

## Willing to Take Time to Learn Technology

#	Question 21	<i>N</i>	Percent
1	Strongly agree	102	60%
2	Agree	62	36%
3	Somewhat agree	5	3.4%
4	Neither agree nor disagree	0	0%
5	Somewhat disagree	1	.6%
6	Disagree	0	0.00%
7	Strongly disagree	0	0.00%

Table 20

## Responsibility to Incorporate Technology into Curriculum

#	Question 23	<i>N</i>	Percent
1	Strongly agree	7	4%
2	Agree	10	6%
3	Somewhat agree	20	12%
4	Neither agree nor disagree	15	9%
5	Somewhat disagree	24	14%
6	Disagree	67	40%
7	Strongly disagree	27	15%

## CHAPTER 5

### DISCUSSION, CONCLUSIONS, AND IMPLICATIONS

The purpose of the study was to investigate the low adoption level of plagiarism software by university faculty. The study was guided by two main research questions:

1. What was lacking in the implementation of Turnitin© to cause low usage by faculty?
2. What are the behaviors of faculty in using technology to detect plagiarism in their student's work?

In Chapter 5, the findings of the study are discussed as they relate to the literature review in Chapter 2. The conclusions of the study are also presented, along with recommendations for future practice and research.

#### Discussion

This section offers a discussion of the results of the study in comparison to the findings in previous literature. Areas in this study examined were identifying implementation of the plagiarism software, technology in the classroom and faculty behaviors towards academic integrity in their classroom. Prior assumptions that were made regarding low usage was that faculty were not aware of what academic integrity is and therefore, did not enforce this in their classroom. As stated in the survey responses faculty are aware of the policy enforced at the university and the process to submit an integrity issue. If there is a lack of training or training that may not contain the information needed to implement the software this could have been an

indication as to why there was low usage of the software. What was discovered from the survey responses is that faculty did not attend any training but searched on the Internet on how to use Turnitin© in the classroom. This caused a gap in the training as the faculty did not understand how to implement Turnitin© in the eCollege course. The next section will discuss how the findings from the survey and research addressed the issue of low usage of Turnitin©.

#### Research Question 1—Implementation of Turnitin©

To investigate what caused low usage of the plagiarism software Turnitin©, questions were asked regarding demographics of the faculty that teach at the university in this study. Questions 1 through 5 asked questions regarding faculty. These question established who was responding to the survey and what their role was at the university in this study. Questions 6 through 15 prompted responses on academic integrity. Faculty identified in this section that they were aware of the importance of academic integrity in the classroom and if they were aware of the process. Questions 16 through 25 gathered information on how faculty felt about using technology in their classroom. Faculty did respond that they embrace the use of technology in their classroom and that it does assist in their teaching students.

Questions 26 through 49 discussed their thoughts on Turnitin© plagiarism software. Faculty did identify that Turnitin© is a helpful tool in detecting plagiarism and assisting students with the use of outside sources in their papers. The response rate of questions 26 and 27 were 98% when asked if faculty were aware of Turnitin© and that it had been adopted by the university. They are finding the tool to be effective in catching plagiarism but indicated that it does miss catching some instances of plagiarism. In order to reinforce the violation, faculty



indicated that they do use other tools and conduct searches using Google to identify if there is indeed a violation. Faculty felt in order to be secure that the student did indeed commit a violation they also needed to do a random search using the Internet. The study by Johnson, Wisniewski, Kuhlemeyer, Isaacs and Krzykowski (2012) discussed the fear faculty have regarding adoption of new software and how could hamper the quality of their teaching if not used correctly. The responses from the survey regarding the use of plagiarism software and the indication it is not catching all plagiarism could hamper faculty from using the software in their classroom.

A study by Hooper and Rieber (2011) showed the importance of training in making sure faculty understand the technology and how it can lead to a successful adoption. In their model, they discuss five steps that lead to a successful adoption. The first step is to familiarize the stakeholders with the technology by attending training or workshops. Questions on the survey asked if faculty had attended training and the response was that faculty did not participate in the training provided by the university but went to the Turnitin© website to learn how to use the product. The second step of Hooper and Rieber's model discussed utilization of the software. The software was integrated into the learning management system for faculty to use but in order to use the software according to the university guidelines, faculty would need to have attended the training. Faculty indicated it isn't an issue to learn about the technology, they are willing to take time to learn how to use the technology in the classroom, but it is not only how to set it up in the learning management system, but how to interpret the data that this software provides when students submit their work and receive an originality report.

### Research Question 2—Behaviors on Plagiarism Technology Use

When faculty were asked questions regarding technology, it was agreed that they accept the technology in the classroom and the importance of having technology to assist with student learning. A survey on technology in the classroom conducted by An and Reigeluth (2011) indicated that faculty have strong beliefs that technology is important to student learning and it accomplishes tasks for efficiency (p. 57). In the survey that An and Reigeluth (2011) conducted, faculty responded that they believe incorporating technology into their classroom was their responsibility. The faculty at the university in this study also believed it was their responsibility by disagreeing that it isn't their job.

As new technologies are introduced, faculty responded positively to the question on the importance of keeping up new technologies as part of their responsibility and were willing to take the time to learn. When asked about how they were trained on using Turnitin© responses indicated they went out to the Turnitin© website in order to learn how to use this software. In the study by An and Reigeluth (2011), it was indicated that faculty are willing to learn but there were barriers such as time, lack of the technology being available and if the technology was learner-centered (p. 58). As it relates to the theoretical framework described by Hooper and Rieber, the data suggests that faculty focused on the importance of having plagiarism software such as Turnitin© as it is familiar software that assists them in the classroom, but that if it was not available, they would use other means in identifying potential violations.

Faculty did responses to the question if they knew how to use the plagiarism software, they stated that they understood how to use the software in their classroom and that it was easy to use. The question regarding the university process for reporting a case was answered with

neither agree or disagree if this was too time consuming but over 50% of faculty responded that they would report a violation and that they do report violations as they occur in their classroom. The process for faculty as stated in the policy is that they need to reach out to the student to discuss their findings when faced with a potential violation. Some of the comments in the survey when asked to provide additional feedback is that faculty commented try to first work with the student to build awareness of what they did wrong and how they can improve in the future. Many consider this a “teaching moment” with the hopes the student will understand the violation and move away from a future violation. Tutoring is provided by the university in this study to provide feedback on student papers before they submit for a grade and the library provides consultation for students on how to conduct research.

### Conclusion

This study investigated reporting of low usage of a plagiarism software that was adopted by the university in this study. The research described how faculty felt towards adoption of technology and their perspective on the use of plagiarism software in their course as related to Academic Integrity. The findings in this study identified several areas that could have caused faculty to not adopt Turnitin© in their classroom. Responses from the survey showed that faculty do support academic integrity in their classroom and support the policies of the university. Technology was important to their teaching and faculty were willing to add new technologies to their classroom.

The last section of the survey looked at their attitudes towards Turnitin© and how they feel it works in their classroom. There were no previous studies to compare the findings to but

looked at other studies in regards to technology and academic integrity. Faculty are aware that this software is available for them to use as needed for assignments or projects in the learning management system provided by the university. They have the option to enable the software for certain assignments or leave it off. Faculty felt that the software did support them in detecting plagiarism and when students were aware it was used in the course, they did see a drop in cases. Comments made from faculty felt that Turnitin© does a good job of detecting plagiarism, but they used other sources along with Turnitin© to make sure they had a violation and were not falsely accusing students.

When asked how faculty were trained on using Turnitin©, faculty indicated they went to the Turnitin© website to learn how this software works. The university in this study did create several forms of training from video to checklists but with faculty searching other methods of training indicates the university training was lacking. Training was an area that showed faculty tend to go out on their own to learn about the technologies. Responses to training indicated that faculty went to the Turnitin© website to learn about the software instead of attending the training the university offered. The survey responses indicated that 31% learned about Turnitin© on the website while 21% attended the training. Turnitin© was integrated into the Learning Management System at the university. Faculty could setup Turnitin© right in their course for certain assignments. During this study, the university did switch to a new Learning Management System and the setup was different. Videos and handouts were created that updated the new process. There were issues with the process but currently it has been improved and faculty are finding no issues with setting this software up for assignments in their courses.

While this study was going on, there have been a shift in who was responsible for processing Academic Integrity violations. In the past it would go Student Services who had a person designated as the Conduct Administrator. This process had changed and was now being handled by a Faculty Chair. The Faculty Chair position was a yearly assignment which caused changes to happen yearly as to who was in that role. This was confusing to faculty as they didn't know who to submit their cases due to the person changing often. With roles changing often, the training on the policy and process was missed often and violations would then be put aside for processing correctly.

#### Limitations and Assumptions of the Study

This study had limitations regarding the plagiarism software capabilities. Turnitin© has limitations on the types of documents it will accept. The only documents that can go through their database are Word documents and Power Point slides. The survey was sent to all faculty teaching in the fall session but many of the faculty teach courses where Turnitin© will not work with the type of documents required in that course. In a computer course, Turnitin© will not read coding and in courses where students are using spreadsheets, Turnitin© will not accept this type of format.

Turnitin© is the only tool that is used by the university in this study so I was limited to just investigating this plagiarism software. The university does not require faculty to use this software in their courses. It is up to the faculty to turn this software on in their courses and use it on selected assignments of their choosing. There are no limitations on how many assignments or even if it has to be used in the course. The software is embedded in the course so it is easy for

faculty to select an assignment and select to have the assignment go through Turnitin© once the student submits their work.

I am an administrator at the university used in this study and I represent Academic Integrity issues a fact that would have been known to many participants in the study. From my past experience with faculty members, I knew that they were a vocal group who felt comfortable sharing their opinions about the university. Still, the survey was sent through my university e-mail account and included my signature and title, which may have raised concerns about participant anonymity and impacted the candor of participants when they were asked to report their behavior pertaining to academic dishonesty. It is important to consider the possibility that if an outside group conducted the study, the results may have been different.

The assumptions of the study were that there were be a large response by faculty to the survey in order to gain a sufficient sample size for analysis. Faculty attitudes towards plagiarism is one of high integrity and accepting of making sure students follow integrity guidelines. Faculty are accepting of new technology that will improve quality in their classroom. The self-report survey is a useful tool to measure teacher integration of plagiarism software and teachers' attitudes towards plagiarism software.

### Recommendations for Future Practice

The results of this study offer several implications for members of the higher education community who are responsible for adopting technology in the classroom. This community includes both faculty members and administration.

As discussed in the theory used in this study by Hooper and Rieber (2011), training is an

important part to assist in a successful adoption. In the five stages discussed in the study, having faculty participate in focus groups, workshops or piloting the software to build familiarization will be a part in the success of faculty adopting and using the technology in their classroom. The second stage which talks about utilization allows the faculty to see why this technology will help in their classroom and give them a better understanding how will help in educating their students.

If faculty are frustrated with the software, they will not adopt. Involving faculty in the process and the decision making will be successful in the adoption of new technology. Adapting the technology to their teaching and learning style will provide the students with a robust learning experience and one that will make the faculty successful in helping students reach their educational goals.

In this study, it was identified that the training was not attended or properly delivered. Faculty responded that they used the Turnitin© website to learn about the product. The Turnitin© website does provide information on how to read reports that are provided by Turnitin©, but to learn the culture of the university and how to implement in the classroom through the learning management system, faculty needed to attend the university provided training. In the future, this training should be mandated that faculty teaching courses at the university must attend the training.

As an employee of the university, barriers to reporting cases has been an issue. Though we have implanted the Turnitin© tool and faculty are successful in determining an issue has occurred, the process for reporting the violation is cumbersome. The administrators and faculty need to work together to determine how to make this process streamlined in order to report a violation in a timely manner. Administrators need to support faculty as they work with the

student on the violation and provide support to students to find ways in educating the student on how to avoid academic integrity issues.

### Recommendations for Future Research

This study addressed why faculty did not adopt the technology to use for plagiarism detection in the classroom by the university in this study. Several possible reasons as to why the technology was not implemented by faculty were discussed. For future research, building on this study, use the model in this study to introduce new technology. This future study could determine that the model provided a successful adoption to new technology in the classroom. The cost of technology is important factor when schools with tight budgets want to adopt. The importance on a successful adoption is important to the university.

The methodology used in this study was a survey that was emailed to faculty. Though the response rate was good, to build on and add more quality to their responses, a face to face interview could be conducted. Faculty are located across the country but doing face to face and phone interviews could provide deeper insights as to why the adoption of the software was low and provide ways for future successful adoptions on new technology. Meeting with faculty that teach in the College of Business where assignments, project and papers are completed in a word document would have provided more specific feedback on if they use the software and if not, why. As stated in the study, there were limitations on the documents Turnitin© would accept. Focusing on the faculty that have course work completed with the accepted files could have provided more insights.

Training should be mandatory for all faculty whether full time or part time. A third of the



faculty that responded to the survey did not complete the training the university provided but chose to go to the Turnitin© website to complete the training. Making the training mandatory and providing evaluation of the tool will help in future use of this plagiarism software.

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## APPENDICES

APPENDIX A  
CONSENT TO PARTICIPATE

Hello University Faculty,

Turnitin is plagiarism software that was adopted by the university. This software is used in detecting plagiarism and is integrated in your course shell. Reports on usage of Turnitin indicate that usage is low by faculty.

I am inviting you to complete a short survey about your experiences with Turnitin at the University. The purpose of my research is to gain a better understanding of your perspective regarding your experience regarding the use Turnitin in your classroom and attitude towards plagiarism. Your response will provide the University with insights into your experience which will help us to build training and procedures that will provide support for both instructors and students.

By completing the attached survey, you are agreeing to participate in my dissertation research project, *Adoption, Attitudes and Perceptions of Plagiarism Detection Software by College Faculty*. Your participation is voluntary and may be withdrawn at any time without penalty or prejudice. If you have any questions concerning this study, you may contact me at 630-899-9955, or my chair, Dr. Haley Mayall at 815-xxx-xxxx. If you wish further information regarding your rights as a participant, you may contact the Office of Research Compliance at Northern Illinois University at 815-753-8524.

The results of the survey will be returned to me anonymously with your e-mail information removed. Therefore, I ask that you respond honestly and candidly. Your response will not in any way impact your position with the University.

Finally, your consent to participate in this project does not constitute a waiver of your legal right or redress you might have as a result of your participation, and you acknowledge that you have received a copy of this e-mail as your consent form.

The survey is available for online completion at <<enter survey link>>

and will be available for a limited time. Please complete it by XX/XX/XXXX. The survey must be completed in one sitting and should take no longer than ten minutes.

Thank you in advance for taking the time to complete the survey.

Patricia Meyer



APPENDIX B  
ONLINE SURVEY

## Plagiarism Software Survey

### 1. INTRODUCTION

Colleagues,

I would like to thank you for taking the time to complete this survey. You will find that the survey is divided into four parts. In Part I, the statements address faculty demographics, in Part II, the statements are designed to gain a better understanding of how faculty view academic integrity and in Part III, the statements pertain to how faculty view the use of technology for detecting plagiarism in their students course work.

1. Click on “Agree” to consent to participate in this project.
  - Agree
  - Decline to participate

### PART I – BACKGROUND

The statements in this part determine instructor demographics, including experience with the course(s) that you are teaching or have taught for this university online.

Please check the response that best indicates your agreement with the statements.

2. What is your gender?
  - Male
  - Female
3. What is your highest degree of education?
  - Master’s Degree
  - Doctoral Degree
4. Indicate which areas you teach at this university?
  - Undergraduate – Business Administration
  - Undergraduate - Computer Information Systems
  - Undergraduate – Gaming and Simulation Programming
  - Undergraduate – General Education
  - Undergraduate – Health Information
  - Graduate
5. What is your age? (enter age)

## PART II – ACADEMIC INTEGRITY

6. When faced with an incidence of academic dishonesty in my course, I generally report it to the Academic Review Committee.
  - Strongly agree
  - Agree
  - Somewhat agree
  - Somewhat disagree
  - Disagree
  - Strongly disagree
  - I have not faced an incidence of academic dishonesty in my course.
  
7. Although I have not faced an incidence of academic dishonesty in my course, if one occurred, I would report it to the Academic Review Committee.
  - Strongly agree
  - Agree
  - Somewhat agree
  - Somewhat disagree
  - Disagree
  - Strongly disagree
  
8. The University's definition of academic dishonesty is clearly written.
  - Strongly agree
  - Agree
  - Somewhat agree
  - Somewhat disagree
  - Disagree
  - Strongly disagree
  
9. I generally feel supported by the University when I report an incidence of academic dishonesty.
  - Strongly agree
  - Agree
  - Somewhat agree
  - Somewhat disagree
  - Disagree
  - Strongly disagree
  - I have never reported an incidence of academic dishonesty.
  
10. The reporting process is too time-consuming.
  - Strongly agree
  - Agree
  - Somewhat agree
  - Somewhat disagree
  - Disagree

- Strongly disagree
11. The consequences for students who engage in academic dishonesty are too punitive.
- Strongly agree
  - Agree
  - Somewhat agree
  - Somewhat disagree
  - Disagree
  - Strongly disagree
12. The consequences for engaging in academic dishonesty are too lenient.
- Strongly agree
  - Agree
  - Somewhat agree
  - Somewhat disagree
  - Disagree
  - Strongly disagree
13. Reporting academic dishonesty will negatively impact my end-of-term student evaluations.
- Strongly agree
  - Agree
  - Somewhat agree
  - Somewhat disagree
  - Disagree
  - Strongly disagree
14. Reporting academic dishonesty may result in litigation by the student.
- Strongly agree
  - Agree
  - Somewhat agree
  - Somewhat disagree
  - Disagree
  - Strongly disagree
15. Additional comments on the academic dishonesty reporting process.

### Part III – Technology

16. I support the use of technology in the classroom.
- Strongly agree
  - Agree
  - Somewhat agree
  - Somewhat disagree

- Disagree
- Strongly disagree

17. A variety of technologies are important for student learning.

- Strongly agree
- Agree
- Somewhat agree
- Somewhat disagree
- Disagree
- Strongly disagree

18. Incorporating technology into instruction helps students learn.

- Strongly agree
- Agree
- Somewhat agree
- Somewhat disagree
- Disagree
- Strongly disagree

19. Technology enables me to accomplish tasks more effectively and efficiently.

- Strongly agree
- Agree
- Somewhat agree
- Somewhat disagree
- Disagree
- Strongly disagree

20. Technology is an important part of teaching and learning.

- Strongly agree
- Agree
- Somewhat agree
- Somewhat disagree
- Disagree
- Strongly disagree

21. I am willing to take some time to learn and use new technologies.

- Strongly agree
- Agree
- Somewhat agree
- Somewhat disagree
- Disagree
- Strongly disagree

22. Teachers should keep up with new technologies.

- Strongly agree
- Agree
- Somewhat agree
- Somewhat disagree
- Disagree
- Strongly disagree

23. Incorporating technology into the curriculum isn't my job.

- Strongly agree
- Agree
- Somewhat agree
- Somewhat disagree
- Disagree
- Strongly disagree

24. Teachers should focus on content and pedagogy, and technologists should be in charge of the technology.

- Strongly agree
- Agree
- Somewhat agree
- Somewhat disagree
- Disagree
- Strongly disagree

25. Technology may draw student's attention but is not helpful for student learning.

- Strongly agree
- Agree
- Somewhat agree
- Somewhat disagree
- Disagree
- Strongly disagree

26. Part IV-Turnitin-I am aware of Turnitin and how it is used in student's work.

- Strongly agree
- Agree
- Somewhat agree
- Somewhat disagree
- Disagree
- Strongly disagree

27. I am aware that Turnitin is the plagiarism software adopted by the University.

- Strongly agree
- Agree
- Somewhat agree

- Somewhat disagree
- Disagree
- Strongly disagree

28. I was properly trained on how to use Turnitin in my course.

- Strongly agree
- Agree
- Somewhat agree
- Somewhat disagree
- Disagree
- Strongly disagree

29. I use Turnitin plagiarism software in my course to detect plagiarism.

- Strongly agree
- Agree
- Somewhat agree
- Somewhat disagree
- Disagree
- Strongly disagree

30. Do you find the Turnitin Originality Reports helpful in detecting plagiarism?

- Strongly agree
- Agree
- Somewhat agree
- Somewhat disagree
- Disagree
- Strongly disagree

31. Do the features and reports Turnitin provides assist students in becoming better writers?

- Strongly agree
- Agree
- Somewhat agree
- Somewhat disagree
- Disagree
- Strongly disagree

32. Since Turnitin has been adopted and added to your course shell, have you seen a decrease in plagiarism issues?

- Strongly agree
- Agree
- Somewhat agree
- Somewhat disagree
- Disagree
- Strongly disagree

33. Does Turnitin catch all work that has been plagiarized by students?
- Strongly agree
  - Agree
  - Somewhat agree
  - Somewhat disagree
  - Disagree
  - Strongly disagree
34. Does Turnitin save time with grading your student's work?
- Strongly agree
  - Agree
  - Somewhat agree
  - Somewhat disagree
  - Disagree
  - Strongly disagree
35. Do you feel that you are a better instructor with using Turnitin?
- Strongly agree
  - Agree
  - Somewhat agree
  - Somewhat disagree
  - Disagree
  - Strongly disagree
36. The process of using Turnitin in your course is very easy.
- True
  - False
37. Is Turnitin the only plagiarism software you use in detecting plagiarism?
- Yes
  - No
38. How did you learn to use Turnitin?
- Attended a training session
  - Viewed the training presentation in the Center for Teaching Excellence
  - Viewed information on the Turnitin website
  - Other
39. Why have you opted not to use Turnitin in your classroom?
- Not familiar with how Turnitin works
  - Turnitin doesn't work with the type of assignments in my course
  - I don't feel Turnitin should be used to detect plagiarism in students work
  - The process of using Turnitin is difficult
  - Other



40. Would you recommend Turnitin to your faculty colleagues?

- Yes
- No

41. Do you feel that your role is not to “police” your student’s for plagiarism?

- Yes
- No

42. How do you currently check content of your student’s work in you detect plagiarism?

- Google
- Yahoo
- Other
- I don’t check for plagiarism in my student’s work

43. Do you feel that if you use Turnitin in your course, it could have an effect on your end of session survey?

- Yes
- No

44. Do you agree that Turnitin could decrease plagiarism issues in your course?

- Yes
- No

45. Additional comments on Turnitin

APPENDIX C

PERMISSION TO USE SURVEY-BACKGROUND/ACADEMIC INTEGRITY

**From:** Pamela Grady [mailto:pamela.grady@estrellamountain.edu]  
**Sent:** Tuesday, October 18, 2016 7:13 PM  
**To:** Meyer, Patti <Pmeyer@xxxx.edu>  
**Subject:** Re: Permission to use your survey

Dear Ms. Meyer,

You have my permission to use my survey for your research.

Best of luck with your dissertation,

Pam Grady



**Pamela Grady, Ed.D.:** Manager, DRS

*DRS*

3000 North Dysart Road | Avondale, AZ 85392

phone | 623.935.8935

email | [pamela.grady@estrellamountain.edu](mailto:pamela.grady@estrellamountain.edu)

website | <http://www.estrellamountain.edu>



On Tue, Oct 18, 2016 at 3:13 PM, Meyer, Patti <Pmeyer@xxxx.edu> wrote:

Dear Dr. Grady,

I am a doctoral candidate at Northern Illinois University and I am currently working on my proposal for my dissertation. The purpose of this study is to examine why the faculty at the university in my study did not adopt the plagiarism software that has been provided in their online courses, plus examine their attitudes and perceptions of plagiarism software.

I have reviewed several survey instruments and I believe the questions you have developed to gather information on the background of each participant and the questions you posed regarding Academic Integrity would be a good fit in collecting data for my study. I would like permission to utilize the survey in my study

Please let me know if I may use this study below for my dissertation research:

Grady, P. (2012) Academic Dishonesty in a Digital Age, Northern Illinois University, 2012.

Thank you.

**Patricia Meyer**

APPENDIX D

PERMISSION TO USE SURVEY—TECHNOLOGY

**From:** Yun-Jo An [mailto:yan@westga.edu]  
**Sent:** Friday, October 21, 2016 2:03 PM  
**To:** Meyer, Patti <Pmeyer@xxxx.edu>  
**Subject:** Re: Permission to use your study

Dear Patricia,

Sure! You have my permission to utilize the survey for your dissertation study.

Good luck!

Thanks,

Yun-Jo

On Fri, Oct 21, 2016 at 2:55 PM, Meyer, Patti <[Pmeyer@xxxx.edu](mailto:Pmeyer@xxxx.edu)> wrote:

Hello Dr. An,

I am currently a doctoral student at Northern Illinois University in DeKalb, IL. I am currently working on my dissertation and would like permission to use your study for my dissertation research. My study deals with adoption of technology specifically plagiarism software by full time faculty. I am researching as to why they did not accept this software, their attitudes toward technology and plagiarism software and perceptions on using this type of software in their courses.

I have reviewed several articles and felt that your survey questions regarding technology would fit in my study.

I would like your permission to utilize the survey in my study.

Please let me know if I can use the study below:

An, Y., & Reigeluth, C. (2012). Creating Technology-Enhanced, Learner-Centered Classroom; K-12 Teachers' Beliefs, Perceptions, Barriers and Support Needs. *Journal of Digital Learning in Teacher Education*, 28(2), 54-62.

Thank you.

**Patricia Meyer**

**Student at Northern Illinois University**

APPENDIX E

SAMPLE ORIGINALITY REPORT—TURNITIN©

The screenshot shows a Turnitin document viewer interface. The document title is "EssayAssignment\_Jane\_Doe.docx" and the similarity score is 3%. The document content includes sections for "Lobby - timer pod, audio set up guide", "Slide 2", and "SLIDE 3". A "Match Overview" panel on the right lists two matches: "en.wikipedia.org" at 3% and "www.ivytech.edu" at <1%. The browser address bar shows the URL "https://turnitin.com/dv?o=324625147&s=3&u=1008620730&lang=en\_us". The Windows taskbar at the bottom shows the time as 11:31 AM on 10/16/2016.

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turnitin 3% OUT OF 9

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Match Overview

Rank	Source	Similarity
1	en.wikipedia.org Internet source	3%
2	www.ivytech.edu Internet source	<1%

Lobby - timer pod, audio set up guide

RECORD-RECORD-RECORD- Good afternoon and welcome to DeVry University's iConnect training session. My name is Steve Grigalunas and I am the administrator for DeVry University's iConnect platform. Please notice I have made some guides available for Download in the file pod. You don't need to get these now - these links will be available from the recording of this session. I want to thank you all for coming. Mala, Claude - did you have anything you wanted to say before we got started? Ok

Slide 2

So let's meet 1 of our first functions of the Adobe Connect platform. I'm going to take a quick poll. Raise your hand if you are able to find the raise hand button. Okay, good job. you can take your hands down now. If you have questions - please use one of the symbols in this menu to notify me. If my audio is cutting out, you can type a message in the chat pod.

POLL

Let's also get an idea of how familiar people are with Adobe Connect - in the poll on your screen, select the option that most applies to you.

Good.

SLIDE 3

now to get started today. I wanted to get an idea of where everybody is standing this morning.

PAGE 1 OF 6

Text-Only Report

11:31 AM 10/16/2016