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COVID-19 Effects on instructor Behavior: Instructor Self-Efficacy and Self-Disclosures Through Communication Privacy Management Theory

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ABSTRACT

COVID-19 EFFECTS ON INSTRUCTOR BEHAVIOR: INSTRUCTOR SELF-EFFICACY AND SELF-DISCLOSURES THROUGH COMMUNICATION PRIVACY MANAGEMENT THEORY

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The goal of this investigation was to examine how college and university instructors' teaching self-efficacy and self-disclosures have been influenced by the switch in teaching modality from face-to-face to online due to the pandemic. This study found that experience designing online courses influences instructors' online teaching self-efficacy (i.e., virtual interactions self-efficacy, course content mitigation self-efficacy, and general online teaching self-efficacy). Instructors who were required to teach online during the pandemic reported greater levels of three constructs of online teaching self-efficacy if they had taken professional development prior to the pandemic, but taking professional development after the pandemic was not associated with online teaching self-efficacy. In comparing face-to-face and online teaching, instructors reported significantly greater teaching self-efficacy, greater closeness with their students, more depth of self-disclosure to their students, and more breadth of self-disclosure to their students when teaching in face-to-face classes as compared to teaching in online classes. Instructors' strategic self-disclosures did not vary from face-to-face and online classes and was not influenced by online teaching self-efficacy.

Keywords: communication privacy management theory, online teaching self-efficacy, instructor self-disclosure

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COVID-19 EFFECTS ON INSTRUCTOR BEHAVIOR: INSTRUCTOR SELF-EFFICACY
AND SELF-DISCLOSURES THROUGH COMMUNICATION
PRIVACY MANAGEMENT THEORY

BY

REBEKAH M. CHIASSON
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TABLE OF CONTENTS

	Page
LIST OF TABLES	iv
Chapter	
1. INTRODUCTION	1
2. LITERATURE REVIEW	4
Instructor Self-Efficacy	4
Instructor Disclosures of Private Information	6
Theoretical Framework	7
3. METHOD	11
Sample and Procedures	11
Measures	13
Teaching Experience	13
Professional Development	13
Teaching Self-Efficacy	14
Strategic Private Information Sharing	16
Depth of Private Information Sharing	17

Chapter	Page
Breadth of Private Information Sharing	17
Differences Between Online and Face-to-Face	18
4. RESULTS	20
5. DISCUSSION	24
Practical Implications	27
Limitations and Future Research	28
Conclusion	29
REFERENCES	31
APPENDIX: SURVEY MEASURE ITEMS	36

LIST OF TABLES

Table	Page
1. Correlation Matrix	22

INTRODUCTION

The novel coronavirus 2019 (COVID-19) pandemic has generated many challenges for the global higher education community (Crawford et al., 2020). In the spring of 2020, universities had to make quick decisions about how to tend to their communities' safety. Many universities decided to move quickly to remote education. With faculty members rushing to convert their curriculum for an online environment, numerous universities did not possess the proper resources and pedagogical tools to convert courses to an online platform (Crawford et al., 2020). During this rapid change, faculty members had as little as one week to fully convert their curriculum online while simultaneously dealing with the stress and anxiety produced by a global pandemic.

As a timeline, the United States did not begin a significant online education response until midway through the Spring semester in March (Crawford et al., 2020). The first suspected on-campus case was reported during the week of February 17, 2020, but the cases of COVID-19 dramatically increased soon after. By late March, the number of confirmed cases in the US had surpassed China's, the point of origin of COVID-19 (Crawford et al., 2020). In early March, several institutions decided to move to online instruction following Spring Break (e.g., Harvard University, Massachusetts Institute of Technology). By mid-March, many other universities followed suit (e.g., Yale, Princeton, Stanford, University of California). Several institutions also decided to extend Spring Break an additional week to curb the impact of the imminent changes

to online platforms (Crawford et al., 2020). These rapid changes in the presentation of course material resulted in swift pedagogical changes for faculty members.

Not all university faculty were new to teaching online, however. Prior to the pandemic, some universities promoted online courses and some instructors taught online (Daugherty & Funke, 1998). The effects of COVID-19 rendered nearly all higher education instructors powerless in deciding whether or not one wanted to teach online. The forced pedagogical switch likely had downstream consequences for the teaching experiences of faculty.

Instructors who had little or no experience teaching online undoubtedly suffered in online teaching self-efficacy. Experience is a vital aspect of self-efficacy (Tschannen-Moran & Woolfolk Hoy, 2007). It stands to reason, then, that teachers without experience might have felt less efficacious than those with online teaching experience prior to the pandemic shift online. The forcible transition to online learning and potentially lessened self-efficacy might have translated to communication challenges with their students. Instructor self-disclosures, for example, may be affected by teaching self-efficacy.

In typical face-to-face (FtF) classroom settings, instructors use self-disclosures to enhance student learning (Frymier & Houser, 2000; Martin et al., 2000). Instructors tend to disclose private information to develop relationships with their students and relate experiences to class content (Martin et al., 2000; Song et al., 2016). In addition, self-disclosure is often used as a teaching practice to clarify class materials for students (Hosek & Thompson, 2009). Bolkan and Goodboy (2019) noted that examples increase instructor clarity. Myers et al. (2018) reported that instructor clarity, which may be improved by examples, was associated with students' perceptions of instructors' competence, goodwill, and task attraction. In other words, indirect evidence suggests that instructors share private information as examples in class (Hosek &

Thompson, 2009), examples improve learning (Bolkan & Goodboy, 2019), and examples increase favorability of student evaluations of instructors (Myers et al., 2018). Instructional communication research suggests a benefit for instructors self-disclosing in class in relevant ways. However, the online format may influence the nature of and motivation for instructor self-disclosures.

Those with more online teaching experience and teaching self-efficacy may have practice crafting their online teaching strategies, including self-disclosures. This line of reasoning would imply a quantitative shift in self-disclosure. An alternative possibility is that online teaching is qualitatively different from FtF teaching. Computer-mediated communication does not allow room for the same frequency and immediacy of instructor-student communication (Young et al., 2011). Because of these communication barriers, instructors may focus more on strategically sharing self-disclosures rather than keeping their self-disclosures the same as in FtF classrooms. In either case, whether self-disclosure is quantitatively or qualitatively different in online versus FtF classes, a self-disclosure theory would clarify instructors' self-disclosure in class. Petronio's (2002) communication privacy management theory (CPM) offers a framework for investigating the motivations and the strategies instructors use when deciding to disclose private information.

This study extends previous research by investigating how instructors' online self-disclosures relate to their teaching self-efficacy in online classrooms. As colleges and universities continue to increase online courses (Cole, 2016), it is helpful to understand how the online environment affects instructor teaching self-efficacy and instructors' self-disclosures, as both affect student learning outcomes (Frymier & Houser, 2000; Goldstein & Benassi, 1994; Gorham, 1988; Martin et al., 2000; Sanders & Wiseman, 1990; Sorensen, 1989; Tschannen-Moran & Woolfolk Hoy, 2001).

LITERATURE REVIEW

Instructor Self-Efficacy

One of the primary challenges of pandemic curricular shifts is that some instructors may have had no experience and little or no interest in teaching online before the pandemic. Instructors who had prior experience teaching online may have had greater self-efficacy when quickly shifted to remote instruction during the COVID-19 pandemic.

Self-efficacy is the belief a person holds about their skills and capability to execute a particular task (Bandura, 1977). Self-efficacy influences the level of effort expended on a task, resilience in the face of challenges and failure, and persistence when working through challenges (Klassen, 2002). In educational contexts, instructors who have more teaching self-efficacy tend to incorporate diverse instructional strategies and are more willing to try new teaching strategies regardless of difficulty (Riggs & Enochs, 1990). Instructors' perceptions that the technologies are successfully integrated into their educational practices are paramount for successful online classes. As a result, online teaching self-efficacy likely influenced instructors as they transformed their curriculum to the online platform due to COVID-19.

Self-efficacy is influenced by mastery experiences, verbal persuasion, vicarious experiences, and physiological arousal (Bandura, 1977). For instructors, the most powerful of

these influences is mastery experience, which includes prior teaching experiences (Tschannen-Moran & Woolfolk Hoy, 2007). Anderson et al. (1995) found that instructors who had several weeks to familiarize themselves with new educational software effectively adopted the technology. However, as instructors entered their second year of working with the technology, their achievement gains were higher than initial technology use. The continued use of technology in the classroom setting enhances personal mastery of the technology (Hardy et al., 2017).

In shifting classes online, instructors may or may not have had prior experience with online teaching technology. Instructors who had previously taught online were likely to have had experience with the tools necessary to teach online. Therefore, this study asserts the following hypothesis:

***H1:** There will be a positive correlation between prior online teaching experience and online teaching self-efficacy.*

In addition to prior online teaching experience, training and practice are also likely to improve online instructor self-efficacy. Hardy et al. (2017) defined instructors' verbal persuasion as the verbal interactions regarding the success and prospects for success in the teaching context. Relatedly, vicarious experiences regard observing others model behavior. Gonzalez et al. (2017) asserted that verbal persuasion and vicarious experiences occur during instructor professional development training. They explained that when someone with whom the instructor identifies performs well, the instructor's self-efficacy should increase. Those instructors who have had access to professional development regarding teaching online will likely feel more self-efficacious regarding their pedagogy. Therefore, this study poses the following hypothesis:

***H2:** There will be a positive correlation between completing professional development and online teaching self-efficacy.*

In addition to prior experience and professional development, swiftly shifting to online teaching may be especially complicated for instructors who are new to teaching at the university level (e.g., graduate teaching assistants; GTAs). Having little or no training, GTAs plunge into the role of college instructors (Roach, 1977). Even when training programs are offered to these new instructors, GTAs still lack classroom management experience (Golish, 1999; Young & Bippus, 2008). In addition to being close in age to their students, GTAs often fear their students will question their credibility and power in the classroom (Golish, 1999; Pyltak & Houser, 2014). These prior studies suggest that GTAs may have lower self-efficacy than instructors or faculty. There is no direct test, however, of online teaching self-efficacy of GTAs compared to instructors and faculty. As a result, the following research question is posed:

***RQ1:** Is instructor online teaching self-efficacy influenced by job role?*

Instructor Disclosures of Private Information

The online teaching self-efficacy of college and university instructors is likely to have downstream consequences for communication between instructors and students. One such outcome is instructor disclosures of private information, which has proved vital in student learning (e.g., Frymier & Houser, 2000; Martin et al., 2000; Song et al., 2016). For highly self-efficacious instructors, their self-disclosure strategies might be the same online as they are in person. On the other hand, teaching self-efficacy leads to trying new teaching strategies (Riggs &

Enochs, 1990). Therefore, having high self-efficacy might mean that instructors adapt to the medium of the online teaching format.

Instructor self-disclosures are important to students in online classes (Song et al., 2016). In online courses, students value instructor social presence (Bowers & Kumar, 2015). Instructor affective responses, including self-disclosure, are typically less present in online classes than FtF, resulting in a lack of connectedness with students (Bowers & Kumar, 2015). Lack of connectedness is one of the major factors leading to student attrition rates (Rovai & Wighting, 2005). Conversely, those students who are likely to stay enrolled in online classes report higher levels of instructor presence and connectedness online (Hart, 2012; Ivankova & Stick, 2005). Instructor self-disclosure is a useful tool in online courses. Self-disclosure personalizes and explains the course content and can enhance social presence.

Instructor disclosures of private information play a crucial role in teaching. Instructor self-disclosures have positive classroom outcomes, including increased content clarity (Hosek & Thompson, 2009), increased student cognitive learning (Cyanus & Martin, 2004), increased student interest (Cyanus & Martin, 2004), increased instructor clarity (Cyanus & Martin, 2008), and higher student satisfaction of relationships with their instructors (Song et al., 2016). DiVerniero and Hosek (2011) found that CPM is a useful theoretical framework for understanding instructor self-disclosures online. However, their study was conducted pre-pandemic and contextually investigated instructor self-disclosures on social media, making it difficult to generalize from that study to present circumstances. To extend and complement their study, this study will address self-disclosures in online classrooms.

CPM provides a framework to investigate instructors' disclosures of private information within the computer-mediated classroom. In general, Petronio's (2002) CPM provides a structure

for making sense of the decision to conceal or reveal private information. The theory also helps make sense of how people manage their privacy boundaries. Petronio's (2002, 2013) explication of the theory begins with the premise that individuals feel that they own their private information and perceive that they have the right to control the ownership of their private information. To manage potential risks of sharing information and turbulence that could occur, individuals develop privacy rules to govern their decisions about sharing their private information. Those privacy rules, if enacted often, become privacy orientations.

Petronio (2013) stated that core criteria and catalyst criteria drive privacy rule formation. Core criteria are "stable gauges used to make choices about privacy rules" (Petronio, 2013, p. 10). Core criteria include privacy orientations, cultured expectations, gendered tendencies, and personality characteristics. On the other hand, "catalyst privacy rule criteria are more variable factors that influence privacy choices" (Petronio & Child, 2020, p. 77). Catalyst criteria include motivational goals, risk-benefit analyses, situational conditions, and emotional needs. Hosek and Thompson (2009) reported that instructors develop privacy rules based on content and relational motivations, contextual factors, content relevancy, past experience, and risk-benefit analyses. Their study shows that instructors create privacy rules for their teaching self-disclosures.

Additional CPM research in instructional communication supports the finding that instructors selectively decide whether to reveal private information to their students (McBride & Wahl, 2005). Using CPM to investigate instructor disclosure, McBride and Wahl (2005) found that instructors tend to reveal private information regarding their families, feelings, everyday activities, and personal history. Instructors also tended to conceal highly personal information, negative relationships, sexual topics, and information that could damage their credibility. Where Hosek and Thompson (2009) focus on privacy rules, McBride and Wahl (2005) described the

types of topics that were shared. Together, though, the studies suggest that CPM is a helpful theoretical lens for examining private information sharing in the classroom setting.

Teaching self-efficacy may directly affect how instructors decide to strategically share their private information because self-efficacy is related to teaching strategies (Riggs & Enochs, 1990). High teaching self-efficacy enables instructors to attempt new teaching strategies and take bolder actions (Riggs & Enochs, 1990). Highly self-efficacious instructors may choose to strategically share private information to bolster student learning. These instructors may be able to share private information effectively without risk to their privacy. As Petronio (2002) states, there are various risks in disclosing private information. When determining whether or not to disclose private information, one of the high-risk factors instructors consider is their perception of credibility (Hosek & Thompson, 2009). Instructors with low self-efficacy may refrain from self-disclosures in the classroom to prevent the possibility of lowering their perceived credibility.

Consequently, instructors' online strategic disclosures of private information will likely relate to their online teaching self-efficacy. The relationship between instructor self-disclosure and teaching self-efficacy has not been investigated in prior research. Thus, the following research question is posited:

***RQ2:** Is there a relationship between online teaching self-efficacy and instructor strategic private information sharing?*

Privacy rules and strategies of information sharing reflect one way that instructor communication may differ in FtF versus online classes. Sharing information may also differ in depth or breadth (Myers, 1998). Computer-mediated communication presents assorted barriers to student-teacher communication not found in the FtF setting (e.g., Bao, 2020; Bawa, 2016; Beaunoyer et al., 2020). These barriers may limit the extent to which instructors self-disclose.

Limitations in the frequency of instructor self-disclosures may lead to a lack of breadth and depth of self-disclosures.

Instructor disclosures may appear differently online than in FtF classrooms. Instructors' frequency of communication and immediacy are often limited by the nature of computer-mediated communication (Young et al., 2011). These communication barriers may influence the breadth and depth of online self-disclosures when compared to FtF self-disclosures. Song et al. (2016) found that instructor self-disclosures tend to be a more crucial component of online teaching than FtF as students need them to foster a strong relationship with their instructor. However, no previous research has compared instructor online self-disclosures to FtF disclosures from the instructor's perspective. We now find ourselves in a unique time to investigate instructor online self-disclosures of all experience levels who are simultaneously teaching online due to COVID-19. Whereas self-disclosures are crucial to online teaching (Song et al., 2016), it is imperative to know if the nature of computer-mediated communication impedes the breadth and depth of those disclosures. For that reason, the following research question is asked:

RQ3: *Is there a difference in (a) strategic sharing, (b) breadth of instructor self-disclosures, (c) depth of instructor self-disclosures, (d) teaching self-efficacy, and (e) closeness with students in online classes compared to FtF classes?*

METHOD

Sample and Procedures

The participants in this study were 125 college-level faculty members (31 men, 92 women, 2 sex unreported) who were teaching online at the time of the study. The age of the participants ranged from 23 to 70 ($M = 44.27$, $SD = 11.32$). The majority (85%, or $n = 106$) of participants were Caucasian. Participants included 20 Graduate Teaching Assistants, 14 non-tenure-track instructors, 18 tenure-track instructors, 43 tenured professors, and 19 part-time instructors, and 11 full-time instructors. The total years of teaching ranged from 0 to 40 ($M = 14.92$, $SD = 10.11$) and total number of completed semesters teaching online ranged from 0 to 80 ($M = 5.96$, $SD = 10.79$).

Participants were recruited for this anonymous, IRB-approved study in a variety of ways using a snowball sampling process. A brief description of the study and survey link was distributed on the National Communication Association's COMMNotes ($n = 29$), Northern Illinois University's faculty announcement e-mails ($n = 22$), and private social media groups that specifically include higher education instructors teaching through the pandemic ($n = 33$).

In addition to the other recruiting methods, a brief description of the study and survey link were sent directly to randomly selected e-mails of faculty members at Northern Illinois

University ($n = 41$). The randomization process started by visiting the university's list of colleges, schools, and departments where the various departments were listed in alphabetical order. After numbering each of the departments from 1-46, a random number generator was used to determine 15 departments. For each of the departments, currently teaching faculty members were listed and numbered in the order they appeared on the official university department's website. The same random number generator was used to select three faculty members of each department to send the brief study description and survey link.

Data collection began during the 13th week of the Fall semester, giving instructors ample time to assess their teaching self-efficacy and communication behaviors in their online classes. Upon clicking the link to the survey, participants were first asked to read over and sign the consent form. Imitating the recommendation of Plax et al. (1986), participants were instructed to complete research instruments while referencing the most recent online class with which they interacted. The survey took approximately 20 minutes to complete, after which participants were thanked for their involvement and invited to provide an e-mail address if they wanted to be included in a drawing for one of four \$25 gift cards.

The survey included measures of university role (GTA, instructor, faculty), teaching experience (in general and online), professional development, instructor self-efficacy, private information sharing (strategic sharing, breadth of shared topics, depth of shared information), and comparison measures of face-to-face versus online classes. A brief description of each measure is provided in the following sections, and the Appendix contains the survey scales and items.

Measures

Teaching Experience

To measure teaching experience, participants were asked six open-ended questions from Gosselin's (2009) Online Teaching Self-Efficacy Inventory questionnaire. Participants were asked their years and semesters teaching higher education in general and online (e.g., "How many years have you been teaching in your current position? The value must be greater than or equal to 0"; "How many semesters (Fall, Spring, Summer) have you been teaching online courses? The value must be greater than or equal to 0").

Professional Development

To measure participants' professional development training regarding online teaching, participants are asked to respond to six Likert-type statements rating the amount of professional development they had completed before (three items) and after (three items) the emergency shift online due to COVID-19. The scale ranged from *none at all* (1) to *a great deal* (5; e.g., "Before the emergency shift online, I had completed professional development about online teaching"; "After being shifted online, I took professional development courses about online teaching").

The measure of pandemic professional development prior to the pandemic had a Cronbach's alpha reliability coefficient of $\alpha = .90$ ($M = 2.38$, $SD = 1.16$). The measure of pandemic professional development after the pandemic had a Cronbach's alpha reliability coefficient of $\alpha = .83$ ($M = 2.87$, $SD = 1.04$).

Teaching Self-Efficacy

Instructor self-efficacy was measured using several scales: general teaching self-efficacy, general online teaching self-efficacy, virtual interaction self-efficacy, and course mitigation self-efficacy. Several measures were used to allow for a richer understanding of instructor self-efficacy during this forced shift to online teaching.

To measure general teacher self-efficacy and general online teaching self-efficacy, two five-item, 7-point semantic differential scales were used based on Mottet et al.'s (2004) teacher self-efficacy scale. Instructors were asked, "How effective are you at getting your students to learn?" and "For online classes, how effective are you at getting your students to learn?" Following these questions, participants were asked to identify the number that most accurately reflects their judgment of their teaching effectiveness using the following bipolar adjectives: *Effective/Ineffective*, *Efficient/Inefficient*, *Skilled/Unskilled*, *Capable/Incapable*, *Successful/Not Successful*. The general teaching self-efficacy scale had a Cronbach's alpha reliability coefficient of $\alpha = .89$ ($M = 6.00$, $SD = 0.68$). The general online teaching self-efficacy scale had a Cronbach's alpha reliability coefficient of $\alpha = .87$ ($M = 5.28$, $SD = 0.90$).

Additionally, two subscales of Gosselin's (2009) Online Teaching Self-Efficacy Inventory (OTSEI) were used to measure aspects of online teaching self-efficacy. For the two subscales, instructors were asked to rate their confidence on a 10-point scale, from *no confidence* (0) to *complete confidence* (10). The response scale of the original inventory was retained in this study. The first subscale was the 10-item measure of virtual interaction (e.g., "In the context of online courses, I can effectively express emotion within the online environment"). Virtual interaction is defined for participants as "faculty member's effective facilitation of instructor-student interaction, meaningful student cooperation, and the ability to establish a positive social climate that engages students through fostering motivation, intellectual commitment, and personal development." The virtual interactions self-efficacy scale had a Cronbach's alpha reliability coefficient of $\alpha = .85$ ($M = 8.08$, $SD = 1.46$).

The second subscale was the seven-item measure of course content mitigation (e.g., "In the context of online courses, I can transfer lecture presentations used in face-to-face style courses to online formats"). Course content mitigation is defined for participants as "the ability to successfully transfer instructional materials from face-to-face to online courses." The course content mitigation self-efficacy scale had a Cronbach's alpha reliability coefficient of $\alpha = .86$ ($M = 8.71$, $SD = 1.47$).

Strategic Private Information Sharing

To measure participants' strategic private information sharing, a scale was created based on Hosek and Thompson's (2009) coded themes instructors use to establish privacy rules with students. Participants were presented with items designed to reflect Hosek and Thompson's (2009) themes and were asked to think back to the most recent online course with which they interacted to rate their level of agreement with each statement on a Likert response scale, from *strongly disagree* (1) to *strongly agree* (7). The pool of items for this measure included items designed to reflect the five motivational criteria instructors used when deciding whether to disclose private information to students based on Hosek and Thompson's (2009) qualitative analysis. The items reflected content relevancy (e.g., "I disclose private information when relevant to course content"), relational development (e.g., "I disclose personal information to foster relational development with my students"), contextual criteria (e.g., "I tend to disclose private information when addressing the entire class"), experience (e.g., "If I have found past teachers' private disclosures inappropriate, I avoid making similar disclosures to my students), and risk-benefit analyses (e.g., "I do not reveal private information to my students that could damage the credibility of my university").

The items were subjected to a measurement analysis that included examination of item-to-item correlations, item-to-total correlations, item-to-external factor correlations, and an exploratory factor analysis. To complete the exploratory factor analysis, the recommendation of Costello and Osborne (2005) with maximum likelihood extraction and direct oblimin rotation. The measurement analysis suggested that the scale was not composed of subscales but rather was

a single, overall measure of strategic private information sharing. The results of the analysis retained 17 items (e.g., “I disclose personal information to foster relational development with my students”). The Cronbach’s alpha reliability coefficient was $\alpha = .96$ ($M = 4.58$, $SD = 1.30$).

Depth of Private Information Sharing

To measure online instructors’ depth of private information sharing, participants were asked to respond to two items on a Likert scale from *never* (1) to *always* (7; i.e., “I tend to reveal personal information to my students...,” and “I tend to share personal information with my students...”). The Cronbach’s alpha reliability coefficient was $\alpha = .97$ ($M = 3.16$, $SD = 1.25$).

Breadth of Private Information Sharing

To measure online instructors’ breadth of private information sharing, participants were asked to respond to three items on a Likert response scale. Participants were first asked whether “the private information that [they] share with students is...” *impersonal* (1) to *personal* (7). The following two questions asked participants to rate their level of agreement from *strongly disagree* (1) to *strongly agree* (7): “I share personal information about a lot of different topics

with my students,” and “The type of information I share with my students reflects personal closeness. The Cronbach’s alpha reliability coefficient was $\alpha = .84$ ($M = 3.79$, $SD = 1.36$).

Differences Between Online and Face-to-Face

To measure potential differences between online and face-to-face classrooms, participants were asked to rate their levels of self-efficacy, strategic sharing of private information, breadth of disclosures, depth of disclosures, and closeness with students as greater in either FtF or online classrooms. Participants were asked to rate whether they experienced any of the constructs more in the online classroom, FtF classroom, or the same in both online and FtF classrooms by rating each item on a scale from *much greater in the online classroom* (1) to *much greater in the face-to-face classroom* (7), with the midpoint being *about the same in both the online classroom and face-to-face classroom* (4).

First, teaching self-efficacy was assessed with three items (e.g., “I feel confident in my ability to teach students...”). The Cronbach’s alpha reliability coefficient was $\alpha = .84$ ($M = 5.22$, $SD = 1.10$).

Second, strategic sharing was assessed with two items (e.g., “The way that I use information strategically with my students is...”). The Cronbach’s alpha reliability coefficient was $\alpha = .82$ ($M = 3.97$, $SD = 0.83$).

Third, depth of private information sharing was assessed with two items (e.g., “The depth to which I share private information with my students is...”). The Cronbach’s alpha reliability coefficient was $\alpha = .90$ ($M = 4.49$, $SD = 0.90$).

Fourth, breadth of private information sharing was assessed with two items (e.g., “The amount of private topics that I share with students is...”). The Cronbach’s alpha reliability coefficient was $\alpha = .73$ ($M = 4.62$, $SD = 0.94$).

Finally, closeness with students was assessed with two items (e.g., “My personal connection with students is...”). The Cronbach’s alpha reliability coefficient was $\alpha = .96$ ($M = 5.48$, $SD = 1.24$).

RESULTS

The first hypothesis predicted that online teaching experience would be positively correlated with self-efficacy. Specifically, the hypothesis predicted that the greater the amount of teaching experience, the greater levels of self-efficacy experienced. To test this hypothesis, a series of Pearson correlations were assessed between the three measures of online teaching self-efficacy (i.e., virtual interactions, course content mitigation, and generalized online teaching self-efficacy) and two items that measure online teaching experience (i.e., number of courses taught online and number of online courses designed). Number of online courses taught was not significantly correlated to virtual interactions self-efficacy ($r = .11, p = .23$), course content mitigation self-efficacy ($r = -.06, p = .53$), or general online teaching self-efficacy ($r = .03, p = .71$). However, number of online courses designed was significantly correlated to all three measures of online teaching self-efficacy: virtual interactions self-efficacy ($r = .23, p = .01$), course content mitigation self-efficacy ($r = .19, p = .03$), and general online teaching self-efficacy ($r = .25, p < .01$). Due to the different patterns of results for the two measures of prior online teaching experience, Hypothesis 1 was partially supported.

The second hypothesis predicted that professional development would improve online teaching self-efficacy. Specifically, the hypothesis predicted that the greater the amount of professional development completed, the greater the level of teaching self-efficacy. To test this hypothesis, a series of Pearson correlations were assessed that investigated the relationship

between two measures of professional development (i.e., pre-pandemic and post-pandemic) and three measures of self-efficacy (i.e., virtual interactions, course content mitigation, and generalized online teaching self-efficacy). Amount of online teaching professional development taken prior to the pandemic was significantly correlated to virtual interactions self-efficacy ($r = .25, p < .01$), course content mitigation self-efficacy ($r = .23, p = .01$), and general online teaching self-efficacy ($r = .37, p < .01$). However, amount of online teaching professional development taken after the start of the pandemic was not significantly correlated to virtual interactions self-efficacy ($r = -.05, p = .58$), course content mitigation self-efficacy ($r = .04, p = .66$), or general online teaching self-efficacy ($r = .00, p = .96$). Hypothesis 2 was partially supported.

The first research question inquired whether there was a difference in online teaching self-efficacy due to differences in job roles. To answer this question, a series of one-way ANOVAs was conducted. The independent variable in the analysis, job roles, was coded into six categories: part-time instructor, full-time instructor, GTA, non-tenure-track position, tenure-track position, and tenured professor. There were no statistically significant differences between group means for virtual interactions self-efficacy, $F(5,94) = .18, p = .97$; course content mitigation self-efficacy, $F(5,95) = .65, p = .67$; or general teaching self-efficacy, $F(5,95) = .84, p = .40$. In answer to the research question, there were no statistically significant differences in online teaching self-efficacy attributable to different job roles.

The second research question inquired whether instructors' strategic private information sharing in the online classroom related to their online teaching self-efficacy. To answer this question, a series of Pearson correlations was assessed between the three measures of online teaching self-efficacy (i.e., virtual interactions, course content mitigation, and general online

teaching self-efficacy) and three self-disclosure variables (i.e., strategic information sharing, breadth of self-disclosures, and depth of self-disclosures). Results are shown in Table 1. In answer to the research question, there is no relationship between online teaching self-efficacy and the measures of communication assessed in the study.

Table 1
Correlation Matrix

Variable	1	2	3	4	5	6
1. Strategic Private Information Sharing	–					
2. Breadth of Information Sharing	.78**	–				
3. Depth of Information Sharing	.71**	.78**	–			
4. Virtual Interaction Self-Efficacy	.00	.16	.16	–		
5. Course Content Mitigation Self-Efficacy	-.08	-.01	-.01	.38**	–	
6. General Online Teaching Self-Efficacy	-.08	.01	-.04	.43**	.56**	–

** $p < .01$.

The third research question addressed possible experienced differences of strategic information sharing, breadth of disclosures, depth of disclosures, teaching self-efficacy, and perceptions of closeness with students when teaching online versus teaching FtF. To investigate this research question, a series of single-sample *t*-tests was conducted comparing the scale grand mean with the scale midpoint (4). In this set of scales, lower values indicated a greater likelihood of that construct in online classes, and higher values indicated a greater likelihood of that construct in face-to-face teaching. A report of the scale midpoint indicates the same perception

of that construct in both FtF and online classes. The scale mean for strategic sharing was not statistically different from the scale midpoint, $t(118) = -0.30, p = .74 (M = 3.97, SD = .08)$. Breadth of self-disclosures was significantly greater in FtF classes than online classes, $t(118) = 7.15, p < .001 (M = 4.62, SD = .94)$. Depth of self-disclosures was significantly greater in FtF classes than online classes, $t(118) = 5.89, p < .001 (M = 4.49, SD = .90)$. Teaching self-efficacy was significantly greater in FtF classes than online classes, $t(118) = 12.06, p < .001 (M = 5.22, SD = 1.10)$. Closeness with students was significantly greater in FtF classes than online classes, $t(118) = 13.00, p < .001 (M = 5.48, SD = 1.24)$. In answer to the research question, instructors reported the same amount of strategic sharing of self-disclosures in both online and FtF classes. Additionally, instructors reported significantly greater teaching self-efficacy, greater closeness with their students, more depth of self-disclosure to their students, and more breadth of self-disclosure to their students when teaching in FtF classes as compared to teaching in online classes.

DISCUSSION

The goal of this investigation was to examine how college and university instructors' self-efficacy and self-disclosures have been affected by the switch in teaching modality from FtF to online. As a result of COVID-19, many college and university faculty were rapidly required to alter their course modality to teach online. The change in teaching modality was hypothesized to have downstream consequences on instructors' feelings of teaching self-efficacy, instructors' communication with their students, and their evaluation of teaching online compared to FtF.

This study investigated whether online teaching experience, professional development, and professional role influenced online teaching self-efficacy. The results indicated that instructors who have experience designing online courses (H1) and took online teaching professional development training prior to the pandemic (H2) reported higher levels of online teaching self-efficacy when transitioned from teaching FtF to online. The findings are consistent for all three measures of online teaching self-efficacy in the study (i.e., virtual interactions self-efficacy, course content mitigation self-efficacy, and general online teaching self-efficacy). That means that the more instructors designed online courses, the more they felt confident in their ability to establish a positive social climate, successfully transfer instructional materials from FtF to online courses, and teach online, in general. Interestingly, online teaching experience alone did not significantly enhance instructors' self-efficacy. As mastery experience is one factor that serves as a foundation of self-efficacy (Bandura, 1977), these findings suggest that mastery

experience may be gained by designing and implementing an online course rather than through teaching experience alone. These results imply that graduate teaching assistants and other teachers who teach online courses designed by a faculty supervisor might not gain self-efficacy from the experience of teaching online.

The findings also illuminate that the more online professional development training they took prior to the pandemic and the more instructors designed online courses, the more self-efficacious they felt. That means those instructors who had more professional development training prior to the pandemic or had more experience designing online courses were more confident in their ability to (a) establish a positive social climate, (b) successfully transfer instructional materials from FtF to online courses, and (c) teach online, in general.

Mastery experience might also be influenced by professional development training. In this study, professional development that was taken prior to the pandemic was positively correlated with online teaching self-efficacy, but the same was not true of professional development taken after the pandemic began. This finding is consistent with prior research that indicates that those instructors who have had more time implementing technology software throughout their teaching careers achieve greater personal mastery (Anderson et al., 1995; Hardy et al., 2017). One might think that an instructor's role, which is typically tied to the amount of experience one has, would be correlated to mastery experience and thus teaching self-efficacy. In this study, an instructor's role did not significantly influence their feelings of self-efficacy while teaching online (RQ1). Online teaching self-efficacy seems to be tied more to experience designing classes and having taken online teaching professional development prior to online teaching due to the pandemic than as a function of job role.

In addition to investigating the predictors of online teaching self-efficacy, the communication between faculty and students in online classes was investigated in this study. Specifically, this study sought to determine whether online teaching self-efficacy influenced private information sharing of online instructors. The results indicated that strategic sharing, breadth, and depth of self-disclosures in online classes were not related to instructors' online teaching self-efficacy (RQ2). Although self-efficacy and self-disclosures share similar student learning outcomes in FtF teaching settings (e.g., Cayanus & Martin, 2004; Hardy et al., 2017), there was no relationship between self-efficacy and self-disclosures in the online classes in this study.

Lastly, this study investigated how instructors perceived their teaching self-efficacy, strategic information, depth and breadth of disclosures, and closeness with their students while teaching online as compared to when they teach FtF. Instructors reported higher levels of teaching self-efficacy and closeness with their students and self-disclosed to their students with greater breadth and depth in FtF classes as opposed to online classes (RQ3). The results that instructors report self-disclosing with less breadth and depth online parallel Song et al.'s (2016) finding, which demonstrates instructors disclose significantly less in online teaching than FtF teaching settings. Song et al. (2016) interpreted their results by stating self-disclosures are imperative to building student-instructor relationships when teaching online. The findings of this current study indicated that instructors feeling less close to their students when online may have to do with the fact that they share self-disclosures with less breadth and depth while online. As Bowers and Kumar (2015) illuminate, instructors' self-disclosures are typically less present in online classes than FtF, resulting in a lack of connectedness with students. However, the opposite may be true in that instructors disclose with less breadth and depth while online because they feel

less close to their students. Interestingly, the participants in this study perceived themselves as equally strategic in sharing personal information with their students when FtF as they are in the online setting. Perhaps they feel that it is more strategic to withhold information when teaching online, although data would suggest they do the opposite in order for students to have greater student learning outcomes and student-teacher relationships (Bowers & Kumar, 2015; Song et al., 2016).

Practical Implications

The findings of this investigation provide several implications for college and university administrators as well as instructors. First, the findings of this study suggest that colleges and universities should seek to revert to offering FtF classes after the pandemic in order for their instructors to have higher levels of teaching self-efficacy. Self-efficacy is positively related to teacher job satisfaction (Kasalak & Dagyar, 2020) and positively predicts instructor commitment or the psychological attachment that instructors have to the profession of teaching (Bresó et al. 2011; Chesnut & Burley 2015; Coladarci, 1992; Gonzalez et al., 2017; Visser-Wijnveen et al. 2012). Commitment both positively predicts teacher dedication and longevity in the teaching career and acts as a resistance to teacher burnout (Chesnut & Burley, 2015). It is advantageous for colleges and universities to offer FtF classes when possible to ensure that those instructors who feel more self-efficacious teaching FtF can continue to teach FtF.

If colleges and universities do plan to continue offering online courses, however, they should advise instructors to take online teaching professional development training long before they begin teaching online as well as facilitate faculty development of their own online courses in order to increase online teaching self-efficacy. These findings may more severely influence GTAs than other instructors. GTAs are often given little prior instruction before being thrust into teaching a class that has already been designed by a faculty director or faculty supervisor. It may be advantageous for master's and doctoral programs to investigate the self-efficacy of their GTAs as the findings of this study would indicate that those GTAs teaching online courses with little preparation or ability to design their own courses likely experience low levels of teaching self-efficacy. In addition, those programs may wish to implement training farther in advance of GTAs' first experiences as the instructor at large and provide them with more extended periods for constructing their courses to raise their self-efficacy levels.

Limitations and Future Research

Although this study revealed interesting findings, several limitations should be addressed in future research. First, multiple recruiting tactics were utilized to obtain an adequate number of participants, which ultimately led to a sample that had more female than male participants. Although preliminary analyses showed no sex differences on any of the dependent measures of the study, future studies should replicate the investigation with a random sample.

Second, due to the varying methodologies of recruiting participants, it is assumed that instructors from varying disciplines were included in this sample. However, this study did not measure the variability of the topic taught. This study used the strategic private information sharing measure, which was designed based on Hosek and Thompson's (2009) coded themes that instructors use to establish privacy rules with students. However, Hosek and Thompson's (2009) sample consisted of communication instructors. Because this current study includes instructors outside of the communication discipline, topic variability could account for the lack of significant strategic sharing findings. In other words, strategic sharing might vary based on the class topic, but the class topic was not measured in this study.

This study found clear precursors to teaching self-efficacy, including online course design experience and professional development. It would be interesting to investigate further why instructors reported greater teaching self-efficacy in the FtF setting than online. Future research may wish to investigate how teachers' attitudes toward the different teaching modalities are influenced and how those attitudes influence student learning.

Conclusion

The goal of this investigation was to examine how college and university instructors' self-efficacy and self-disclosures have been influenced by the switch in teaching modality from FtF to online. This study found instructors' online teaching self-efficacy is influenced by experience of online course development and professional development. Results indicated that

instructors' strategic self-disclosures and their breadth and depth of disclosures are not influenced by their online teaching self-efficacy. Results also indicated that instructors are significantly more self-efficacious, self-disclose with greater breadth and depth, and feel closer to their students when teaching FtF than online.

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APPENDIX
SURVEY MEASURE ITEMS

Teaching Experience Scale

1. How many years have you been teaching in higher education? The value must be greater than or equal to 0.
2. How many years have you been teaching in your current position? The value must be greater than or equal to 0.
3. How many semesters (Fall, spring, summer) have you been teaching online courses? The value must be greater than or equal to 0.
4. How many courses have you taught online? The value must be greater than or equal to 0.
5. How many online courses have you designed? The value must be greater than or equal to 0.
6. How many courses have you adapted from face-to-face to online formats? The value must be greater than or equal to 0.

Professional Development Scale

1. Before the emergency shift online, I had completed professional development about online teaching.
 - (1) None at all
 - (2) A little

- (3) A moderate amount
 - (4) A lot
 - (5) A great deal
2. Before the emergency shift online, I had taken professional development courses about online teaching.
- (1) None at all
 - (2) A little
 - (3) A moderate amount
 - (4) A lot
 - (5) A great deal
3. Before the emergency shift online, I had read resources about online teaching.
- (1) None at all
 - (2) A little
 - (3) A moderate amount
 - (4) A lot
 - (5) A great deal
4. After being shifted online, I completed professional development about online teaching.
- (1) None at all
 - (2) A little
 - (3) A moderate amount
 - (4) A lot
 - (5) A great deal

5. After being shifted online, I took professional development courses about online teaching.

- (1) None at all
- (2) A little
- (3) A moderate amount
- (4) A lot
- (5) A great deal

6. After being shifted online, I read sources about online teaching.

- (1) None at all
- (2) A little
- (3) A moderate amount
- (4) A lot
- (5) A great deal

General Teaching self-efficacy Scale

1. How effective are you at getting your students to learn?

Ineffective	○ ○ ○ ○ ○ ○ ○ ○	Effective
Inefficient	○ ○ ○ ○ ○ ○ ○ ○	Efficient
Unskilled	○ ○ ○ ○ ○ ○ ○ ○	Skilled
Uncapable	○ ○ ○ ○ ○ ○ ○ ○	Capable
	○ ○ ○ ○ ○ ○ ○ ○	

4. Promote student participation in my courses.
5. Project a positive virtual social presence (the perception of being real).
6. Effectively express emotion within the online environment.
7. Use emotion to effectively enrich communication.
8. Adopt a teaching style that allows for the facilitation of learning through guidance.
9. Manage the pace of facilitating interaction.
10. Adequately convey that I am available for consultation.

Course Content Mitigation Self-Efficacy Scale

Course content migration refers to the ability to successfully transfer instructional materials from face-to-face to online courses; the contents of the transferred information are sufficiently comprehensive to achieve the defined learning objectives and outcomes. For the scope of this study, materials refer to information created and prepared by the course facilitator or online instructor and are exclusive of standard textbooks produced by recognized publishers. Please

to-face style courses to online formats.

6. Determine the appropriate resources (i.e., technological personnel, software, etc.) to assist with transferring course materials from face-to-face to online courses.

7. Manage the time needed to transfer course content from face-to-face to online formats.

Strategic Private Information Sharing Scale

Please think back to the most recent online course you interacted with and rate your level of agreement with the following statements from 1 to 7 (1=Strongly disagree and 7=Strongly agree).

Content relevancy

1. I disclose private information when relevant to course content.
2. If a story from my past is relevant to the class, I will typically share it with my students.
3. I will disclose private information if it is an apt example for my class.
4. I will reveal personal information about myself to enhance student learning.

Relational development

5. I disclose personal information to foster relational development with my students.
6. To build better relationships with my students, I will divulge personal information about myself.
7. I will reveal private information about myself if I believe it will result in students finding me more approachable.
8. I disclose private information to my students to encourage them to open up to me.
9. I will reveal private information about myself to encourage my students to reveal information about themselves.

Contextual criteria

10. I tend to disclose private information when addressing the entire class.
11. I tend to disclose private information when addressing a single student.
12. I tend to disclose private information when addressing students of the same sex.
13. I tend to disclose private information when talking with a smaller group of students.
14. I tend to disclose private information on a discussion board with my students.
15. I tend to disclose private information when in a one-on-one meeting with my students.

Past experience

16. If I have found past teachers' private disclosures inappropriate, I avoid making similar disclosures to my students.
17. I avoid private disclosures that former teacher(s) have made, which made me uncomfortable.
18. I consider how others manage their privacy when deciding to disclose private information to my students.

19. Thinking back to instructors I had, I tend to disclose private information that I found beneficial as a student.

20. I do not consider my past experiences when disclosing private information to the class.

Risk-benefit analyses

21. I do not reveal private information to my students that could damage the credibility of my university.

22. I reveal private information to my students regardless of my outcomes it could have on my institution.

23. I do not reveal private information to my students that could damage the credibility of my peers.

24. I reveal private information to my students regardless of the outcomes it could have on my peers.

25. I do not reveal private information to my students that could damage the credibility of my colleagues.

26. I reveal private information to my students regardless of my outcomes it could have on my colleagues.

27. I avoid private disclosures to my students that could cause discomfort to them.

28. I reveal private information to my students

29. I do not reveal private information to my students that could damage the reputation of my family members.

30. I do not reveal private information to my students that could damage the reputation of my friends

31. I reveal private information to my students, even if it could negatively impact their perception of my identity.

32. I conceal private information from my students if I feel like it would damage their respect towards me.

Prior relationship privacy boundary

33. I reveal private information to students only after I have built relationships with my students.

34. I only reveal private information after I feel comfortable with my students.

35. I wait to reveal private information until I have formed a relationship with my student(s).

Relate privacy boundary

36. When students reveal private information about themselves, I reveal private information about me to relate to their disclosure.

37. If a student reveals information about themselves, I will reciprocate.

38. I reveal private information to connect to my students.

Depth of Private Information Sharing Scale

When answering the following questions, please refer to the most recent online class you interacted with.

1. I tend to reveal personal information to my students...

(1) Never

(2) Seldom

- (3) Sometimes
- (4) About half the time
- (5) A good amount
- (6) A lot of the times
- (7) Always

2. I tend to share personal information with my students...

- (1) Never
- (2) Seldom
- (3) Sometimes
- (4) About half the time
- (5) A good amount
- (6) A lot of the times
- (7) Always

Breadth of Private Information Scale

1. The private information that I share with my students is...

(Impersonal) 1 2 3 4 5 6 7 (Personal)

2. I share personal information about a lot of different topics with my students

- (1) Strongly disagree
- (2) Disagree

