

Faculty Satisfaction Teaching Online in the Time of COVID-19

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ABSTRACT

Due to COVID-19, many universities shifted to an online format last spring; many will deliver instruction online or use a hybrid model for the foreseeable future. Many faculty had little to no prior experience teaching online. The non-experimental comparative study involved a purposive international sample ($N = 251$) of faculty across disciplines and institutions who completed a 34-question online survey. Significant differences in satisfaction teaching online were found by teaching experience and receipt of support services. Administrators may use the results to provide support services such as mentoring, release time, technical support and training to faculty teaching online.

Keywords: *COVID-19; Postsecondary Education; Teaching Online; Satisfaction.*

1. Introduction

In the wake of COVID-19 virus pandemic, universities worldwide shut down face-to-face classes and on campus activities to ensure student, faculty, and staff safety [1]. The need to self-quarantine for public health safety has forced administrators to consider alternative educational settings so students can complete the current semester and potentially, semesters to come [2]. Many universities chose an online format to continue teaching and learning in spring 2020, and many will continue delivering instruction online or use a hybrid model for the foreseeable future. The quick push to get coursework online has likely created anxiety in faculty who had little to no prior experience teaching online [3]. Regardless of skill level or desire, many faculty were jettisoned into a new way of teaching. Some may have received significant support services in this new role and others may have received none. The strain of an unanticipated transition from a traditional classroom environment to one of teaching online creates dissatisfaction and frustration with new role responsibilities [4]. Creating a supportive environment in which the faculty member has administrative, technical, and peer coaching should make the transition easier and may improve retention.

Understanding faculty satisfaction teaching online during the COVID-19 epidemic has implications for higher education leaders and administrators as they

continue to operate at a time of increased challenges, diminished financial resources, and growing inequities in higher education, particularly in developing nations [5, 6]. The purpose of this nonexperimental comparative research was to measure differences in faculty satisfaction teaching online between faculty who received support services to teach online and faculty who did not in the time of COVID-19 virus pandemic. This study is the first to research differences in faculty satisfaction teaching online in the time of COVID-19.

2. Literature Review

Faculty acceptance of a role change is an integral component to successful integration from face-to-face to online teaching. The role transition faculty face can be smoother with the use of mentors and support for training [7]. In a comparison study, nursing faculty reported significantly higher satisfaction teaching online when receiving mentoring in comparison to faculty who did not receive mentoring [8].

The philosophical acceptance that online education is equivalent to that of traditional classroom teaching is important [9]. Self-efficacy in online teaching was found to be a significant factor related to satisfaction. Training and support which focus on student benefits of online learning, best practices for student engagement, and simple course management skills are

most significant in the early stages of teaching online [10]. Level of experience teaching online affected faculty satisfaction indicating faculty development in the role of online teacher is necessary [11].

Faculty report a lack of administrative and instructional support as a barrier to teaching online [12]. Efficiency in teaching online requires a certain level of comfort with computers [13]. Faculty who have appropriate training report general satisfaction teaching online [14]. Significantly higher satisfaction teaching online was reported when receiving technical support for software, hardware and the learning management system and training in the learning management system in comparison to faculty who did not receive these services [8]. Other factors noted in the literature that can affect faculty satisfaction teaching online include reliable technology, workload, compensation, preparation, and evaluation [15].

Indian educators shifting to online teaching in the wake of the COVID-19 pandemic reported challenges including how the scope of meaningful interaction, the range of innovative teaching, and the mechanics of the online environment [16]. In China, many faculty members reported little prior online teaching experience, a lack of early preparation, and insufficient educational technology support [17].

While higher education faculty continue to have concerns about the quality of online learning and their ability to engage meaningfully with their students [18,19], their confidence in online learning as an effective teaching approach is growing [19, 20]. Many faculty consider themselves as better prepared to teach online than at the beginning of the COVID-19 pandemic, largely due to institutional support received [19,20].

3. Methodology

The quantitative comparative study design guided data collection and analysis with an aim to examine differences in satisfaction levels between faculty who have and have not received support services to teach online. The study was approved by the Albany State University (ASU) and Walden University (WU) institutional review boards.

The purposive sample included international higher education faculty at any institution who had taught at least one online course since the COVID-19 pandemic and who were fluent in written English. A request to participate in the study was posted to personal social

media accounts (Facebook, Twitter, LinkedIn, WhatsApp, and Instagram) and higher education groups and included a short description of the study and a link to the online survey. Email requests for participation were sent to all ASU faculty. The invitation was also disseminated via the WU Participant Pool and the Center for Faculty Excellence blog post.

The online survey was hosted on Qualtrics from May 10 to August 4, 2020. The Faculty Satisfaction Teaching Online (FSTO) instrument included demographic questions; questions of support services such as mentoring, release time, technical support, and training that faculty have received or not received to teach online (yes or no); and 21 items for rating satisfaction teaching online on a 5-point Likert-type scale ranging from 1 = *highly dissatisfied* to 5 = *highly satisfied*. The FSTO was originally developed based on characteristics of teaching online extrapolated from literature reviews [8]. Aspects of satisfaction teaching online included student interaction and feedback, administrative and technical support, competency, self-efficacy, collaboration, quality of teaching, and flexibility. The FSTO was been modified to include the diverse population under study and the specific phenomenon of COVID-19 and teaching online. Definitions of support services are provided in Table 1. Internal consistency reliability of the 21 items measured by Cronbach's alpha was .895 in a pilot study with general education faculty with a homogenous group located within ASU: and .941 in a study with nursing faculty from 15 states within the U.S. [8]. In the current study, Cronbach's alpha was .940 indicating reliability held for in a diverse population of higher education faculty.

The independent variables were (1) number of years teaching in traditional face-to-face courses, (2) the number of courses taught fully online (3) ever taught a fully online course prior to COVID-19 pandemic, (4) percentage of face-to-face versus online courses taught prior to COVID-19, (5) mentoring, (6) release time for course preparation and management, (7) technical support for software and hardware issues, (8) technical support for LMS issues, (9), formal or informal training for Software and Hardware beyond the LMS 10) formal or informal training for the LMS and (11) the geographic location of primary faculty role. The dependent variable was faculty satisfaction teaching online.

Table 1. Definitions of Support Services.

Support Services	Definition
Mentoring	May include formal or informal interaction with an experienced individual teaching online who shares best practices teaching online and provides general development in the role of online teacher.
Release time	For course preparation and management may include the ability to forego normal academic duties such as clinical load, committee meetings, or teaching load to prepare for or to teach an online course.
Technical support	A computer technician available to assist with technical issues related to hardware and software needs; and issues related to the Learning Management System (LMS).
Training	Formal or informal training with software computer programs and hardware components; and training related to the LMS which may include instruction in how to upload documents, upload video links, set up discussion boards, enable chat sessions, create rubrics, or set up a grade book and post grades.

3. Results and discussion

The 251 completed surveys were analyzed using SPSS. Participants geographic teaching location included 80.1% ($n = 201$) from the United States and 19.9% ($n = 50$) international. Country origin of primary teaching responsibilities outside the United States included: Brazil (5.0%, $n = 14$); Germany (4.8%, $n = 12$); Canada (2.0%, $n = 5$); United Kingdom (1.2%, $n = 3$); France (0.4%, $n = 1$); Japan (0.4%, $n = 1$); Spain (0.4%, $n = 1$). Countries entered under Other (5.2%, $n = 13$) included Dominica, Ireland, the Kingdom of Saudi Arabia, New Zealand, the Philippines, Qatar, South Africa, Trinidad and Tobago. and the United Arab Emirates. Most of the participants taught primarily in English (92.8%, $n = 233$), followed by Portuguese (6.0%, $n = 15$).

Items 14-34 of the FSTO measured satisfaction in aspects of teaching online. Total satisfaction teaching online was calculated by summing the ratings on the 5-point Likert-type scale for each of the 21 items on the FSTO to generate a total satisfaction score ($N = 250$): Mean = 75.3320, Median = 77.00; Std. Deviation = 14.8331, Range = 69.000. The results indicate an overall high level of satisfaction. Table 2 shows the scores by level.

Table 2. Total Satisfaction Level ($N = 251$).

Score level	n	%
Low (21-40)	1	0.4
Moderate (41-74)	108	43.0
High (75 or above)	141	56.2
Missing	1	0.4

The median satisfaction ratings for questions 14-34 ($N = 251$) showed little variance, with the median and the mode for most items = 4. Notable differences include a median of 3 for Collaboration, Time available to create a new online course (mode = 2), Time available for course management, and Transition from teaching face-to-face to online. Other notable

differences include the modes (5) for Flexibility and Convenience teaching online in the time of COVID-19.

Independent t tests were used to examine differences in total satisfaction teaching online by geographic location of teaching assignment (United States or International) and prior experience teaching online. Levene's test verified equal variance among the groups.

Faculty whose primary faculty role was located in the United States had significantly **higher** total satisfaction scores ($M = 76.57$, $SD = 15.136$) than faculty who taught primarily outside of the United States ($M = 70.24$, $SD = 12.407$), $t(248) = 2.711$, $p = .007$.

More than half of the sample had taught fully online courses prior to the COVID-19 pandemic (57.8%, $n = 145$); 42.6% ($n = 106$) had not. Faculty who taught fully online courses prior to COVID-19 pandemic had significantly **higher** satisfaction scores ($M = 79.79$, $SD = 13.982$) than faculty who did not teach fully online courses prior to the COVID-19 pandemic ($M = 69.18$, $SD = 13.792$) $t(248) = 5.953$, $p < .001$. Faculty who had prior experience teaching online may have felt little to no role change and thus were better able to adapt to any changes that had to be made in the online course as a result of COVID-19 pandemic.

Using one-way ANOVA, between-group differences in total satisfaction were examined for years of experience teaching face-to-face courses, the number of courses taught online, and the ratio of face-to-face versus online courses taught prior to COVID-19 pandemic. Levene's test was used to verify equal variances among the groups.

Table 3. Years Having Taught Courses Face-to-Face.

Year categories	n	%
1-5 years	46	18.3
6-10 years	59	23.5
11-20 years	93	37.1
20+ years	53	21.1
Total	251	100.0

No significant difference in total satisfaction were found by years of experience teaching face-to-face courses using the initial four categories ($p = .248$) or when combining the middle ranges of years of experience to 6-20 years ($p = .127$). The lack of a significant difference may be due to factors such as teaching skills, speed of technology adoption, and digital language familiarity. Face-to-face classroom-teaching skills alone are not adequate in an online course. In the f-2-f classroom, there may be demonstrations or discussions in which faculty will rely on humor, facial expressions, or hand gestures to emphasize a point. In the online teaching format these skills are not adaptable, and faculty must rely on different techniques such as probing questions, written explanations, and technology driven learning experiences [9].

ANOVA revealed a significant difference in total satisfaction by the number of courses taught fully online, $F(3, 246) = 12.461, p < .001$.

Table 4. Number of Courses Taught Fully Online.

Course no.	n	%
1-5 courses	140	55.8
6-10 courses	38	15.1
11-20 courses	22	8.8
20+ courses	51	20.3
Total	251	100.0

A Tukey HSD post hoc test revealed that total satisfaction was significantly **higher** for faculty who taught 20 or more courses online ($M = 84.51, SD = 14.471$) than for faculty who taught 1-5 courses ($M = 71.12, SD = 13.772, p < .001$) or faculty who taught 6-10 courses online ($M = 75.76, SD = 15.501, p < .019$). Total satisfaction was significantly **higher** for faculty who taught 11-20 courses online ($M = 79.91, SD = 9.817$) than for faculty in the 1-5 courses group ($M = 71.12, SD = 13.772, p = .032$). No significant differences were found for satisfaction between faculty having taught 1-5 and 6-10 courses ($p = .265$), between faculty who taught 6-10 or 11-20 courses online ($p = .682$), or between faculty who taught 11-20 or 20+ courses ($p = .566$). These differences indicate that experience is a factor in online teaching. Repetition of teaching online courses allows faculty to identify strategies that are successful or unsuccessful, technology that works or does not work, and experiences that make each subsequent course taught less difficult.

ANOVA revealed a significant difference in total satisfaction by the percentage of face-to-face versus online courses taught prior to COVID-19, $F(3, 46) = 14.214, p < .001$.

Table 5. Percentage of Courses Taught Fully Online Prior to the COVID-19 Pandemic.

Percentage	n	%
< 25%	157	62.5
26-50%	37	14.7
51-75%	6	2.4
76% or more	51	20.3
Total	251	100.0

A Tukey HSD post hoc test indicated that total satisfaction was significantly **lower** for faculty who prior to COVID-19 taught less than 25% of their courses online ($M = 70.94, SD = 13.460$) than for faculty who prior to COVID-19 taught 26-50% of their courses online ($M = 81.57, SD = 10.918, p < .001$) or faculty who taught 76% or more of their courses online ($M = 83.20, SD = 15.605, p < .001$). No significant differences in total satisfaction were found between faculty who taught less than 25% of their classes online and those who taught 51-75% of their courses online prior to COVID-19 ($p = .092$). No significant differences were found between faculty who taught 26-50% of their classes online and faculty who taught 51-75% ($p = .968$) or 76% or more of their classes online prior to COVID-19 ($p = .947$).

A large number of participants ($n = 157$) taught less than 25% (possibly none) of their courses fully online prior to the COVID-19 pandemic. This inexperienced group of faculty may have felt the effects of an unexpected role transition. The urgency to create online courses and ready them for immediate student accessibility could have created anxiety and frustration thus resulting low satisfaction teaching online [4].

Independent t tests were used to examine differences in total satisfaction teaching online for six types of support services to teach online. Levene's test verified equal variance among the groups.

Faculty received mentoring support to teach online had significantly **higher** total satisfaction scores ($M = 77.76, SD = 14.057$) than faculty who did not receive this support ($M = 69.76, SD = 15.150, t(248) = 4.042, p < .001$, two-tailed). Mentoring provides the necessary support to assist faculty in the transition from traditional classroom teaching to an online teaching environment [9]. Mentors serve as a guide, coach, and role model for faculty taking on the new challenge of teaching online. Research has shown a positive correlation between mentoring and faculty satisfaction [21, 22].

Faculty who received release time for course preparation and management had significantly **higher** total satisfaction scores ($M = 78.97, SD = 14.588$) than faculty who did not receive release time ($M = 74.23, SD = 14.768, t(248) = 2.144, p = .033$, two-tailed).

Several factors influence teaching productivity to include time for online course development.

Table 6. Support Services Received ($N = 251$).

Type of Support	Yes		No	
	n	%	n	%
Q8. Formal or informal mentoring in the role of online teaching	174	69.3	77	30.7
Q9. Release time for course preparation and management	58	23.1	193	76.9
Q10. Technical support services for software and hardware in the role of online teaching	189	75.3	62	24.7
Q11. Technical support services for the LMS in the role of online teaching	186	74.1	65	25.9
Q12. Formal or informal training in-services related to software and hardware beyond the LMS in the role of online teaching	128	51.0	123	49.0
Q13. formal or informal training in-services related to the LMS for use in online teaching	186	74.1	65	25.9

Many faculty noted that it takes much more time to create an online course versus a traditional classroom course. Participants note time is affected by the “newness” of technology [23]. Administrators may benefit from discussing the issue of course construction and management with experienced faculty to better understand the need for release time. Experienced online faculty may be able to help determine appropriate amounts of time for specific activities.

Faculty who received technical support services for software and hardware in the role of online teaching had significantly **higher** total satisfaction scores ($M = 77.59$, $SD = 13.994$) than faculty who did not receive those supports ($M = 68.34$, $SD = 15.290$), $t(248) = 4.384$, $p < .001$, two-tailed. This finding may be a result of basic knowledge of computers and common programs used in day-to-day teaching. For example,

Microsoft programs such as Word and PowerPoint may be used daily by faculty teaching in traditional classroom settings yet may be a challenge to continue when transitioned to online teaching. The fast-paced changes in technological programs and the need to stay updated, faculty need ongoing technical support [9].

Faculty who received technical support services for the LMS had significantly **higher** total satisfaction scores ($M = 78.06$, $SD = 13.955$) than faculty who did not receive those supports ($M = 67.41$, $SD = 14.559$), $t(248) = 5.209$, $p < .001$, two-tailed. Technical support staff is useful to provide the expert assistance needed by faculty to navigate through the unexpected challenges that occur with technology use in online teaching. Administrators should be aware of the technical needs of faculty teaching online.

Faculty who received formal or informal training for software and hardware beyond the LMS in the role of online teaching had significantly **higher** total satisfaction scores ($M = 79.69$, $SD = 14.165$) than faculty who did not receive those supports ($M = 70.76$, $SD = 14.179$), $t(248) = 4.977$, $p < .001$, two-tailed. There are many Learning Management Systems for use to teach online such as Blackboard, Desire2Learn, and Angel. Each LMS will usually require different ways of performing tasks.

Faculty who received formal or informal training in-services related to the LMS for use in online teaching had significantly **higher** total satisfaction scores ($M = 77.37$, $SD = 14.250$) than faculty who did not receive those supports ($M = 69.42$, $SD = 15.020$), $t(248) = 3.794$, $p < .001$, two-tailed. Specific tasks needed to teach in the LMS include uploading documents, uploading video links, set up of discussion boards, enabling chat sessions, creating rubrics, or the online grade book creation. Regardless of the educator’s ability to teach, faculty members may struggle if there is not a familiarity with the technical requirements found in the LMS [7]. Training for the LMS is a necessary service that should be provided to all faculty.

4. Final remarks

Online teaching and learning in higher education have been rapidly expanding in the last decade with universities providing more course offerings and degrees in an online format to meet student demand for flexibility in learning. The advent of COVID-19 virus pandemic set in motion a world-wide phenomenon that required universities and faculty to continue the education process through online learning. Regardless of skill level or desire, many faculty were jettisoned into a new way of teaching. Some may have received significant support services in this new role and others may have received none. The aim for this study was to measure differences in faculty satisfaction teaching

online between faculty who received support to teach online and faculty who did not in the time of COVID-19 virus pandemic. Results show faculty who receive mentoring, administrative support, technical support and training to teach online report higher satisfaction than faculty who do not receive support to teach online. Limitations pertain to the nature of self-reported perceived satisfaction teaching online and the inability in measure or infer causality. Future studies may include a closer look at those faculty who have never taught any online courses prior to COVID-19 to better understand the specific issues pertinent to the quick migration of content online and the need for additional training to strengthen skills.

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