Factors that Influenced Faculty Satisfaction with the Transition to Online Classes during the COVID-19 Pandemic

Abstract: The swift transition to remote learning in response to the COVID-19 pandemic presented substantial challenges for faculty at many universities. This study explores faculty perceptions that influenced their satisfaction with the transition to online classes as a result of the COVID-19 pandemic. Challenges relating to teaching online classes and the supportive environment provided by the institution had the strongest effects. Other important factors were comfort with online teaching and perceived quality of interactions with students. Teaching experience, tenure status, and other demographic variables had no significant effect on satisfaction with transition to online teaching. Application of lessons learned to future emergencies as well as online and blended classes are discussed.

Keywords: faculty satisfaction during ERT; Emergency remote teaching (ERT); online interactions; challenges; institutional support
1. Introduction

In the Spring 2020 semester, universities around the world coordinated massive efforts to transition courses to remote learning in response to the COVID-19 pandemic restrictions. Teaching online is not a new endeavor for university faculty but what was different during the pandemic was the rapid and mandatory transition to remote instruction. The changeover’s sudden and disruptive nature was noticeably difficult for all stakeholders (Garris & Fleck, 2020; Scarborough, 2020). However, not much is known about how faculty evaluated this transition to online classes. This research explores the antecedents that influenced faculty satisfaction with the transition to online classes. This knowledge would improve our understanding of providing effective education in a post-pandemic world and situations in future that may require similar transition to remote learning.

In most instances, faculty in higher education were given mere days to transition their courses from an existing face-to-face format to remote instruction. Although online education is becoming more common and accepted in higher education (Allen & Seaman, 2017; Castro & Tumibay, 2021), a clear distinction exists from formally planned online teaching to what became commonly known as emergency remote teaching (ERT) (Hodges et al., 2020). ERT has been adopted in the past in the wake of natural disasters. However, these were restricted to a region, unlike the COVID-19 pandemic that affected almost the entire world. In many cases, the pedagogical approaches, learning activities, and assessments that are designed for face-to-face courses do not easily translate to a remote format. This is especially true for courses that emphasize hands-on learning through practicums and laboratory work common in the sciences (Sahu, 2019). Faculty had to quickly adapt their courses to ERT by determining if and how to modify course content, how to evaluate student learning through online assessment, and how to effectively deliver instruction in a virtual capacity. The abrupt transition required universities and faculty to rapidly navigate a variety of technology and modality (e.g., synchronous, asynchronous, hybrid) options, and select the most appropriate tools to facilitate online learning (Basilia et al., 2020). They also had to consider students’ acceptance, access, and use of the technologies (Almaiah et al., 2020; Al-Okaily et al., 2020; Rahiem, 2020) while at the same time taking care of their health and that of their families. Faculty had varying levels of experience teaching remotely and knowing pedagogical practices best suited for online learning, and in particular ERT (Bao, 2020; Mishra et al., 2020; Rapanta et al., 2020).

Institutional support and resources available to faculty likely varied by institutional factors such as existing integration of online teaching and technology, degree of information technology support staff, existing resource infrastructure (e.g., internal communities of practice), and financial resources. Irrespective of institutional support, faculty were likely to experience greater stress and increased workload (Christian et al., 2020). This study therefore examines faculty perceptions of their level of interactions with students, student-student interactions, confidence in the technology, institutional support, comfort with online teaching, and challenges they faced teaching online classes in the transition period. Bulk of research about the period during the pandemic focused on student learning. This study examines issues from faculty perspective.

Studies that focus on students’ views indicate that the transition to remote learning was mixed (Garris & Fleck, 2020; Scarborough, 2020). Understanding faculty perceptions are just as
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important, especially considering the continued potential shift to more remote learning courses in higher education. Studies centered on faculty experiences have highlighted issues and challenges faced by faculty as well as the ability to adapt and continue teaching (Elshami et al., 2021). In addition, this research builds on the early findings and offers insights for future. This study therefore answers two main research questions:

- What were faculty perceptions about different facets of online teaching during the COVID-19 transition?
- How did these perceptions affect satisfaction with online teaching during the COVID-19 transition?

2. Background and Hypotheses

There is considerable interest in understanding experiences of students, faculty, and institutions during the COVID-19 pandemic when campuses have been shut, and all classes moved online. Several papers on faculty and student experiences from around the world have been published in the last three years (Chen et al., 2022; Elshami et al., 2021; Garris & Fleck, 2020; Johnson et al., 2020; Scarborough, 2020). These studies revealed that faculty faced many issues such as technology competence, time management, amount of work, and need for adapting their pedagogical methods.

Existing research on the transitionary period from face-to-face to remote instruction showed that many faculties felt ill-prepared to transition to ERT, but none-the-less made significant modifications to their course operations. Johnson et al. (2020) surveyed nearly 900 faculty and administrators across 672 U.S. institutions to assess changes to instructional delivery in the early weeks of the COVID-19 pandemic. Hollander et al. (2020) indicated that faculty were largely uncomfortable transitioning their courses due to a perceived lack of training in online pedagogy and educational technology. One of the most important challenge transitioning to ERT was student accessibility to the learning environment (Rapanta et al., 2020). Joshi et al. (2022) used a sample from a college in India to examine faculty satisfaction with faculty-student interaction, IT related matters, and faculty training during ERT. There is no study to our knowledge that has linked different aspects of the transition period to faculty satisfaction with the transition.

2.1 Faculty-Student and Student-Student Interactions

Interaction in online learning occurs between learners and other learners, learners and course content, and learners and their teacher (Moore, 1989). Sustained faculty-student interaction is necessary for success in an online course. Additionally, interaction with faculty in the online environment creates a sense of belonging and community (Swan, et. al, 2000). Research by Tanis (2020) revealed students appreciate varied communication with their teacher from phone calls to announcements via email. Moreover, when grading assignments, 75% of faculty stated in addition to providing numerical scores, constructive written or audio feedback to students were necessary. Faculty perceive their interaction and communication with students to be critical to student success. Quantity and quality of instructor interactions is closely related to student learning (Swan,
2003; Zhang, 2022). Therefore, we propose the following hypothesis:

**H1:** Perceptions of faculty-student interactions will be positively associated with overall satisfaction with transition to online teaching during COVID-19.

Interactions among students are an indicator of student engagement and contribute to better learning. It has been referred to as the input of physical and psychological energy that a student dedicates to educationally effective activities (Baron & Corbin, 2012). When classes transitioned to online classes, students were faced with a difficult situation on many fronts, some faced financial hardships, uncertainty about the future, a lack of social connectedness and sense of belonging, and access issues that inhibited their well-being and academic performance (Garris & Fleck, 2022). When instructors perceive lack of social connectedness among students, they may likely have concerns about students’ performance and well-being. This in turn would affect their own satisfaction with the transition to online classes. Therefore, we propose the following hypothesis:

**H2:** Quality of perceived student-student interactions by faculty will be positively associated with overall satisfaction with transition to online teaching during COVID-19.

### 2.2 Institutional Support

Capacity for remote teaching depends on information and communication technology infrastructure; available training, support, and funding; institutional and departmental teaching culture; student preparedness for remote learning; and faculty workload and motivation, among other factors (Knysh & Dudziak, 2020; Meyer & Xu, 2007). Online and in-person teaching are two very different experiences, without the right support, the prospect of teaching online can be daunting for even the most experienced instructors. ERT adds another layer of complexity. Institutional support is vital for teachers in higher education when transitioning to online teaching and learning (Joshi et al., 2022; Naylor & Nyanjom, 2020). In this respect, integration of online teaching can be associated with technical and pedagogical support, the school vision about online learning, and strong leadership (Bao, 2020; Rapanta et al., 2020). Clearly, the transition to online because of the COVID-19 pandemic made salient the role of institutional support. In the present study, we examined faculty perceptions of institutional support specifically during the transition to online classes due to the COVID-19 pandemic. Because of the rapid transition to online learning, in many cases, there was very limited time for institutions to provide online materials, technical infrastructures, and the necessary pedagogical support for online teaching and learning (Bao, 2020). We expect that greater support from the institution would be associated with greater levels of faculty satisfaction.

**H3:** Faculty’s perceptions about the supportive environment of the institute will be positively associated with overall satisfaction with transition to online teaching during COVID-19.

### 2.3 Technology Confidence

Technology confidence refers to faculty perceptions of reliability of the technology they used during the COVID-19 transition. Studies have highlighted that the application of technologies
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Factors that influenced faculty satisfaction with the transition to online classes during the COVID-19 pandemic (Martins et al., 2019a). Additionally, the successful integration of technologies can make the learning process more exciting and keep learners motivated (Hanafi et al., 2017). Joshi et al. (2022) found reliable high-speed internet to be a facilitator of satisfaction with ERT. The successful application of technology not only contributes to learners’ satisfaction but also helps individuals to acquire their desired outcomes (Cervero et al., 2020). Transition to online classes required a high reliance on technology. Reliable technology and overall institutional support in the context of technology also gives confidence to faculty that student issues with technology, if any, would be resolved. This is critical when faculty are relying so much on effective delivery of their teaching. When students experience technology issues, faculty may end up spending extra time to resolve them. Therefore, we propose the following hypothesis:

H4: Faculty’s confidence in technology will be positively associated with overall satisfaction with transition to online teaching during COVID-19.

2.4 Faculty’s Challenges Relating to Online Teaching and Remote Work

Adopting or adapting to online learning in response to a sudden pandemic such as COVID-19 is not easy without encountering many problems and challenges. Researchers have reported that academic staff and students faced multiple obstacles in conducting online courses using information communications technology platforms (Bozkurt & Sharma, 2020). These obstacles may include issues such as (a) unfamiliarity with the information technology platforms used, (b) limited internet access, (c) insufficient experience in dealing with online learning platforms in terms of student participation, interactivity, and engagement, (d) lack of a process to assess online learning outcomes, and (e) lack of experience in developing online course content or transforming courses from offline to online modes. Other challenges relevant to university culture are low levels of positive engagement during online classes by students and socially depressed learners.

Unlike onsite teaching, normal online teaching requires extra time and high-quality teaching preparation (Ko & Roseen, 2017). ERT placed even more demands of time (Hodges et al., 2020; Zizka & Probst, 2022). Faculty’s extra work for online teaching includes special curricula development for online course, learning new online LMS tools, and developing technological competencies and self-efficacy in the online platform. Additionally, to develop a substitute for in-person interactions with students, teachers need to include additional learning materials and instruments such as recorded audio, videos, lecture slides, or any other suitable contents. Faculty identified greater access to online materials as a need during the pandemic (Johnson et al., 2020). Studies indicated that teachers felt burdened due to the transition to online teaching and experienced a medium-to-high amount of stress during the school closures (Anderson et al., 2021).

The additional tasks associated with online teaching may blur the line between work and personal time and affects work-life balance. Working from home also brought its own share of domestic work pressures. This additional burden made teacher’s life more challenging in teaching during COVID-19 pandemic. The Johnson et al. (2020) study conducted in the early weeks of the transition also identified guidance for working from home as a faculty need. Based on the above...
discussions and observation from the previous studies related to faculty’s challenges associated with online teaching and remote work, the following two hypotheses were proposed:

H5: Faculty’s perceptions about challenges relating to online teaching will be negatively associated with overall satisfaction with transition to online teaching during COVID-19.

H6: Faculty’s perceptions about challenges relating to remote work will be negatively associated with overall satisfaction with transition to online teaching during COVID-19.

2.5 Faculty's Comfort with Online Teaching

The rapid transition of all teaching provides a unique opportunity to observe the extent to which teachers actually felt prepared for online teaching and learning (Brooks & Grajek, 2020). Faculty confidence is an important component of faculty readiness to teach online. It influences all aspects of teaching online (Martins et al., 2019). Faculty with little or no online teaching experiences are likely to have less confidence in teaching online because they have lower perceptions of their ability to teach online, irrespective of their broader teaching experience. Faculty who are ready to teach online would clearly be more comfortable in teaching online during the transition and are therefore more likely to be satisfied with the transition to online teaching during the pandemic. Therefore, we propose this hypothesis:

H7: Faculty’s comfort with online teaching will be positively associated with overall satisfaction with transition to online teaching during COVID-19.

The hypothesized relationships are shown in Figure 1.

Figure 1

Hypothesized Relationships
3. Methodology

An online questionnaire was developed using Qualtrics. A link to this survey was emailed to all full-time faculty of a Midwest university at the end of Spring 2020. All responses were anonymous and confidential. After five days, a follow-up email reminder was sent out. The survey instrument was developed based on the results of the literature review, which included articles pertaining to faculty experiences and satisfaction with online education as well as student engagement (see Table 1).

The survey was shared with colleagues for review and then piloted with a small sample of the target population. This process allowed for the revision and refinement of survey questions. The final instrument was divided into two parts. Section I consisted of 20 questions on faculty demographics such as age, race, gender, teaching experience, class size, teaching experience, and what respondents liked most and liked least about online education. Section II consisted of items that reflected the focal constructs of faculty-student engagement, student-student interactions, challenges faced by faculty, institutional support, technology interaction, and satisfaction with the transition to online classes. Respondents indicated their level of agreement/disagreement on a seven-point Likert-type scale (1 = “strongly disagree” and 7 = “strongly agree”). Comfort with Online Teaching was assessed with a single item: “What is your comfort level with Online Teaching? (1 = “extremely uncomfortable,” 7 = “extremely comfortable”).

Table 1
Relevant Literature for Survey Items

<table>
<thead>
<tr>
<th>Question themes</th>
<th>References</th>
</tr>
</thead>
<tbody>
<tr>
<td>Insufficient time to learn and prepare for differing modalities and insufficient time to prepare students for the transition to online learning</td>
<td>Malisch et al. (2020); Patricia Aguilera-Hermida (2020)</td>
</tr>
<tr>
<td>Technology</td>
<td>Ferri et al. (2020); Patricia Aguilera-Hermida (2020); Trust &amp; Whalen (2020)</td>
</tr>
<tr>
<td>Student Engagement</td>
<td>Cheng &amp; Chau (2016); Chigeza &amp; Halbert (2014); Duraku &amp; Hoxha (2020); Perets et al. (2020)</td>
</tr>
<tr>
<td>Online Teaching Comfort</td>
<td>Brooks &amp; Grajek (2020); Martins et al. (2019)</td>
</tr>
<tr>
<td>Online teaching challenges</td>
<td>Bojovic´ et al. (2020); Bolumole (2020); Ferri et al. (2020); Houshmandi, Rezaei, Hatami &amp; Molaei (2019)</td>
</tr>
<tr>
<td>Institutional Support</td>
<td>Mseleku (2020)</td>
</tr>
<tr>
<td>Inadequate skills and training, inadequate Internet/ Infrastructure, lack of supporting resources</td>
<td>Sahu (2020)</td>
</tr>
<tr>
<td>Remote work challenges</td>
<td>Bozkurt &amp; Sharma (2020); Hodges et al., (2020); Johnson et al. (2020)</td>
</tr>
<tr>
<td>Satisfaction with the transition</td>
<td>Alqabbani et al. (2021); Dhawan (2020); Hartman et al. (2000); Trust &amp;Whalen (2020)</td>
</tr>
</tbody>
</table>
The raw data from Qualtrics was exported to SPSS version 27 for analysis. Factor analysis was used to examine dimensionality of the questionnaire items. Scales were constructed based on these results and internal reliability was assessed using Cronbach alpha. Hypotheses testing was based on results of a linear regression model with satisfaction with transition to online classes as the dependent variable and the focal constructs as independent variables (see Figure 1).

4. Results

4.1 Sample Characteristics

After removing 19 cases with extensive missing data, an effective sample size of 156 was obtained. Demographic and other sample characteristics are shown in Table 2. About two-thirds of the sample had a PhD. 49% of the sample consisted of tenured faculty, 19% were tenure-track faculty, and the remaining 32% were non-tenure-track (including adjunct faculty). Approximately 60% of the respondents identified as female. About one-third of respondents (33%) in the sample were 55 years or older.

Table 2
Sample Characteristics

<table>
<thead>
<tr>
<th>Variable</th>
<th>n (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td></td>
</tr>
<tr>
<td>Below 34 years</td>
<td>18 (12%)</td>
</tr>
<tr>
<td>35 – 44 years</td>
<td>45 (29%)</td>
</tr>
<tr>
<td>45 – 54 years</td>
<td>40 (26%)</td>
</tr>
<tr>
<td>55 – 64 years</td>
<td>41 (26%)</td>
</tr>
<tr>
<td>65 years and older</td>
<td>12 (7%)</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>62 (40%)</td>
</tr>
<tr>
<td>Female</td>
<td>94 (60%)</td>
</tr>
<tr>
<td>Rank</td>
<td></td>
</tr>
<tr>
<td>Tenured faculty (Associate and Full Professor)</td>
<td>76 (49%)</td>
</tr>
<tr>
<td>Tenure-track Assistant Professor</td>
<td>29 (19%)</td>
</tr>
<tr>
<td>Full-time non tenure-track faculty</td>
<td>32 (20%)</td>
</tr>
<tr>
<td>Part-time faculty</td>
<td>19 (12%)</td>
</tr>
<tr>
<td>Class size</td>
<td></td>
</tr>
<tr>
<td>Largest class</td>
<td>125</td>
</tr>
<tr>
<td>Smallest class</td>
<td>1</td>
</tr>
<tr>
<td>Teaching experience</td>
<td></td>
</tr>
<tr>
<td>16.77 years (S.D. = 10.78)</td>
<td></td>
</tr>
<tr>
<td>Online teaching experience at the time of transition to online classes</td>
<td></td>
</tr>
<tr>
<td>No experience at the time of transition</td>
<td>46 (30%)</td>
</tr>
<tr>
<td>1-2 years online teaching experience</td>
<td>41 (26%)</td>
</tr>
<tr>
<td>More than 5 years of teaching experience</td>
<td>69 (44%)</td>
</tr>
</tbody>
</table>
The mean teaching experience was 16.77 years (S.D. = 10.78). About 30% of the respondents had no online teaching experience when the university transitioned to online classes in Spring 2020. About 26% had one to two years of online teaching. The rest (44%) had more than five years of online teaching experience. The largest class in Spring 2020 semester had 125 students while the smallest class had one student.

Convenience of being able to teach from anywhere was the most frequently cited aspect of online teaching (63%) that respondents liked most. The next aspect that was liked most were not having to come to campus (14%). The least liked aspect of transition to online classes was limited face-to-face interaction (71%), followed by extra time needed for online teaching (17%).

### 4.2 Scale purification and reliability of scales

Exploratory factor analysis was used to examine the different factors of interest to this study. Factor loadings of below 0.45 were eliminated (Hair et al., 1998). Scales were constructed by combining the items. Further refinement was done by eliminating items that resulted in better Cronbach alpha values. Scale items and their characteristics are shown in Table 3.

#### Table 3

*Scale Items and Their Characteristics*

<table>
<thead>
<tr>
<th>Factor &amp; Items</th>
<th>Mean (S.D.)</th>
<th>Cronbach alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Faculty-Student Interactions</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• The level of interactions with students was higher during online learning than when I taught the class face-to-face before Covid-19.</td>
<td>2.55 (1.26)</td>
<td>0.81</td>
</tr>
<tr>
<td>• A higher percentage of students completed the assignments during online learning than when I taught the class face-to-face before Covid-19.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• An online environment makes it easier for me to communicate with my students than when I taught the class face-to-face before Covid-19.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Students communicated with me (their instructor) more often during online learning than when I taught the class in a face to face setting prior to COVID-19.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Student-Student Interactions</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Students found it easier to communicate with their classmates in the online class than when I taught the class face-to-face before Covid-19.</td>
<td>2.62 (1.38)</td>
<td>0.87</td>
</tr>
<tr>
<td>• Students communicated more often with their classmates in the online class than when I taught the class face-to-face before Covid-19.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Institutional Support
- My institution ensured that faculty had all the equipment and technology (computer, camera, hotspot, software, printer, scanner, etc.) needed to be successful with the online transition.
- My institution offered faculty enough assistance and training needed to engage in online education during the quick Covid-19 transition.
- My institution offered faculty and students technical assistance 12 hours or more per day during online teaching during Covid-19.

Technology Confidence
- Students’ technical challenges did not discourage me from teaching online courses in the future.
- The technology I used for my online courses during the pandemic was reliable.

Challenges relating to online classes
- Online classes were not easy to do during Covid-19 compared to face-to-face.
- During the pandemic it took me longer to prepare for my online classes on a weekly basis than when I taught them face-to-face.
- I found it more difficult to motivate students during Covid-19 online teaching than when I taught the class face-to-face.

Challenges relating to remote work
- Working from home with online courses during Covid-19 increased my time at work blurring the line between work and personal life.
- Competing responsibilities at home due to the COVID-19 pandemic (ex. other family members sheltered in place, caretaker duties, teaching kids, health, etc.) were a challenge to my online teaching.

Online Teaching Comfort
- What is your comfort level with online teaching? (assessed on a 7-point scale: 1 = “extremely comfortable” and 7 = “extremely uncomfortable” (Reversed for analysis).

Satisfaction with transition to online instruction
- Overall, I believe that my online instruction during Covid-19 met the same quality standards as when I was teaching the courses face-to-face.
- Overall, I believe that my students’ performance and completion of the course with a good grade was not significantly affected by the transition of my face-to-face classes to online during Covid-19.
- Overall, I am very satisfied with the transition of my courses from face-to-face to online during the Covid-19 pandemic during Spring 2020.

Note. All items except “Online Teaching Comfort” assessed on a 7-point Likert type scale with 1 = “strongly disagree” and 7 = “strongly agree”
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4.3 Data Analysis

Online teaching experience was varied in the sample with a standard deviation of 10.78. To check if comfort with online teaching was related to online teaching experience, a one-way ANOVA with experience in online teaching (three tiers of experience are recognized: entry-level, intermediate with 1-2 years of online teaching experience, and advanced) and comfort with online teaching as the dependent variable confirmed that comfort with online teaching varied directly with online teaching experience ($F_{2,153} = 50.853; p < .001$). Comfort with teaching online increased significantly online teaching experience. Similar one-way ANOVA analysis showed comfort with online teaching did not vary by gender, tenure status, or age.

4.4 Hypotheses Testing

Hypotheses were tested with linear regression using satisfaction with transition during COVID-19 as the dependent variable and the following independent variables: Faculty-Student Interactions, Student-Student Interactions, Institutional Support, Technology Confidence, Challenges relating to online classes, Challenges relating to working from home, and Comfort with Online Teaching.

The regression model was significant ($F_{7,147} = 26.34; p < .001$) with a r-squared value of 0.50. The standardized coefficient (Beta) values, corresponding T-values and significance are shown in Table 4.

Table 4
Results of Linear Regression

<table>
<thead>
<tr>
<th>Standardized Coefficients Beta</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Constant)</td>
<td>1.230</td>
<td>.221</td>
</tr>
<tr>
<td>Faculty-Student Interactions</td>
<td>.233</td>
<td>2.965</td>
</tr>
<tr>
<td>Student-Student Interactions</td>
<td>.057</td>
<td>.805</td>
</tr>
<tr>
<td>Institutional Support</td>
<td>.218</td>
<td>3.282</td>
</tr>
<tr>
<td>Technology Confidence</td>
<td>.195</td>
<td>2.525</td>
</tr>
<tr>
<td>Challenges relating to online classes</td>
<td>-.241</td>
<td>-3.109</td>
</tr>
<tr>
<td>Challenges relating to remote work</td>
<td>.104</td>
<td>1.542</td>
</tr>
<tr>
<td>Comfort with Online Teaching</td>
<td>.162</td>
<td>2.220</td>
</tr>
</tbody>
</table>

Note. Dependent variable: satisfaction with transition to online classes due to COVID-9 pandemic

Faculty-Student Interactions had a significant effect on satisfaction with transition to online classes during the COVID-19 pandemic ($\beta = .233, t = 2.965, p < .01$). This supports H1. In other words, the more favorably faculty perceived their interactions with students, the more satisfied they were with transition to online classes. Interestingly, faculty perceptions about quality of student-to-student interactions were not significantly associated with satisfaction with transition to online classes ($p > .05$). Therefore, there was no support for H2. These results will be discussed in the next section.
The supportive environment provided by the institution clearly mattered. There was significant positive relationship between institutional support and satisfaction with transition to online classes (β = .218, t = 3.282, p < .01). Therefore, H3 was supported. The confidence faculty had with technology also had a significant positive effect of satisfaction with transition (β = .195, t = 2.525, p < .05). Therefore, H4 was supported.

Faculty’s perceptions of challenges they faced in making online classes effective had a significant negative effect on satisfaction with transition to online classes (β = -.241, t = -3.109, p < .01). However, challenges due to working from home did not have a significant effect (p > .05). Therefore, H5 was supported and H6 was not. These are interesting because most likely faculty traded-off the positives of still being able to teach under extenuating circumstances and not get affected by the challenges of working from home.

Comfort levels with online teaching had significant positive effects of satisfaction with the transition to online classes (β = .162, t = 2.220, p < .05). Therefore, H7 was supported.

From the results summarized in Table 4, challenges relating to teaching online had the most (negative) influence on satisfaction with transition to online classes. Institutional support, perception of interactions with students, technology confidence, and comfort with online teaching positively influenced satisfaction with transition to online classes.

**Table 5**

*Summary of Test of Hypotheses*

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>H1 Perceptions of faculty-student interactions will be positively associated with overall satisfaction with transition to online teaching during COVID-19.</td>
<td>Supported</td>
</tr>
<tr>
<td>H2 Quality of perceived student-student interactions will be positively associated with overall satisfaction with transition to online teaching during COVID-19.</td>
<td>Not Supported</td>
</tr>
<tr>
<td>H3 Faculty’s perceptions about the supportive environment of the institute will be positively associated with overall satisfaction with transition to online teaching during COVID-19.</td>
<td>Supported</td>
</tr>
<tr>
<td>H4 Faculty’s perceptions about confidence in technology will be positively associated with overall satisfaction with transition to online teaching during COVID-19.</td>
<td>Supported</td>
</tr>
<tr>
<td>H5 Faculty’s perceptions about challenges relating to online teaching will be negatively associated with overall satisfaction with transition to online teaching during COVID-19.</td>
<td>Supported</td>
</tr>
<tr>
<td>H6 Faculty’s perceptions about challenges relating to remote work will be negatively associated with overall satisfaction with transition to online teaching during COVID-19.</td>
<td>Not Supported</td>
</tr>
<tr>
<td>H7 Faculty’s comfort with online teaching will be positively associated with overall satisfaction with transition to online teaching during COVID-19.</td>
<td>Supported</td>
</tr>
</tbody>
</table>
Factors that influenced faculty satisfaction with the transition to online classes during the COVID-19 pandemic

5. Discussion

This study contributes to the growing literature on examining issues experienced by faculty and students during the transition to online classes during the COVID-19 pandemic. Overall, faculty satisfaction was low (see Table 3). This is consistent with much of the existing literature in this topic; an unprecedented period had significant impact on students, faculty, and administrators.

A significant contributor to the lower satisfaction scores were the challenges associated with teaching online, especially exacerbated due to the nature of transition in a short period. Challenges associated with online teaching are well documented (Cavanaugh, 2006; Elshami, et al., 2021; Hartman, et al., 2000; Shea, 2007; Zizka & Probst, 2022). These include unfamiliarity with technology, ineffective adaptation of teaching methods to online classes, accommodating student needs and challenges, extra time taken to prepare for classes, and limited interaction with students and colleagues. These challenges also took a toll on their mental and physical health (Chen et al., 2022).

This study showed that faculty experienced challenges in the work-from-home (WFH) environment. This was of smaller order than the challenges relating to online teaching (see Table 3). However, challenges associated with WFH did not have a significant effect on satisfaction with transition to online teaching. The unusual circumstances brought about by the COVID-19 pandemic may have contributed to the lack of a significant negative impact on their satisfaction. This study did not explicitly ask for benefits of online teaching during the pandemic. However, convenience of being able to teach from anywhere was the most frequently liked aspect of online teaching (63%). Transition to online teaching was the only alternative and faculty may have been grateful for being able to continue their semester. This also underscores potential factors to the adjustment to WFH. According to a study by Chen et. al (2022), when asked about course delivery preference after the pandemic and when classes could safely return to in person, 40% of faculty chose hybrid (both in person and online), 25% face-to face, and 13% chose to teach at home asynchronously. Their study found that 9% of faculty would prefer to teach live synchronously on campus, 8% at home in a synchronous setting, and less than 5% would prefer to teach on campus asynchronously. These findings support the idea that despite barriers, faculty may be favorably inclined to working from home.

A logical solution to addressing these challenges would be to enhance institutional support to faculty. Findings of this study indicate that faculty satisfaction was positively influenced by the perceptions of support from the institution in terms of having adequate technology, training, and availability of technical assistance. Confidence in the technology also had a positive impact on satisfaction. Reliable technology and the peace of mind that student problems with technology would be resolved would influence satisfaction with online classes. Universities should plan to institute systematic organization-wide professional development and invest in relevant technologies and support staff (Johnson et al., 2020). Faculty also indicated a desire for better support for students in remote settings and access to online materials.

Faculty comfortable with online teaching were more satisfied with the transition to online classes. It is not surprising that comfort level with online teaching was positively associated
with experience in online teaching. Interestingly, comfort with online teaching did not vary with age, tenure status, gender, or teaching experience. Comfort with online teaching is an important aspect of readiness to teach online classes (Martins et al., 2019). Student perceptions of student perceptions of instructor confidence in online teaching affect their evaluations of the online class (Garris & Fleck, 2020). A silver lining of the transition to online classes is that most faculty gained experience in teaching online.

Faculty-student interactions are critical for effective learning and faculty satisfaction. There was a positive relationship between perceptions of faculty-student interactions and satisfaction. However, results of this study indicate perceptions of quality of faculty-student interactions were low (see Table 2). This is consistent with other research findings (Garris & Fleck; 2020; Joshi et al., 2022). Lack of effective faculty-student interaction has been cited as a weakness by experts that adversely affects student learning (Protopsaltis & Baum, 2019). Several factors may have affected perceptions of interaction with students. Many classes during the transition were conducted synchronously, maintaining the class schedules from face-to-face instruction. Students and faculty have reported exhaustion and isolation from being online for extended periods of time (Garris & Fleck, 2020; Peper & Yang, 2021). Also, when students stay offcamera, faculty have limited or no cues and feedback on their teaching. Active participation through use of appropriate tools like break-out rooms, activity switching, and even some periods of asynchronous lectures would likely alleviate this problem of lack of interaction. Improvements in technology and teaching methods that allow for high levels of interactivity in both synchronous and asynchronous classes should be encouraged to create impactful online pedagogy.

Faculty perceptions of student-student interactions did not have a significant effect on their satisfaction with the transition. The mean score for perceptions of student-student interaction was low (see Table 3). Faculty may have grappled with other issues with the transition that may have diminished the influence of this factor on their satisfaction. Based on personal observations, many students stayed away from the camera. This also hindered the ability to observe student-student interactions. Findings by Sederevičiūtė-Pačiauskiienė & Asakavičiūtė (2022) suggested that although students recognized the value of web cameras in their online learning (e.g., providing a sense of community, building interpersonal relationships and acting as a tool for self-discipline), there were still concerns including a students' background, psychological barriers, and technical issues that may cause students to not use their camera. Moreover, some online students feel more at ease when their webcams are turned off (Kozar, 2016 & Bedenlier, et. al, 2021). Another finding from Castelli and Sarvary (2021) revealed that students may be apprehensive about others seeing their surroundings and background environment was a reason not use their cameras in an online course. From issues of privacy to equity, students have varying reasons for not turning on their web cameras. In the current research, faculty may not have had the opportunity to fully assess student interactions because of issues such as missing out on the facial expressions and gestures that are common in an in-person course or when students have their webcams on in a virtual setting. Other areas that could have influenced faculty satisfaction with the online transition include their own teaching approaches, the instructional content, and institutional support. In their study of teachers’ perceptions of online learning success Barbera and Fernández-Navarro (2016) found that factors including instructor interaction, instruction, learning content, social presence, and course design were crucial factors toward online success. Similarly, Bolliger and Wasilik (2009) found that students, instructors, and institutions were three key characteristics
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associated with faculty satisfaction with online learning. Although more research is needed in this 
area, faculty in the current study may have focused more on the success of their own teaching, 
content and institutional support as they consider satisfaction with the COVID 19 transition to 
online learning.

5.1 Implications

The lessons learned from ERT would have a positive impact on future of online teaching. 
From online teaching that was mostly asynchronous, faculty and students adapted to ERT that 
included different degrees of synchronous online instruction. Universities and colleges now have 
most of their faculties exposed to online teaching and accompanying technologies and platforms. 
New tools and platforms that facilitated synchronous interactions with students (e.g., Zoom) 
were quickly adopted with limited training. While these tools may not have been used to the full 
potential, the potential efficacy of these tools is acknowledged. Institutions should capitalize 
on this experience and invest in professional development and relevant technology to enhance 
teaching effectiveness in all modes of instruction. There is evidence to suggest that students desire 
and like the flexibility afforded by blended and purely online formats (Garris & Fleck, 2020).

Effective online teaching requires considerable preparation. Technology support for 
both faculty and students should be enhanced. Research suggests the role of the institution in 
providing appropriate support for online faculty is a strong factor in faculty perceptions of work 
satisfaction. However, Zizka and Probst (2022) found that although training and support for 
online faculty was offered by the institution during ERT, trainings may have added to the strain 
on faculty time and workload. Additionally, according to Johnson et. al, (2022) although faculty 
may perceive their institutions as providing technical support for their online courses, they felt 
support was lacking in terms of adequate compensation and any reward for teaching online. 
Colleges should prepare for contingencies by having all faculty maintain a specific level of 
capability to teach in online environments. This can be made possible through regular structured 
faculty professional development initiatives. Participation in such programs could be included as 
a mandatory requirement in the annual faculty performance plans and end of year evaluations. 
Incentives should also be explored to encourage faculty to develop competencies in innovative 
technologies for effective online and blended formats. This will also enhance faculty confidence 
in new technologies, increase comfort with online teaching, and minimize challenges associated 
with online teaching. A holistic approach to faculty professional development is needed (Johnson 
et al., 2022).

The results of this study highlight the importance of quality of faculty-student interactions. 
Managing the challenges of facilitating and maintaining high quality faculty-student interactions 
should be an important area of focus for professional development. Much of online instruction 
was in asynchronous mode. Many colleges switched to synchronous mode during ERT to 
maintain the prevailing faculty and student schedules. The ensuing “zoom fatigue” is likely to 
be a factor for poor faculty-student interactions (Garris & Fleck, 2020). Course schedules during 
a future ERT should have a mix of synchronous and asynchronous learning class schedules. 
Adequate support structures should also be in place to support students.

Student engagement in the form of interactions among students is an important ingredient of
effective learning (Bernard et al., 2009). Ways to improve student-student interactions should be explored further. Students should be provided with access to tools on LMS platforms that foster such interactions. Instructors have a crucial role in facilitating such interactions by leveraging the tools available on LMS platforms and social media. With early distance education, fostering good student-student interaction had been difficult. This is not case with current technologies. Research shows that structured interactions with educative value have positive effects on student learning. Such interactions include cooperative learning activities, team projects, and discussion forums (Bernard et al., 2009).

5.2 Limitations

This paper examined the effect of several factors that affected faculty satisfaction with teaching during the transition to online teaching during the COVID-19 pandemic. It did not examine the role of emotional well-being of faculty as well as faculty perceptions of students’ well-being in their satisfaction with online teaching. The specific circumstances surrounding ERT warrants examination of emotional of well-being of faculty and students. Comfort with online teaching was an important factor in shaping faculty experiences with the transition to online learning during the COVID-19 pandemic. A more comprehensive understanding of this construct and its antecedents is warranted. This construct is an attitudinal construct that goes beyond experience in teaching online classes. The number of courses and new preparations should also be considered while examining this construct. Comfort with online teaching would also be related to the confidence faculty have with the technology platforms adopted at a university. Finally, the sample for this study comprised full-time faculty from a Midwest university. A more diverse sample is needed to validate these results. Future research should also address level of adaptation by faculty during ERT. Faculty adapted many aspects of their teaching to accommodate student needs and constraints imposed by the circumstances. These would have contributed to challenges and extra time and effort to prepare for classes.

6. Conclusion

The pivot to ERT at colleges and universities required moving existing in-person courses into a virtual environment. Faculty members and students no longer had a choice between online and face-to-face classes. Many students and faculty were not familiar with learning in the virtual space, nor were they familiar with the available technology, software, or services and support for online students. The main objective of this paper was to examine how faculty perceptions of different aspects of transition from face-to-face to online classes shaped their satisfaction with the transition. This study provides a faculty perspective on a unique period of time in higher education. It is important to avoid the temptation to equate ERT with online learning. However, the cumulative knowledge on online learning should form the framework for innovative solutions by institutions to deal with such situations in future (Dhawan, 2020).

Pedagogical approaches that foster better faculty-student interactions and student-student perceptions should be explored. Lack of interaction with students was the most disliked aspect of teaching online during the pandemic. Universities should continue to invest in technology infrastructure as well as faculty and student training for online classes and blended approaches.
Universities should strengthen institutional support and address challenges that faculty experienced. The challenge to educational institutions is not only finding new technology and using it but also reimagining its use for education, thereby helping students and academic staff who are seeking guidance for digital literacy (Dhawan, 2020).

References


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