Impact of instructors’ online teaching readiness on satisfaction in the emergency online teaching context

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Abstract
This study aims at investigating the predictive effects of online teaching readiness factors on instructors’ satisfaction and confidence in the emergency online teaching context. The target population is instructors who experienced online teaching during the COVID-19 pandemic, particularly in South Korea. Two hundred and thirteen instructors from 15 universities in South Korea responded to a survey asking about online teaching readiness (technological, pedagogical, online communication, time and environment management, and institutional support readiness), satisfaction, and confidence. Hierarchical regression analysis showed that pedagogical and online communication readiness have significant positive effects on both satisfaction and confidence, while showing lower means than other online teaching readiness sub-categories. This research concludes that specific strategies and skills for pedagogical and online communication readiness have to be stressed in professional development programs for online teaching.

Keywords Emergency online teaching · Online teaching satisfaction · Online teaching confidence · Online teaching readiness · Hierarchical regression

1 Introduction

While recently the number of students in higher education enrolled in online courses has steadily increased (Seaman et al., 2018), online learning is unevenly distributed across institutions and disciplines. Instructors also seem not to be homogenous in
their experience with and preparedness for online teaching (Bolliger & Halupa, 2021; Lederman, 2019; Scherer et al., 2021).

However, the outbreak of COVID-19 forced all higher education instructors across the world to shift their courses to an online environment regardless of institution or academic discipline. Online teaching can be stressful and time-consuming for instructors who are not familiar with it (Ko & Rossen, 2017). It has been widely reported that instructors experienced various challenges regarding technology and instructional design during this period of emergency online teaching (EOT; Adedoyin & Soykan, 2020; Johnson et al., 2020; Turnbull et al., 2021). Similar problems were observed in South Korea. All universities in South Korea were required to switch from face-to-face courses to an online format without systematic preparation and thus experienced considerable disturbance (Lee et al., 2021).

Currently, many researchers agree that COVID-19 will not disappear in the foreseeable future, nor will it be the last pandemic we face (Ravid et al., 2021). Furthermore, Leaderman (2021) revealed that 59% of higher education institutions enrolled in the National Council for State Authorization Reciprocity Agreements (roughly 2,200 colleges and universities in the United States) plan to continue online education offerings even after the pandemic. The instructor is key to successful online education (Keramati et al., 2011). To help instructors be well-prepared for future online teaching and possible EOT crises, it is necessary to investigate online teaching readiness and its influence on successful online teaching.

However, most studies on online readiness have focused on students (Hung, 2010; Wladis & Samuels, 2016) rather than instructors. Furthermore, to date, little research has explored the extent to which online teaching readiness factors contribute to successful EOT experiences. To fill this gap, this study aims at exploring instructor online teaching readiness factors and their impact on instructor satisfaction and confidence, focusing on a South Korean context. Specifically, it pursues the following research questions:

1. How ready were instructors to teach online during the COVID-19 EOT period?
2. To what extent do online teaching readiness factors influence instructor satisfaction with online teaching?
3. To what extent do online teaching readiness factors influence instructor confidence with online teaching?

2 Literature Review

2.1 Instructor satisfaction and confidence with online teaching

Instructor satisfaction and confidence with online teaching are essential factors in whether they will adopt it in the future. First, online teaching satisfaction is regarded as one of the five essential pillars for supporting successful online learning (Online Learning Consortium, no date). Moore (2011) suggested that it is an indicator of the quality of online education, along with learning effectiveness, access for all learners, cost-efficiency, and student satisfaction. In addition, researchers have suggested
that instructors’ confidence with online teaching is a key factor in successful online instruction. Rutherford et al. (2021) claimed that instructors’ online teaching confidence (i.e., self-efficacy) is an important determinant of successful online teaching. Orona et al. (2020) also indicated that instructors with higher levels of confidence and self-efficacy are more likely to use various online interaction-oriented practices more frequently. Furthermore, Zhen et al. (2008) revealed that instructor self-efficacy is the most important factor in an instructor’s decision to adopt online teaching.

Previous researchers have suggested that online teaching satisfaction and confidence can vary according to online teaching readiness. Bolliger and Wasilik (2009) noted that online teaching readiness significantly influences satisfaction with online teaching. More recently, Bolliger and Halupa (2021) confirmed that faculty members who were well-prepared for online teaching were likely to have higher confidence during the COVID-19 EOT period. However, while researchers agree that online teaching readiness has a significant impact on instructor satisfaction and confidence – essential indicators of online learning success – most research has focused on the influence of learner readiness on successful online learning.

2.2 Online teaching readiness

Online teaching readiness has been conceptualized differently by previous researchers. Martin et al. (2019) defined it as faculty members’ perceptions of their ability to teach online and suggested four sub-categories: course design, course communication, time management, and technical skills. Gay (2016) suggested that three factors are important to being prepared for online teaching: technical, lifestyle, and pedagogical readiness.

However, some researchers argue that contextual factors (e.g., external support from institutions) should be included within the definition of online teaching readiness (Howard et al., 2021; Scherer et al., 2021). In the same vein, Meloncon (2007) included institutional preparedness in a framework determining instructor preparedness for online teaching, which also included individual aspects: personal, pedagogical, managerial, and technological factors.

While various researchers have suggested sub-factors of online teaching readiness, they use the terms differently or use different terms for similar constructs. For example, while Martin et al. (2019) used the term “course design readiness” to refer to instructors’ pedagogical competency and readiness, Meloncon (2007) used “pedagogical readiness” to indicate the similar concept. Next, while Meloncon (2007) included managerial readiness as a sub-factor of instructor online teaching preparedness, some items that Meloncon used to indicate managerial readiness were similar to those categorized as pedagogical or online communication readiness by Martin et al. (2019). Based on the previous research, this study defines online teaching readiness as instructors’ individual and contextual preparedness for online teaching and aims to include all of the key factors mentioned in previous studies. Importantly, we focus on the contents (or properties) terms represent rather than the terms themselves. As a result, the current study focuses on five aspects: technological, pedagogical, online communication, time and environment management, and institutional support readiness.
2.2.1 Technological readiness

Technological readiness refers to instructors’ knowledge and skills related to computer systems, educational software, and learning platforms (Bolliger & Halupa, 2021). Previous researchers have found that instructors with greater technological readiness are more willing to adopt online teaching (Fathema et al., 2015) and more satisfied with it (Blundell et al., 2020). Correspondingly, teachers with higher technological competence showed more satisfaction with online teaching during the COVID-19 EOT period (Masry-Herzalah & Dor-Haim, 2022).

On the contrary, some researchers have shown that technological readiness may not be as critical as generally supposed. For example, Bigatel et al. (2012) found that instructor and staff members rate the importance of online teaching competencies lower than other competencies (active learning, administration/leadership, active teaching/responsiveness, multimedia technology, and classroom decorum), rating it sixth out of seven. Bolliger and Halupa (2021) showed that skills with technological tools may not be a critical criterion to distinguish experienced and novice online instructors. Specifically, they did not find any significant difference in technical competence based on online teaching experience, while instructors with prior online teaching experience showed higher mean scores than inexperienced faculty members on readiness for course design, course communication, and time management.

Taken together, previous studies show somewhat inconsistent results about the extent of the importance of technological readiness for successful online teaching, which underlines the need for further studies on this subject.

2.2.2 Pedagogical readiness

Previous researchers agree that instructors’ ability to design effective curricula and activities is crucial for successful online courses (Gay, 2016; Martin et al. 2019). Bawane and Spector (2009) revealed that the pedagogical role received the highest priority of eight online instructor roles (professional, pedagogical, social, administrator, evaluator, technologist, advisor, and researcher) by a group of experts. In addition, Downing and Dymant (2013) used a questionnaire to identify that pedagogical readiness has the greatest influence on faculty satisfaction. Specifically, 37% of participants reported they are reluctant to teach online because they lack pedagogical knowledge, while only 26% were concerned that they lack technical skills. Furthermore, Mitchell et al. (2015) described that one of the main reasons for faculty resistance to online teaching is that instructors fear that face-to-face instructional strategies may fail online. The results of previous research indicate that instructor pedagogical readiness is significant for a satisfactory and successful online teaching experience.

2.2.3 Online communication readiness

In the online learning environment, instructors depend considerably on text-based asynchronous communication (Jung-Ivannikova, 2016). Even in synchronous online courses, asynchronous communication is widely used for announcements, discus-
sions, assignment feedback, and Q & A sessions. Text-based communication differs from face-to-face communication in its lack of immediacy, nonverbal expressions, and social cues (Jung-Ivannikova, 2016).

Because of these distinguishing features, having excellent face-to-face communication skills does not mean that one can communicate effectively in an online environment. Some researchers have highlighted that online communication readiness is essential for successful and satisfactory online teaching. Varvel (2007) indicated that competent online instructors are required to communicate with students through writing. Shea et al. (2005) demonstrated that interaction factors are significantly associated with faculty satisfaction and their likelihood to continue online teaching. More recently, Badiozaman (2021) explored online teaching readiness in the context of COVID-19 by interviewing 22 higher education instructors. In the research, instructors responded that online communication competence is crucial to maintain instructor presence and high-quality relationships with students. The results show that online communication competence can be an important readiness factor for successful online teaching.

### 2.2.4 Time and environment management readiness

The flexibility of time and space for teaching is the one of the greatest advantages of online teaching. However, it requires instructors to manage time and the environment effectively and efficiently by themselves. Gay (2016) emphasized that whether instructors have a suitable space and uninterrupted time is a significant online teaching readiness factor. Stickney et al. (2019) affirmed that instructors are satisfied with online teaching, as it provides flexibility in time management.

In particular, online teaching may pressure instructors to spend a significant amount of time preparing. Some instructors have raised the issue of heavy workload. Mandernach et al. (2013) revealed that online instructors work over 40 hours a week, more than face-to-face teachers. The problem remained the same or deteriorated during EOT. Researchers reported that instructors spent more time preparing for lessons than usual during the EOT situation (Metzler et al., 2021). In an interview, Badiozaman (2021) found that instructors who experienced EOT felt burnt out and exhausted because of the increased workload. In this research, some instructors complained that the online environment keeps them connected with students’ messages or work all the time.

Furthermore, in an EOT situation, which prevents instructors from teaching in well-prepared physical classrooms, online teaching experiences may differ depending on whether instructors have adequate and comfortable spaces in which to teach. Indeed, some researchers reported that instructors had challenges with finding or preparing an appropriate space when they had to teach at home during lockdowns (Damşa et al., 2021; Keener et al., 2021). These findings from previous studies imply that instructors’ abilities to manage time and the environment are necessary for the success of online teaching.
2.2.5 Institutional support readiness

There are various forms of institutional support for online teaching, such as professional development programs or trainings, compensation policies, technical support, digital tools and networks, and institutions’ visions and leadership (Howard et al., 2021; Pedro & Kumar, 2020).

Previous researchers have suggested that institutional support makes a considerable contribution to the success of online teaching. Bolliger and Wasilik (2009) indicated that institution-related factors can influence satisfaction with online teaching. In Orr et al.’s (2009) study, instructors reported that departmental leadership and efforts to support faculty members for online teaching are important factors in their satisfaction. Stickney et al. (2019) reported that instructors have higher levels of satisfaction when organizational policies uphold their efforts for online teaching.

In the context of the COVID-19 EOT situation, Lee and Jung (2021) confirmed that instructional change, particularly technology use, is strongly associated with the fidelity of institutional support. This implies that instructors adopt and employ technology more easily when institutions provide relevant support, even in a mandated online teaching situation. To sum up, previous research shows that institutional support needs to be considered in online teaching readiness—especially during an EOT situation.

3 Method

3.1 Context and participants

The participants of this research were instructors who experienced online teaching during the COVID-19 pandemic. The data were collected from instructors in higher education in South Korea, which transferred to online teaching relatively early. An online survey was distributed to 15 higher education institutions in South Korea to examine instructors’ online teaching readiness, satisfaction, and confidence. A total of 213 faculty members responded to the survey voluntarily. Notably, the gender ratio of the participants of this research is disproportionate. While the distribution of the sample (male: 83.1%, female: 16.9%) corresponds to the gender ratio of faculty members in South Korea (male: 82.8%, female: 17.2%, The Korea Bizwire, 2020), this study controlled for the gender factor to more robustly examine the influence of teaching readiness factors on instructor satisfaction and confidence with online teaching. The demographic information of the participants is shown in Table 1.

3.2 Measurement instrument

The instrument items were adapted from previous research or created for this study. First, online teaching readiness items were separated into five categories—technological, pedagogical, online communication, time and environment management, and institutional support—with reference to the literature (Gay, 2016; Hung, 2010, 2016; Martin et al., 2019; see Table 2)
A pretest was conducted by two education experts to confirm adequacy, the sequence of items, and the understandability of expressions. A brief pilot test was conducted with 30 instructors to check the validity and reliability of the survey items. The pilot test participants were not included in the main research. All items related to online teaching readiness, instructor satisfaction, and confidence had an acceptable level of internal consistency (α > 0.70). As a result of the pilot test, two items were deleted from time and environment and pedagogical readiness because of duplicate loadings. A total of 19 online teaching readiness items were used.

### 3.3 Data analysis

Exploratory factor analysis (EFA) was conducted to examine validity and reliability. First, the Kaiser-Meyer-Olkin (KMO) test and Bartlett’s test of sphericity indicated that the current data were suitable for factor analysis (KMO = .889, Bartlett’s Test of Sphericity = 2336.925, p < 0.001). Five factors accounting for 73.87% of the total variance were extracted from the current data set with cut-off loadings of .40. The Cronbach’s alpha scores for all items in each readiness scale ranged from .769 to .915. The online teaching satisfaction items had a Cronbach’s alpha of .943.

Descriptive statistics (mean and standard deviation) were determined for each aspect of online teaching readiness and satisfaction. Correlation analysis and hierarchical regression analysis were performed to investigate the relations and predictive effects between the sub-categories of online teaching readiness and instructor satisfaction and confidence. Hierarchical regression analysis is widely used to determine the effects of the predictive variables on the outcome variable by controlling for other variables. Furthermore, it is typically performed when the predictive variables are correlated with each other. This research used hierarchical regression analysis to examine the effects of online teaching readiness variables on instructor teaching

| Categories                  | Number of Participants | N (%)  |
|-----------------------------|------------------------|--------|
| Gender                      | Male                   | 177 (83.1%) |
|                             | Female                 | 36 (16.9%)  |
| Age                         | 20s                    | 1 (0.5%)  |
|                             | 30s                    | 35 (16.4%)  |
|                             | 40s                    | 80 (37.6%)  |
|                             | 50s                    | 62 (29.1%)  |
|                             | 60s                    | 35 (16.4%)  |
| Teaching experience         | Less than 3 years      | 29 (13.6%)  |
|                             | 3–5 years              | 24 (11.3%)  |
|                             | 5–10 years             | 30 (14.1%)  |
|                             | 10–15 years            | 34 (16.0%)  |
|                             | More than 15 years     | 96 (45.1%)  |
| Previous online teaching experience | No experience | 121 (56.8%)  |
|                             | 1                      | 19 (8.9%)  |
|                             | 2                      | 11 (5.2%)  |
|                             | 3                      | 3 (1.4%)  |
|                             | More than 4            | 59 (27.7%)  |
| Total                       |                        | 213 (100%)  |

Table 1 Demographic information of participants
satisfaction and confidence after controlling for demographic variables (e.g., age, gender, teaching experience, previous online teaching experience). The significant correlations between the predictive variables in this study were another reason why hierarchical regression analysis was chosen (Pedhazur, 1997). Demographic variables (gender, age, teaching experience, previous online teaching experience) were added in the first stage to control the effect of participants’ background. Online teaching readiness variables were added in the second stage. The SPSS 26 package was used for data analysis.
4 Result

4.1 Online teaching readiness, satisfaction, and confidence

To address the first research question, descriptive statistics (mean and standard deviation) were measured. For online teaching readiness, time and environment management readiness was rated highest ($M=4.11$). Online communication ($M=3.78$) and pedagogical readiness ($M=3.68$) showed lower means than the other sub-categories. This research also examined mean and standard deviation for all items of online teaching readiness (see Table 3).

Finally, instructors’ satisfaction and confidence with online teaching were measured. Overall, instructors showed low satisfaction with online teaching during the EOT period ($M=2.87$). However, their confidence level was not very low ($M=83$).

4.2 The influence of online teaching readiness on instructor satisfaction and confidence

For RQ2, correlation analysis was conducted to examine the relationships among the sub-categories of online teaching readiness, satisfaction, and confidence (see Table 4). The results showed that each online teaching readiness sub-category is significantly correlated with instructor satisfaction and confidence with online teaching. Specifically, online communication readiness showed the highest correlation with instructor satisfaction ($r=0.446$, $p<.01$) and confidence ($r=0.492$, $p<.01$).

Next, hierarchical multiple regression analysis was conducted to determine the predictive effects of the online teaching readiness sub-categories on instructor satisfaction with online teaching. Model 1, which included only demographic factors, did not contribute significantly to instructor satisfaction ($R^2=0.032$, $F=1.695$, $p=.153$). Model 2, which included online teaching readiness factors as independent variables, was statistically significant. The results of the regression indicated that 27.4% of variance in instructor satisfaction was explained by online teaching readiness factors ($R^2=0.274$, $F=8.333$, $p<.01$). Online communication readiness ($\beta=0.297$, $p<.01$) and pedagogical readiness ($\beta=0.242$, $p<.01$) made a significant positive contribution. Institutional support readiness was also associated with instructor satisfaction ($\beta=0.127$, $p<.05$).

Finally, another hierarchical multiple regression analysis was performed to examine the predictive effects of the online teaching readiness sub-categories on instructor confidence. Model 1, which added only demographic factors, did not show any significant effects ($R^2=0.015$, $F=0.758$, $p=.554$). Model 2 showed the statistically significant influence of pedagogical ($\beta=0.246$, $p<.01$) and online communication readiness ($\beta=0.266$, $p<.01$). The model explained 30.7% of the variance in instructor confidence with online teaching ($R^2=0.307$, $F=9.431$, $p<.01$).
Table 3  Online teaching readiness level (n=213)

| Online teaching readiness                                      | M   | SD  |
|----------------------------------------------------------------|-----|-----|
| **(Technological readiness)**                                  |     |     |
| I feel confident in performing the basic functions of          | 4.06| 0.82|
| Microsoft Office programs (MS Word, MS Excel, MS PowerPoint)  |     |     |
| for online teaching.                                          |     |     |
| I feel confident in my knowledge and skills of how to use      | 3.60| 0.92|
| various software which are used for online teaching.           |     |     |
| I feel confident in using the Internet to find or gather       | 3.97| 0.85|
| information for online teaching.                               |     |     |
| I'm confident navigating within the course in the learning     | 3.66| 0.93|
| management system.                                            |     |     |
| I know how to access the online help desk or relevant         | 3.70| 0.97|
| materials when I have a technological issue while preparing   |     |     |
| or performing online teaching.                                 |     |     |
| Total                                                         | 3.80| 0.77|
| **(Pedagogical readiness)**                                   |     |     |
| I can plan various learning activities to help students       | 3.63| 0.82|
| achieve learning objectives in an online learning             |     |     |
| environment.                                                  |     |     |
| I can choose appropriate instructional strategies and methods  | 3.58| 0.79|
| for providing meaningful learning experiences in online        |     |     |
| learning environment.                                         |     |     |
| I can write learning objectives clearly reflecting on learner  | 3.79| 0.79|
| needs and characteristics for online learning.                |     |     |
| I can organize learning activities and resources into modules. | 3.68| 0.88|
| Total                                                         | 3.68| 0.69|
| **(Online communication readiness)**                          |     |     |
| I feel confident in using various digital tools (e.g., emails, | 3.98| 0.92|
| discussion board) to effectively communicate with students    |     |     |
| I feel confident in expressing myself (emotions and humor)    | 3.39| 0.95|
| to students through text.                                     |     |     |
| I feel confident in communicating with students effectively   | 3.97| 0.82|
| through text-based communication.                             |     |     |
| I can make more comfortable and respectful communication       | 3.72| 0.77|
| environments by emphasizing students to communicate with       |     |     |
| netiquette.                                                   |     |     |
| Total                                                         | 3.78| 0.686|
| **(Time and environment management readiness)**                |     |     |
| I have a private place in my home or at work that I can use   | 4.12| 0.97|
| for extended periods.                                         |     |     |
| I have adequate time that will be uninterrupted in which I    | 4.06| 0.96|
| can work on my online courses.                                |     |     |
| Total                                                         | 4.11| 0.86|
| **(Institutional support readiness)**                         |     |     |
| My institution supports necessary facilities, tools, or       | 3.68| 1.02|
| resources for online teaching.                                |     |     |
| My institution provides enough training opportunities (e.g.,  | 3.64| 0.93|
| workshop, lecture, or seminar) for online teaching.           |     |     |
| My institution provides relevant supports when I have         | 3.86| 0.84|
| technological difficulties for online teaching.                |     |     |
| My institution and supervisor support online teaching with    | 3.99| 0.79|
| positive attitudes.                                           |     |     |
| Total                                                         | 3.79| 0.79|

5 Discussion

This research has two purposes: (1) to identify instructor readiness for online teaching during the COVID-19 pandemic and (2) to demonstrate the extent to which online teaching readiness is associated with satisfaction and confidence with online teach-
ing, which can consequently guide the design of more effective future professional development programs. The results can be interpreted as follows.

Overall, instructors in this research were not satisfied with EOT during the pandemic ($M=2.87$). This is unsurprising given that they were forced to teach online. Many instructors were “bruised” and experienced “trauma” from EOT (Watermeyer et al., 2021). It was well-documented that instructors experienced various challenges in interaction, communication, classroom management, and designing learning activities for the online environment (Badiozaman, 2021; El Refae et al., 2021).

Compared with their low satisfaction, instructors rated their confidence with online teaching higher, with scores over 80. There are some possible explanations for this. First, instructor satisfaction might not correspond exactly to perceived con-

| Table 4 Descriptive statistics and correlation (n=213) |
|-----------------------------------------------|
| Variables                                      | Mean | SD  | 1    | 2    | 3    | 4    | 5    | 6    | 7    |
| Confidence with online teaching               | 83.2 | 9.83| 1    | 0.415**| 0.355**| 0.487**| 0.492**| 0.229**| 0.178*|
| Satisfaction with online teaching             | 2.87 | 0.903| 0.415**| 1 | 0.252**| 0.444**| 0.446**| 0.184**| 0.208**|
| Technological readiness                       | 3.80 | 0.772| 0.355**| 0.252**| 1 | 0.518**| 0.539**| 0.303**| 0.223**|
| Pedagogical readiness                         | 3.68 | 0.689| 0.487**| 0.444**| 0.518**| 1 | 0.663**| 0.403**| 0.253**|
| Online communication readiness                 | 3.78 | 0.676| 0.492**| 0.446**| 0.539**| 0.663**| 1 | 0.421**| 0.194**|
| Time and environment management readiness      | 4.11 | 0.859| 0.229**| 0.184**| 0.303**| 0.403**| 0.421**| 1 | 0.250**|
| Institutional support readiness                | 3.79 | 0.786| 0.178*| 0.208**| 0.223**| 0.253**| 0.194**| 0.250**| 1 |

| Note: *p<.05, **p<.01 |

| Table 5 Hierarchical regression analysis results predicting instructor satisfaction |
|-----------------------------------------------|
| Independent Variables | Model 1 | | Model 2 | |
| | SE | β | t | | SE | β | t |
| (Constant) | 0.261 | - | 11.549 | 0.469 | - | 0.409 |
| Age | 0.095 | 0.088 | 0.859 | 0.086 | 0.114 | 1.230 |
| Gender | 0.167 | -0.172* | -2.465 | 0.150 | -0.140* | -2.239 |
| Teaching experience | 0.062 | -0.047 | -0.457 | 0.055 | -0.099 | -1.098 |
| Previous online teaching experience | 0.036 | 0.025 | 0.353 | 0.033 | 0.003 | 0.051 |
| Technological readiness | 0.093 | -0.021 | -0.267 |
| Pedagogical readiness | 0.114 | 0.242** | 2.758 |
| Online communication readiness | 0.116 | 0.297** | 3.426 |
| Time and environment management readiness | 0.072 | -0.067 | -0.975 |
| Institutional support readiness | 0.073 | 0.127* | 1.978 |
| R² | 0.032 | 0.274 |
| Adjusted R² | 0.013 | 0.241 |
| F | 1.695 | 8.333** |

| Note: *p<.05, **p<.01 |
fidence. Metzler et al. (2021) revealed that instructors showed negative perceptions of their online teaching while meeting most of their lesson objectives. It is possible that instructors were unsatisfied because of their early struggles adjusting to the new teaching environment, while they met their objectives through ongoing effort. Second, their expectations might not have been as high as usual because they perceived that it was an emergency. They might have rated their courses generously considering the extenuating circumstances. Lee et al. (2021) also described that novice instructors’ main purpose during EOT was to simply deliver courses online rather than provide high-quality courses.

However, these EOT experiences need to be distinguished from online teaching in normal circumstances. In the future, providing high-quality courses will be the main teaching objective. It is important to reflect on how to prevent instructors from having negative prejudices toward online teaching because of their EOT experiences and prepare them to teach online successfully in the future by understanding these experiences.

Importantly, the findings of this research provide insights that will help administrators plan this support. This research confirmed that pedagogical and online communication readiness play critical roles in both satisfaction and confidence with online teaching. However, despite their importance, these two variables had lower means ($M=3.68$ for pedagogical readiness, $M=3.78$ for online communication readiness) than the others.

First, given that most instructors (75.2%) in this research had more than five years’ teaching experience, the low level of pedagogical readiness demonstrates that it is not tied to or guaranteed by previous face-to-face teaching skill. Although instructors are accustomed to teaching in face-to-face classrooms, choosing and planning adequate strategies and methods for online learning can be problematic and complicated because of the unique characteristics of the online environment. Meloncon (2007) emphasized that instructors need to have a sense of the particular space where they apply pedagogical strategies when they start teaching online. Cutri et al. (2020) also

### Table 6 Hierarchical regression analysis results predicting instructor confidence

| Independent Variables                          | Model 1          | Model 2          |  
|-----------------------------------------------|------------------|------------------|
|                                               | $\beta$         | $t$             | $\beta$         | $t$             |
| (Constant)                                    | 2.900           | -28.271         | 5.110           | -9.178          |
| Age                                           | 1.058           | 0.016           | 0.149           |                 |
| Gender                                        | 1.852           | -0.074          | -1.034          | 1.614           | -0.054          | -0.873          |
| Teaching experience                           | 0.696           | 0.088           | 0.844           | 0.597           | 0.039           | 0.439           |
| Previous online teaching experience           | 0.408           | 0.007           | 0.094           | 0.357           | -0.019          | -0.302          |
| Technological readiness                       |                 |                 |                 |                 |
| Pedagogical readiness                         | 1.244           | 0.246**         | 2.800           |                 |
| Online communication readiness                 | 1.264           | 0.266**         | 3.087           |                 |
| Time and environment management readiness      | 0.786           | -0.030          | -0.431          |                 |
| Institutional support readiness               | 0.800           | 0.045           | 0.707           |                 |
| R^2                                           | 0.015           |                 | 0.307           |                 |
| Adjusted R^2                                  | -0.005          |                 | 0.274           |                 |
| F                                             | 0.758           |                 | 9.431**         |                 |

*Note:* *p* < .05, **p** < .01
indicated that faculty members with expertise in teaching and their fields feel humble and struggle with stress in the process of shifting online because they are no longer experts. Indeed, Johnson et al. (2020) investigated United States faculty members’ and administrators’ experiences during the COVID-19 pandemic: 93% responded that they should have made at least one modification to their teaching practice to appropriately adapt to online teaching.

Although pedagogical readiness is essential to help instructors have more satisfaction and confidence with online teaching, some researchers have pointed out that institutional support and professional development tend to focus more on technological issues than pedagogical strategies and methods (Magda et al., 2015; Orr et al., 2009). Furthermore, researchers have noted that many current professional development programs for online teaching emphasize general pedagogy rather than content-specific pedagogical practices (Leary et al. 2020). Crucially, professional development programs need to focus on pedagogical knowledge and skills as well as technological ones and offer more specific and practical training opportunities to instructors.

In addition, this research confirmed that instructors have low scores in online communication readiness. Particularly, they showed low scores for the items “I feel confident in expressing myself (emotions and humor) to students throughout text-based communication” (M=3.39) and “I can make more comfortable and respectful communication environment by emphasizing students to communicate with netiquette” (M=3.72).

Communication has the function of facilitating interpersonal relationships as well as exchanging information (Alawamleh et al., 2022). Computer-mediated communication (CMC) has limits in allowing people to share emotional and social content because of the lack of social cues (e.g., gestures, facial expressions, appearance) and immediacy (Hill et al., 2009). While instructors in this study were accustomed to delivering objective information to students, they might not be familiar with how to share emotional and social content using CMC to forge closer personal relationships.

Contrary to the low scores of instructor communication readiness, this research confirmed that online communication readiness has the most powerful predictive effect on instructor satisfaction and confidence. The result echoes those suggested by previous researchers. Boling et al. (2012) found that active and comfortable online communication is essential to enhance students’ access to instructors and other students and thus make them feel connected to the learning community. Wilson and Stacey (2004) said that active communication is an important component of teaching presence. Alawamleh et el. (2022) said that effective communication plays an important role in creating a more productive and efficient teaching and learning environment.

Notably, this research corroborated the importance of communication readiness in the EOT context. Many researchers have stressed the importance of social and affective care in this EOT situation, in which there was no physical presence (Lemay et al., 2021; Sepulveda-Escobar & Morrison, 2020). Instructor online communication readiness is a prerequisite for affective interaction and relations with students. Instructors with high online communication readiness might have more successful interactions with students, which may make them more satisfied with online teach-
ing. Similarly, Lee et al. (2021) explored instructors’ EOT experiences in the context of a university in South Korea. They pointed out that the lack of interaction with students made instructors feel dissatisfied with their online teaching, although they met their original teaching objective of “delivering knowledge.”

Taken together, the findings about online communication readiness imply that it has to be stressed in professional development programs for online teaching. For instance, instructors should be trained in communication skills and strategies that facilitate social presence and relations, such as creating a warm, friendly atmosphere by using an appropriate sense of humor, sharing personal or professional stories, giving personalized messages or feedback, and clarifying the meaning of their messages (Albrahim, 2020).

In this research, technological readiness did not have any significant influence on instructors’ satisfaction or confidence with online teaching. This contradicts previous research showing that instructors’ technical skills are positively associated with satisfaction with online teaching (Blundell et al., 2020; Masry-Herzalah & Dor-Haim, 2022). There are some possible explanations for these results. First, the impact of teaching readiness might be offset by technological support from institutions. Many institutions might provide prompt, relevant support to their instructors when the instructors had technological difficulties. Second, the results support the idea that satisfactory online teaching experiences are not guaranteed by technological knowledge or skills. Other factors, including pedagogical and online communication readiness, may be more influential. Indeed, some previous research reported that technological readiness may not be the most critical critical factor in successful and skillful online teaching (Bigatel et al., 2012; Bolliger & Halupa, 2021).

In addition, no significant associations were found between time and environment management readiness and instructor satisfaction or confidence with online teaching. This might be caused by the gender distribution of the current research: most instructors were male (83.1%). Generally, female instructors have more limitations in time management because of the need for family care (Martin et al., 2019). Finally, this research found that institutional support has no significant effect on instructor confidence and a weak predictive effect on satisfaction. During the emergent crisis, instructors might have more support from peers outside of their institutions. Moreover, institutional support might influence instructors’ satisfaction or confidence with online teaching indirectly by influencing other individual online teaching readiness factors. Petko et al. (2018) suggested that the effectiveness of online teaching depends on instructors’ individual readiness, which is influenced by institutional support.

6 Limitation and implication

Admittedly, this research has some limitations. First, the participants in this research may not represent all instructors in higher education institutions because of the small sample size and the limited context of South Korea. Therefore, one must be careful not to generalize the findings of this research to samples from different backgrounds. More research needs to be conducted by collecting data from different and larger samples. Next, this research has limitations in that it depends on self-reported
psychological states—satisfaction and confidence—as outcome variables. Future research needs to explore the relations between instructor online teaching readiness and the actual effectiveness of online courses by focusing on students’ achievement and satisfaction with online teaching.

Despite these limitations, this research contributes to the understanding of the impact of online teaching readiness factors on successful online teaching experiences, particularly in the EOT context. It also provides meaningful implications for professional development programs for online teaching. Most instructors were not well-prepared for online teaching and thus reported unsatisfactory experiences during the EOT period. Particularly, although online communication and pedagogical readiness had the greatest impact on instructors’ satisfaction and confidence, instructors showed the lowest readiness for these two factors.

While researchers have emphasized the importance of integrating instructors’ pedagogical, technological, and content knowledge (Archambault & Crippen, 2009), professional development programs for online teaching still seem to focus on technological aspects (Magda et al., 2015; Orr et al., 2009). Pedagogical and online communication areas should be stressed when administrators and policymakers design professional development programs. It is expected that this research will be useful for future efforts to prepare instructors for future high-quality online teaching.

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**Data Availability** The datasets generated during and/or analysed during the current study are available from the corresponding author on reasonable request.

**Declarations**

**Conflict of interest** None.

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