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International Teaching Assistants' Contributions to Online Learning: A Qualitative Case Study

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ABSTRACT

To meet the needs of diverse population of students, online classes in higher education started to proliferate in recent decades. Increase in enrollment in online courses required U.S. higher education institutions to employ teaching assistants, including international teaching assistants (ITAs) to teach a variety of undergraduate level courses. This exploratory qualitative case study aimed to analyze international teaching assistants' (ITAs) teaching strategies through the lens of Technological Pedagogical Content Knowledge (TPACK) framework. Themes emerged from the data that highlight the knowledge and skills ITAs brought to teaching online classes.

INTRODUCTION

Over the past three decades, online learning has become an integral part of higher education (Wingo et al., 2017). The steady increase in enrollment in online courses has led to more than 69% of higher education institutions reporting that they considered online learning an essential component of their long-term student recruitment strategy (Allen & Seaman, 2013). In the fall of 2016, approximately 6.3 million students were taking at least one distance education course, making up 31.6% of all higher education enrollment (Allen & Seaman, 2017).

The outbreak of the COVID-19 pandemic in March 2020 required many higher education institutions in the United States to shift quickly to fully online education (Johnson et al., 2020; Villasenor, 2021). Institutions continued to provide their courses primarily via online modality in 2020 and 2021 (Johnson et al., 2020; Villasenor, 2021). Some students struggled to adjust to the online learning environment in the midst of a global pandemic (Aguilera-Hermida, 2020; Gonzalez-Ramirez et al., 2021), but many students were drawn to the flexibility that online learning provides. The pandemic introduced online learning to many students who may not otherwise have been receptive to it. Thus, online learning may see a further increase in popularity after the COVID-19 pandemic.

As the popularity and demand for online courses has increased, institutions have developed different strategies to deliver their online courses. Some institutions began hiring teaching assistants (TAs) to support faculty in developing and delivering online courses (Armstrong et al., 2021). TAs are typically graduate students who teach part time while pursuing their graduate degrees.

With the increase in numbers of international graduate students in the United States (IIE, 2021), the number of international

teaching assistants (ITAs) saw an increase as well (Choy & Cataldi, 2011; Gorsuch, 2003, 2011). Although ITAs have traditionally taught face-to-face undergraduate courses (Choy & Cataldi, 2011; Gorsuch, 2011), it is expected that there will be an increase in the number of ITAs teaching online courses over the next few decades. Thus, the purpose of this exploratory qualitative case study was to understand ITAs' approach to teaching online courses.

LITERATURE REVIEW

ITAs have had a long history in the United States. The change in demographics in U.S. graduate schools during the 1960s and 1970s contributed to employing ITAs to teach undergraduate classes (Smith, 1992). The increasing number of ITAs in U.S. classrooms raised several concerns in universities, and those concerns have been extensively addressed in the literature of the last four decades. Early seminal articles (e.g., Bailey, 1984; Rao, 1995; Smith, 1992) on ITAs focused on their weak command of English or their insufficient cultural knowledge rather than exploring their contributions to the teaching process in U.S. higher education. These studies mainly discussed complaints from U.S. domestic students or their parents that revolved around perceived ineffectiveness of ITAs' teaching due to their accented speech. In response to a growing number of complaints, many states (e.g., Oklahoma, Ohio, and South Carolina) passed laws in the 1980s that required language testing for ITAs (Smith, 1992).

In 1968 the National Association for Foreign Student Affairs (NAFSA) made an official report on a nationwide concern about the perceived ineffectiveness of ITAs' teaching on U.S. campuses (Bailey, 1984; Trebing, 2007). Thus, starting in the 1970s, some scholars began to address the problems related to ITAs' teaching in the U.S. higher educational system, focusing primarily on ITAs' English language skills (e.g., Bailey, 1984; Berdie et al., 1976; Davies et al., 1989; Rao, 1995; Smith, 1982; Trebing, 2007). Questions over ITAs' language proficiency gave rise to many training programs at U.S. universities to enhance ITAs' language skills (Smith, 1992). Training programs and workshops for ITAs were not limited to language training. They also included instructional strategies, classroom management, and classroom climate (Weimer et al., 1989). When designed and delivered effectively, training programs were successful in terms of increasing ITAs' cultural awareness (Smith, 1992; Weimer et al., 1989).

Several other studies (e.g., Grossman, 2011; Hahn, 2004; Kang, 2012; Rubin, 2002; Smith et al., 2005) also examined the U.S. students' reactions to the accents of ITAs, focusing primarily on the syllabic stress patterns of ITAs' speech. Many U.S. undergraduate students evaluated ITAs' English as more accented and less intelligible than that of their TA counterparts (Kang, 2012). However, when ITAs used correct stress and pronunciation, American students reported greater intelligibility of the ITAs' speech (Grossman, 2011; Hahn, 2004). Thus, according to U.S. students' responses, accented or wrongly stressed speech in English affected the delivery of the class lectures, making it difficult for them to comprehend the content of lectures (Grossman, 2011). Some scholars (e.g., Rubin, 2002; Wang & Mantero, 2018) discussed how U.S.

students' assertions of unintelligibility of ITAs' accented speech could have stemmed from their negative attitude toward non-native speakers of English. The U.S. undergraduate students tend to have stereotyped expectations about ITAs' language proficiency, speculating that if ITAs have accented speech, they might not be knowledgeable in the course content. A biased attitude may affect the U.S. students' communication with their foreign teaching assistants (Rubin, 2002). Thus, focusing on their accent rather than on their course content knowledge may lead to U.S. students losing the opportunity to benefit from ITAs' knowledge (Wang & Mantero, 2018).

Additionally, scholars have focused on how international graduate students may face many other challenges when taking on roles as ITAs at U.S. universities, such as understanding U.S. classroom behavior in delivering classes due to their lack of experience both as a graduate student and as an instructor (Skow & Stephan, 2000; Trebing, 2007). ITAs' expectations of U.S. students might also vary due to "differences in cultural values, learning and teaching styles, and verbal and nonverbal ways of speaking" (Skow & Stephan, 2000, p. 357). In fact, ITAs reported encountering instructional challenges such as dealing with U.S. students' impolite behavior in the classroom, which may include late arrivals, early departures, eating food in the classroom, making excuses for late submission of assignments, and challenging the teaching assistants' authority in the classroom (Ashavskaya, 2015; Bresnahan & Cai, 2000). Many ITAs also noted a lack of training about the U.S. grading and testing system, which may have caused them anxiety and frustration (Ashavskaya, 2015). ITAs also encountered cultural challenges, such as being uncomfortable due to different communication styles of students (e.g., students calling them by their first name; Bresnahan & Cai, 2000). Additionally, due to academic and teaching loads, many ITAs experienced social challenges in establishing relationships with their U.S. colleagues and their professors (Kuo, 2011).

Much of the existing research (e.g., Smith, 1992; Rubin, 2002) on ITAs has taken a deficit approach by, for example, framing ITAs' language skills as the source of communication problems with U.S. students or by highlighting the challenges ITAs face in adjusting to the U.S. higher education system. Very few studies have looked at the knowledge and skills that ITAs bring to their teaching assignments. Even less is known about ITAs' online teaching experiences and the methods they use in online teaching.

CONCEPTUAL FRAMEWORK

This study was guided by Mishra and Koehler's (2006) technological, pedagogical, and content knowledge (TPACK) model. Mishra and Koehler (2006) developed this model for conceptualizing the complex relationships between technological, pedagogical, and content knowledge in teaching, highlighting how this combined knowledge can be effectively used in both online and traditional face-to-face courses. The model posits that integration of technology facilitates better delivery of course content while helping instructors improve their pedagogical skills (Koehler & Mishra, 2009). The model highlights three types of knowledge: (a) content knowledge; (b) pedagogical knowledge; and (c) technological knowledge

(Koehler & Misra, 2009). Content knowledge explores whether the instructor possesses enough knowledge on the content of the subject (Koehler & Misra, 2009). Pedagogical knowledge refers to an instructor's ability to integrate effective teaching strategies to deliver the content of the classroom materials (Koehler & Misra, 2009). Technological knowledge refers to an instructor's competence of using technological tools to deliver the content effectively (Koehler & Mishra, 2009).

Several studies on online teaching in higher education contexts utilized the TPACK framework to analyze instructors' competency in online settings (e.g., Benson & Ward, 2013; Pelz, 2004; Voogt et al., 2013). These studies highlighted how the pedagogical, content, and technological knowledge affected the instructors' choice of relevant technology for effective teaching (Benson & Ward, 2013; Voogt et al., 2013). Using this model to guide our study sensitized us to the different types of knowledge that ITAs may bring to online teaching.

RESEARCH DESIGN

The purpose of this qualitative case study was to understand ITAs' approach to teaching online courses at a midwestern Illinois university. A case study, as a research methodology, strives to gain an in-depth understanding of a phenomenon within a clearly bound system or case (Yin, 2009). To keep the context constant, we used a single case study approach (Yin, 2014). All participants were employed by the same department at one university and taught sections of the same course.

CASE DESCRIPTION

Our case was an online course taught in an educational technology department of a public research university (MIU, a pseudonym) located in the midwestern United States. MIU offers traditional classes as well as hybrid and online classes for undergraduate and graduate students. Before providing a description of the case, a brief description of MIU is essential to contextualize the demographics of its international students at the research site. At the time of our study, MIU hosted 735 international students from 118 different countries; international students made up approximately 5.7% of MIU's student population, which is similar to the national average of

international students in the United States (IIE, 2021). Most international students at MIU study computer information systems, followed by computer science, industrial engineering, and mechanical engineering. Almost three quarters of all international students at MIU are graduate students (73%), making up 14.3% of the graduate population. Twenty-seven percent of international students are undergraduates, making up 2.2% of the university's undergraduate population.

The educational technology department within the MIU hires more ITAs than any other department of the university each academic year. TAs, including ITAs, in the department teach its undergraduate online classes; most of the ITAs (approximately 10-12 ITAs each semester) are assigned to one specific course on the use of educational technologies. The course is offered at two levels: the 200 and 400 levels. Both levels are designed by a faculty professor of the department who serves as a supervisor for the ITAs. Each ITA facilitates a section of the course. The professor provides guidance to all teaching assistants on how to effectively teach the course in its predefined format. Recognizing the limited control ITAs have over course content and design, we focused primarily on their approach to online teaching rather than course design and choices related to course content or assignments.

In the Spring 2019 semester, when we started to contact the potential participants for the study, 22 teaching assistants were teaching the online course on educational technology, with 420 freshmen and sophomore students enrolled for both levels. Out of 22 teaching assistants, 13 were ITAs.

PARTICIPANTS

To be selected to participate in this study, the teaching assistants had to meet the following criteria: (1) be an international graduate student; (2) have taught a section of the online class on educational technology; and (3) have served as a TA for at least one semester. In Spring 2019, we contacted 13 participants who met the study criteria; however, only 6 ITAs, three men and three women, responded to the invitation. The detailed demographic information of the participants is presented in Table 1.

Table 1
Participants

Pseudonym	Gender	Age	Years in the U.S.	Country of Origin	Prior teaching experience in native country (Years)	Online teaching experience in the U.S. (Years)	Took online classes as a student	Shared evaluations
Gustavo	Man	Mid 50s	2	Colombia	> 20	2	Yes	Yes
Nazli	Woman	Mid 30s	9	Iran	> 2	4	Yes	Yes
Elizabeth	Woman	Mid 30s	6	Tanzania	> 2	3	Yes	No
Mansur	Man	Late 20s	4	Bangladesh	> 2	3	Yes	No
Aylin	Woman	Late 30s	8	Turkey	> 5	1, 5	Yes	Yes
Ahmed	Man	Mid 30s	4	Saudi Arabia	> 3	3	Yes	No

DATA COLLECTION

Before conducting the study, we applied for approval from the institutional review board (IRB). Approval was granted on July 17, 2019. Data collection started in the Fall 2019 semester and lasted until the end of 2019. As is typical of qualitative case study research, we collected data via multiple methods (Yin, 2014). Specifically, we conducted semi-structured interviews with participants and asked them to share their student evaluations with us. Thus, the invitation email also requested that participants bring copies of student evaluations if they were willing to share them. Three of six participants brought copies of their teaching evaluations to the interviews; therefore, part of the interviews with these three participants (Aylin, Gustavo, and Nazli) was spent discussing the evaluations and the participants' thoughts on them. The three ITAs who provided evaluations shared that they had specifically requested the evaluations after the semester ended. The other three ITAs explained that they were unable to bring teaching evaluations, as they had never received a copy of their evaluations. The course coordinator had provided positive verbal feedback to them at the end of their teaching assignment but, as they had not requested to see their specific student evaluations, those had not been shared with them. We were therefore unable to analyze student evaluations for those participants.

Since the current study aimed to explore the ITAs' experiences through their own words and perspectives, personal interviews were the main data collection strategy (Bogdan & Biklen, 1997). Interview questions also sought ITAs' responses to their experiences with online classes as students themselves, their prior in-person teaching experiences in their respective home countries, and their pedagogical and technological knowledge in delivering the assigned sections of the course. Each interview took place in a private location on the MIU campus and lasted 45 to 60 minutes. The interview data helped us delve deeply into the participants' views, opinions, and perceptions, and allowed them to expound on issues that were salient to their online teaching experiences.

DATA ANALYSIS

Data analysis began informally during the interview phase and continued during the transcription process when recurring themes, patterns, and categories became evident (Yin, 2009). Before we started coding the data, we read the interview transcripts and course evaluations to familiarize ourselves with the data. Next, each researcher conducted multiple rounds of coding (Yin, 2009) starting with line-by-line coding and then, through subsequent rounds of coding, moving from codes to emerging themes. We then met as a research team to compare the emerging themes and to discuss the preliminary findings. In a second round of coding, we went back to our raw data and marked segments of text that related to the TPACK model. We also highlighted segments of the student evaluations that aligned with the TPACK model. We analyzed these segments of text in relation to our emerging themes and revised the themes as needed.

TRUSTWORTHINESS

To increase trustworthiness of the study, we utilized data triangulation and investigator triangulation (Guion et al., 2011). For data triangulation, we reviewed the sections of the course evaluations where students assessed ITAs on content, pedagogical, and technological knowledge and compared the scores with the findings from interviews. As for the investigator triangulation, each of us carefully examined the textual data from interview and evaluations. This process helped us develop a deeper understanding of the case study and reach consensus on coding the data. Both types of triangulations helped enhance the trustworthiness of this case study.

LIMITATIONS

There are a few limitations inherent to this case study. First, not all participating ITAs provided their course evaluations; leading to uneven data and limiting our ability to engage in data triangulation for half of our interview participants. In addition, we recognize that student evaluations are not a very accurate measure of teaching skills; thus, the insights gained from student evaluations were limited. Another limitation was that we only got one perspective on the ITAs' approaches to online teaching. Interviewing the professor who developed the course or the students in the class or conducting observations of ITAs' online teaching might have brought other perspectives on the topic. However, as previous research has rarely focused on ITAs' contribution to online teaching and learning from the perspective of ITAs, we thought the ITAs' perspective was an important one to add. Future research should consider exploring different perspectives on ITAs' contributions to online teaching.

FINDINGS

Our data analysis indicated that ITAs had in-person teaching experience that they gained in their home countries. Additionally, their online learning experiences during their studies in the U.S. helped some of them acquire content knowledge on the course they were assigned to teach. Few ITAs noted that they had initially struggled with teaching the course due to the lack of familiarity with the content of the course materials and with other issues, such as grading policies. Therefore, participants expressed the need for specific training both at the institutional and departmental levels. ITAs also discussed facing some teaching challenges, such as interacting with students in teaching this asynchronous online course. Developing some strategies to overcome these challenges, such as making themselves accessible and flexible, helped these ITAs enhance their teaching presence in the online course. In addition, participants utilized essential technologies and other tools to interact with students and to enhance student learning.

TEACHING AND ONLINE LEARNING EXPERIENCE

The ITAs' previous in-person teaching and online learning experience, their collaboration with their fellow TAs, and their commitment to being effective instructors helped them overcome systemic barriers (i.e., a lack of training and an unfamiliarity with course content) that they encountered. For

instance, Aylin shared how her previous teaching experience helped her teach effectively.

I was elementary school teacher in my home country, and I also had an experience of working with autistic children. Therefore, as a teacher, I know students come from different learning abilities and may face challenges at school. When I started teaching online courses here in the U.S, I recognized differences in learning abilities. So, I developed tasks that could be submitted in different formats, depending on students' capability.

Aylin's extensive experience working with elementary school children in her home country helped her recognize students' learning abilities in the courses she instructed at MIU. Being cognizant of those abilities, she developed different assignments reflecting these abilities and allowed students to choose from and complete them accordingly.

Some participants had knowledge of course materials gained previously as online learners. For example, Elizabeth noted,

When I was an undergraduate student, I took an online class. When I got a TA-ship in my doctoral program, I was assigned to teach the same course that I took as an undergrad. So, I had already knowledge of the course materials, which helped me develop effective teaching strategies.

Elizabeth held an undergraduate degree from the same institution where she was enrolled as a doctoral student. When Elizabeth was assigned to teach an online course by the department, she learned that it was the same course that she had taken as an undergraduate student. Her familiarity with the course content allowed her to develop strategies to deliver the course materials.

LACK OF KNOWLEDGE OF COURSE CONTENT

Some ITAs relied on their previous teaching experience when they encountered systemic barriers, such as lack of familiarity with the course content. For instance, Nazli noted,

I was unfamiliar with the course materials, so I had to go through materials and watch the video tutorials because, as TAs, we did not develop the course. My experience as an instructor of statistics in my country really helped me develop strategies to prepare myself for teaching here.

Nazli discussed how her previous teaching experience in her home country helped her to devise strategies that would help familiarize herself with the course materials and prepare herself to teach an online class.

Commenting on her knowledge of the course content, Aylin mentioned:

They offered me to teach this course only a week before the semester. This was a struggle for me because I was not familiar with the content at that moment. So, I had to check out already prepared modules to get myself acquainted. It was hard. I had to seek out help with the course coordinator and ask questions from other TAs.

Aylin was also initially unfamiliar with the course content because she was assigned to teach the course only a week prior

to the start of the semester. Therefore, she had to seek assistance from the course coordinator and from her fellow TAs.

NEED FOR TRAINING AT THE INSTITUTION LEVEL

Although the ITAs participating in this study reported having some previous teaching experience, they expressed the need for training on teaching. For example, Ahmed said,

I did a lot of corporate trainings in my country. Before conducting training, we did the needs assessment to learn what information or training the employees lacked so that to prepare the training materials accordingly. When they assigned me a course to teach in the U.S., I saw that working with young-adult students was different. I think that it is an obvious example of how urgently training [on teaching] is needed for all TAs so we can use that to enhance our productivity as TAs.

As Ahmed shared, he did not have prior teaching experience in an educational setting. Although he had experience as a corporate trainer in his country, he realized upon becoming an ITA at MIU that this experience was not enough for teaching college students. Therefore, he mentioned the importance of trainings for new ITAs so they could facilitate the courses effectively.

Gustavo also recognized the need for trainings for ITAs, stating,

Although I used older version of this software at the institution in my home country, we should have been offered some trainings on Blackboard. The version of Blackboard that they used at this university was different. So, I think that we should be trained on tackling special or new features of this software because it is updated regularly.

As Gustavo mentioned, he had faced some challenges using Blackboard, despite using this software in his home country. Therefore, he expressed the need for regular trainings on using Blackboard so that TAs could be regularly informed about recent features of the software.

NEED FOR TRAINING AT THE DEPARTMENT LEVEL

Some ITAs noted that teaching-specific training offered by the department would have been beneficial. For instance, Nazli mentioned, "The training on the grading system of the course assignments would have been really helpful for new TAs."

Talking about the need for training, Aylin said,

I would have preferred to have a training on how we can modify already prepared content based on students' learning abilities. Also, I would like to have specific trainings prior to the start of the semester for new TAs, such as how to request a shell for the course that you are going to teach.

Mansur expressed the need for mentoring at the departmental level for newly hired TAs. He explained,

There was the orientation when I assigned to teach a course, where they made a presentation on how to set up the course and stuff like that. But, in my opinion, assigning a mentor for new ITAs or pairing up seasoned TAs with new hires would be more productive.

The participants' responses showed that they had a wealth of knowledge and previous teaching experience that helped them to overcome the systemic challenges, such as lack of content knowledge, they faced when teaching online classes in the U.S. The student evaluations for the Spring 2019 semester also supported that ITAs possessed high levels of content knowledge. For instance, Nazli got a 6.0 on a 6-point scale, whereas Aylin scored 5.91, and Gustavo got 5.75 on a 6-point scale.

TEACHING CHALLENGES

Participants reported that online teaching entails many challenges, such as dealing with student issues. They had to learn to overcome some of the challenges by making themselves available and being flexible with submission of the assignments.

INTERACTING WITH STUDENTS

Some ITAs shared how they had to frequently communicate with students so that they did not fail the course. For instance, Mansur noted,

When they assigned me to teach online class here, I noticed that there is a huge disconnection between me and students because I do not see my students. I realized that the online courses are very different. You cannot stay disconnected with your students. Otherwise, they would forget about the course. They start panicking and start emailing, by saying "I was not aware of deadlines because I was busy with this or that." And then you have to find ways for helping them so that they can submit the assignments that they have missed.

For Mansur, it was important to have constant interactions with students. He would frequently remind them about upcoming assignments because he noticed that less communication between him and the students would result in students missing the deadlines. Therefore, he perceived those students might need some assistance for completing the assignments that they had missed.

Nazli explained her interaction with students in detail. She noted,

The most important challenge is that sometimes students do not submit the assignments properly or do not submit on time. So, I reach out to students, asking questions, such as "What is the issue? What is a problem?" I provide an opportunity for students to clearly explain what the reason was. Then, I give them another opportunity to resubmit or [give them] an extension.

Nazli discussed how she interacted with students by reaching out to them and asking questions to find out the challenges students were facing when submitting the assignments. Once she was satisfied with the students' explanations, she either extended the deadline of the submission or gave them an opportunity to resubmit their assignments.

ITAs also shared that they tried to enhance the instructor presence and interaction in the online class by facilitating discussion boards. For example, Elizabeth mentioned, "Well, I

try to interact with them by posting my own response to discussion questions. In this way, students get more engaged in reacting to my response and to their peers."

INSTRUCTOR ACCESSIBILITY AND FLEXIBILITY

ITAs tried to make themselves approachable and accessible so that students could feel comfortable to share their problems and have a positive and engaging learning experience. In this regard, Aylin noted,

I say to students, "I am not here to be bossy to you, I am here to help you," "I am not making things complicated. Please just be honest and ask, help or ask questions." Many students appreciate that, and they email me back saying "Always thankful you are super. I wish, I could take more classes with the professors like you," those kinds of things.

Aylin mentioned that she asked students to reach out to her and to be honest about their problems and challenges when doing so. She expressed her satisfaction with student appreciation of her helpfulness throughout the course.

In terms of his flexibility as an instructor, Gustavo said,

Well, I try to be as flexible as possible in this grading process because I understand that it is not easy to transition from high school to university life. It's difficult for them because, in high schools, teachers help and guide them. So, I think I should act like a high school teacher sometimes to guide them through the online learning process.

Gustavo mentioned that he was aware of student challenges, highlighting the how difficult was for the students to transition from high school to the college life. He believed that he should provide some guidance for them to help with the transitioning stage.

The participants' responses showed how that they dealt with various academic challenges, such as students' being late with submission of the assignments and their struggles with the online course. These ITAs made extra efforts to meet student needs by making themselves available outside of the classroom. To learn how the ITAs were assessed regarding their supportiveness of students, we looked at the students' evaluation of their instructors' accessibility outside of the classroom. When reviewing the relevant items in the evaluation (e.g., "The instructor was accessible"), we saw that all three of the participants who provided their students' evaluations received high scores in this category. Aylin received an average rating of 5.91 on a 6-point scale, and Nazli and Gustavo both received an average rating of 6 points.

EFFECTIVE USE OF INSTRUCTIONAL TECHNOLOGY

ITAs in this study utilized a variety of technologies to teach online classes. Although their use of technology occurred primarily within the parameters of using basic teaching and communication technologies (e.g., learning management systems and email), they strove to use them to increase interactions with students. For instance, Gustavo said, "I create discussion threads on Blackboard for each module topic. Also,

I provide constructive comments on student assignments, by using Blackboard features.”

Some ITAs mentioned that they used email to remain in regular communication with students. For instance, Nazli said,

I was sending emails to remind them; usually, I send group emails to all students, so that they would not say, “I didn't get it.” I will also send copy of the announcement through Blackboard. So, there would be a copy on blackboard, and they also have their email.

Mansur also frequently emailed students about the course assignments. He said, “Whenever I send an email, I write the course number and then the assignment I'm talking about so that it gets their attention.”

Some participants mentioned that they did not limit themselves to using basic technologies. They used other tools to help students learn the course materials or navigate other course technologies. For example, Aylin noted, “I record the videos for the course introduction. Or if students need help with other technologies in submitting the assignment, I say, “Let's choose the software through Anywhere Apps because you do not have the necessary software to submit it.” Aylin mentioned that she would occasionally record videos to explain the assignment submission process to the students. She also reported that she students how to benefit from free software applications provided to MIU's students.

To learn how the ITAs were assessed in technological competence, we also reviewed the students' evaluations of the ITAs' technological knowledge. Students were prompted with a 6-point scale to rate how effectively they perceived their instructor to have used technology during the semester. The three participants who submitted their student evaluations scored high. Aylin's score was 5.91 on a 6-point scale, and Gustavo and Nazli got 6 points each. The overall mean of comparative scores of the ITAs on all aspects of the course evaluations (e.g., content knowledge, instructor's accessibility, pedagogical knowledge, and technological knowledge) in relation the mean score (5.42) of the Department were 5.91 (Aylin,) 6.00 (Nazli), and 5.75 (Gustavo).

As seen from the responses and from the results of the student evaluations, all the participants in this study effectively used instructional technologies. Whenever possible, a few ITAs recorded short videos to explain course materials and also taught students how to effectively use virtual applications provided by the university.

DISCUSSION

When looking at our findings through the lens of the TPACK model, we found that the ITAs in this study were aware of pedagogical principles of teaching and of the learning styles of their students, all of which attests to ITAs' pedagogical knowledge, the core element of the TPACK model. Some ITAs shared that they had good knowledge of the course materials prior to teaching the online class. For example, Elizabeth shared that she had taken the same course when she was an undergraduate student at MIU. Some ITAs mentioned that they had initially lacked the content knowledge due to unfamiliarity with the course they were assigned to teach. They spent time

trying to gain that content knowledge, whether through reviewing the course materials, reaching out to fellow TAs, or, like Nazli, watching video tutorials related to course topics. Therefore, those ITAs perceived that they had mastered the content knowledge to teach the course. The findings from student evaluations also showed that ITAs had sufficient content knowledge as they were evaluated highly in this category. ITAs in this study mentioned that they utilized different types of technology to foster student learning. In other words, they possessed technological knowledge when integrating various technological tools, such as emails, Blackboard, or other additional instructional tools to support students. In the context of online teaching, it is typical that the teachers' technological and content knowledge may overlap (Benson & Ward, 2013). As ITAs in this study utilized a variety of technology tools to explain the course materials and to facilitate student learning, they demonstrated technological content knowledge.

The findings of this study also indicated that the ITAs who participated in this study strove to provide support to their students in online courses despite facing challenges. Participants utilized their prior teaching and online learning experiences in approaching the teaching assignment. ITAs stressed the importance of being accessible to students, being present in the online classroom, and regularly interacting with their students – all of which are important components of online teaching (Pelz, 2004). ITAs also indicated that they tried to be flexible with students who struggled to submit assignments in a timely manner by sending multiple reminder emails and following up with students who missed an assignment.

Overall, the ITAs in this study utilized a similar approach to teaching undergraduate students as their domestic peers in Kendall and Schussler's (2012) study, which found that graduate teaching assistants are more understanding of students' challenges due to being in “a student's shoes” themselves. For instance, in our study, when discussing students' late submissions, the participants noted that they were not frustrated with such behavior of students; instead, they reached out to students and tried to develop strategies to help them succeed in online courses. This finding contradicts previous studies' findings (e.g., Ashavskaya, 2015; Bresnahan & Cai, 2000) that reported ITAs' frustration with the U.S. undergraduate students' inconsiderate behaviors, such as making excuses for late submission of assignments. However, it is worth noting here that while the ITAs in this study believed that being flexible with students regarding deadlines was helpful for students, it is unclear if this approach was truly beneficial to students or whether it hampered student learning and performance and perpetuated passive learning (Zakaria et al., 2016). Moreover, the participants in this study did not consider themselves as culturally or linguistically incompetent when building a rapport with students, showing inconsistency with previous literature (e.g., Smith, 1992) that framed ITAs' lack of language skills as causing communication problems with the U.S. students.

The findings of this qualitative case study led to several recommendations for future research. Since the ITAs' online teaching experience was explored only from their own

perspectives, future studies should include comparison of ITAs' and domestic teaching assistants' approaches to teaching online classes to explore where there are similarities or differences between their strategies. Future research should also examine U.S. undergraduate perceptions of the ITA's teaching approaches by employing quantitative or mixed methods research designs.

The findings also lead to many practical implications for preparing ITAs for their teaching jobs in higher education institutions. For instance, ITAs in this study expressed their need for specific trainings on teaching students at the institutional and departmental levels. Therefore, higher education institutions should consider developing trainings on relevant aspects of teaching, such as dealing with student behavior, utilizing the grading system, understanding academic policies, and promoting a developmental approach to teaching that finds a balance between accountability and flexibility.

CONCLUSION

This study aimed to bring a more nuanced understanding of the ITA's contribution to online teaching in the context of the U.S. higher education by shedding a light on ITAs' pedagogical, content, and technological knowledge and describing them from their own perspectives. The U.S. higher education system makes a commitment to bringing diversity to its higher education teaching by hiring ITAs. However, literature on ITAs (e.g., Kang, 2012; Rubin, 2002) focuses on issues ITAs' language problems, rather than their contribution to the U.S. higher education teaching, such as an opportunity for interacting with linguistically and culturally diverse individuals. This study highlighted that ITAs utilized similar approaches to teaching as their domestic peers, trying to capitalize on their prior knowledge and experience and putting themselves in the shoes of their students. ITAs in this study focused on being present, available, and flexible, stressing the need to interact frequently with students for reaching excellence in online teaching. The study, however, also presented some of the challenges ITAs faced due to lack of preparation and training and limited teaching experience.

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