THE EFFECTIVE USE OF VIRTUAL COMMUNICATION IN AN ONLINE PROFESSIONAL DEVELOPMENT PROGRAM: INVESTIGATING TEACHERS' ATTITUDES

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ABSTRACT

The coronavirus (COVID-19) is considered to be an external factor that affects teachers' attitudes toward online professional development. Therefore, this study investigates the use of virtual communication in an online professional development program through the lens of teachers' attitudes toward technology. This study was conducted in 15 schools across the United Arab Emirates (UAE) during the COVID-19 pandemic. A teacher training program called The Ta'alouf Inclusion Special Education, one of the initiatives of the Al Jalila Foundation (AJL), aimed to train teachers, promote inclusion, and support children with special educational needs and disabilities. Participants (teachers, school leaders, learning support assistants, social workers, and department heads) received 24 hours of virtual training sessions on numerous topics related to inclusive education and special educational needs and disabilities.

A concurrent mixed-method approach was utilized to collect quantitative data from participants using an online survey and qualitative data using interviews. The study results reveal that the quarantine of COVID-19 did not affect teachers' continued professional development. On the contrary, teachers felt the ease of using technology and the usefulness of the topics mentioned, which formed their positive attitudes toward using technology and led to their engagement and continuation of developing professionally either during or after the pandemic.

Keywords: Virtual communication, professional development, online program.

INTRODUCTION

One of the main focuses of the United Arab Emirates (UAE) National Agenda 2030 is shifting the focus from dependence on oil to a knowledge-based economy (UAE Vision, 2021, 2009). UAE's 2030 Agenda stated that one of the key performance indicators for sustainable development is to have high-quality teachers (UAE National Committee on SDGs, 2017). As a result of the lockdown of COVID-19, schools and universities globally shifted toward e-learning. Although it was tough for all educators and students, some important lessons were learned from this experience (Pokhrel & Chhetri, 2021). Many tasks were shifted to online and relied more on virtual communication, such as conducting online conferences, meetings, professional development, and other tasks. The worldview toward these tasks has changed to save time and money using technology to enhance the workflow. These days, individuals prefer to communicate virtually to solve the challenges of time savings and reduce the virus's contagiousness. However, there is still a gap in online teaching and learning in schools. Consequently, teachers' professional development became another issue as teachers suffer to teach students and continue developing professionally due to being unskilled in using technology effectively.

Virtual communication is a way where communication has become computer-mediated using videoconferencing, which is used as a substitution for face-to-face communication (Anderson, 2007). Due to the forced situation of COVID-19, many different aspects of society have adopted different virtual communication tools (Valverde-Macias & Llerena-Izquierdo, 2022). Mobile learning as a teaching and coaching methodology became useful for private and public organizations (Bondarenko et al., 2018; Llerena & Ayala-Carabajo, 2020). It has been used to conduct professional development for educators, allowing them to virtually fulfill their roles as educators (Llerena-Izquierdo & Atiaja-Balseca, 2021). Online professional development allows teachers to continue learning via information communication media (Tuong & Murray, 2020).

Online interaction spaces require the use of resources, applications, and meaningful activities (Llerena & Ayala-Carabajo, 2020). In order to successfully implement online professional development, instructors should be skillful in using technology, enhancing participants' engagement, and ensuring their presence online. The virtual communication tools used in this study are Edmodo, Zoom, WhatsApp, and emails. It has been stated that these tools allow greater accessibility to participants from anywhere using their devices to create an effective learning experience through mobile learning (Agarwal et al., 2021; Llerena-Izquierdo, 2021).

The study aims to examine the effectiveness of virtual communication used in the engagement of participants in a professional development training program and their perceptions. The following question and sub-questions guide this study: To what extent do the usefulness of topics presented and the ease of using virtual communication impact participants' attitudes and engagement in an online professional development program?

1. What are the educators' attitudes toward virtual communication in an online professional development program?
2. How do using technology and the usefulness of topics influence participants' engagement in an online professional development program?

The paper begins with this first introduction section and background to the study. This is followed by a literature review focusing on virtual communication and recent research about its importance in education. The theoretical framework and context of the study are presented after that. This is followed by methodology, results, and discussion sections. Finally, the paper ends with a succinct conclusion and some implications for future research.

LITERATURE

Online Professional Development via Virtual Communication

Bodalev (2011) defines virtual communication as a computer-based and remote interaction between two or more people. In the last two decades, this has become a widespread phenomenon that individuals rely on and integrate with different aspects of everyday life. Its presence has also made its way into the realm of education (Baeva, 2016). Furthermore, virtual communication has facilitated the transmission of knowledge in a digital mode, uniting participants from different places in one area (Loode, 2021).

Online training has gained more popularity in the last decade as it presents easier access, gives trainers larger outreach, provides a flexible milieu for learning, and also provides participants with a chance to network and collaborate with other individuals in the field (Lay et al., 2020; Kummel et al., 2020). This online teacher training trend has become more evident during the COVID-19 pandemic, as these virtual sessions have transformed from an option to a necessity (Hartshorne et al., 2020). As a result, there is now "an entirely new level of urgency" for planning and participating in such sessions based on virtual platforms and communication (Lay et al., 2020, p. 2).

To that end, today's teacher professional development has no longer become solely reliant on face-to-face interactions and has been extended to online platforms, where teachers can be together in a virtual environment, share insights and receive training from other professionals (Truong & Murray, 2020). This does not only impact teachers and help them enhance their skills; it also affects overall school practices and the community as a whole as educators discuss problems and find practical solutions (Al-Qahtani, 2019).

The virtual communicative interactions between the trainer and learners can be conducted synchronously (meeting virtually in real-time using live online sessions, active web cameras, online discussions, feedback, and interactive presentations) (Biase, 2020) or asynchronously (not meeting at the same time but communicated at different points of time according to each one's availability) (ElSayary, 2023a; Tuong & Murray, 2020). The importance of professional development in education is highlighted when the teacher's role in such an environment is more challenging and requires adequate skills to assist students and lead to better academic achievement (Chitiyo et al., 2019). Effective virtual communication led to teachers' acceptance and engagement in online professional development, where they exhibited positive attitudes and motivation (Wasserman & Migdal, 2019). Some advantages of online engagement in professional development are learners' determination of time, place, and pace of learning (Johnson & Palmer, 2015). The National Research Council (NRC) (2007) also mentioned the advantages of online professional development, including flexibility and versatility, a community of professionals, accountability, and retention.

Despite these advantages, problems occur, such as the lack of social interactions in online settings and unskilled participants using technology. Truong and Murray (2020) mentioned obstacles to online professional development that may make some teachers prefer face-to-face training, such as feeling isolated and disconnected from the world around them. Although virtual communication can reduce social anxiety, many learners feel demotivated by the lack of personalized feedback in online courses (Tuong & Murray, 2019). In addition, the NRC (2007) stated that the obstacles to online teacher professional development include lack of knowledge, support from administrators, access to technologies, time, financial and parental support, materials, support from higher education, and changes in teachers' beliefs and practices.

Virtual training creates an opportunity for teachers to continue receiving the development they need, and this is particularly vital in specific professional development programs. Teachers need to feel more competent and have more self-efficacy, thus supporting students, enhancing their engagement, and providing suitable practices (Stadler-Heer, 2019). Making online training accessible to teachers leads to academic reform and ensures all learners receive the support they need (Wasserman & Migdal, 2019). Truong and Murray (2020) identified obstacles to online professional development to include: course features (heavy dependence on technology, isolation, lack of constructive feedback), individual differences (technology self-efficacy and self-regulation skills), and socio-cultural factors (well-established value of a model teacher). Effective communication not only enhances participants' cognitive, social/emotional, and behavioral engagements (Borup et al., 2020) but also leads to a positive attitude towards using technology, usefulness, and ease of use (Truong & Murray, 2020). When teachers are given the right guidance on educating learners, the more experienced and trained they are, the better student learning and the more successful the classroom experience (Hills & Sessoms-Penny, 2021).

Attitudes Toward Online Professional Development

Online professional development is a mode of learning that allows participants to continue their learning via information communication media without the need to meet their instructors in person (Rogers, 2001). Positive attitudes toward using technology greatly influence the continuation of online professional development (PD). Attitude is defined as an individual's feeling (ranging from a positive value to negative

prejudice) toward a person, group, object, or concept (Kazdin, 2000). Teachers' attitudes are considered a factor in their participation and engagement in professional development (ElSayary, 2023b; Torff, 2018). Previous studies categorized teachers' attitudes into four main aspects: importance and usefulness, benefits, enjoyment, and behavior engagement (Stan et al., 2013; Torff & Byrnes, 2011; Truong & Murray, 2020). It was stated that the more experienced teachers, mainly those who teach higher grades, are not highly engaged in PD (Truong & Murray, 2020).

Although few studies mention the teachers' attitudes and engagement in online professional development, none measured external factors such as COVID-19. Some studies reported positive results in measuring teachers' attitudes toward technology-assisted PD, such as ease of use, behavioral engagement, usefulness, anxiety, and affection (Kao et al., 2014; Wasserman & Migdal, 2019). Other positive results were reported in a previous study that measured teachers' evaluation components of online PD to include course effectiveness, learning environment, attitudes toward technology use, and course assignments (Wasserman & Migdal, 2019). Another study stated that the role of technology is essential in online PD (Truong & Murray, 2020). Furthermore, it was highlighted that teachers' confidence in technology significantly affects their attitudes toward continuing online PD (Kao et al., 2014). Conversely, some studies stated the challenges and obstacles of online PD that negatively affect teachers' attitudes. A study by Truong and Murray (2020) stated that course features, individual differences, and socio-cultural factors could negatively affect teachers' isolation, heavy dependence on technology, self-efficacy, and self-regulation. Although these studies mentioned the positives and negatives of teachers' attitudes and engagement in online PD, none of them studied the impact of COVID-19 as an external factor that might significantly influence teachers.

Theoretical Framework

The Technology Acceptance Model (TAM) proposed by Davis (1989) is a theoretical framework to explain how users accept and use technology effectively. The model suggests that users' decision to use or reject a particular technological application may be influenced by other factors such as attitudes toward technology use, usefulness, and ease of use (Davis, 1989). The model acknowledges the role of environment and external variables that led to the users' beliefs and attitudes, which indirectly influence their acceptance and engagement of using technology (Truong & Murray, 2020). The effective use of virtual communication during and after the pandemic of COVID-19 in online PD is considered an external factor that might lead to positive attitudes and engagements. As shown in Figure 1, the usefulness and ease of using technology due to external factors can lead to a positive attitude toward using technology that enhances participants' engagement.
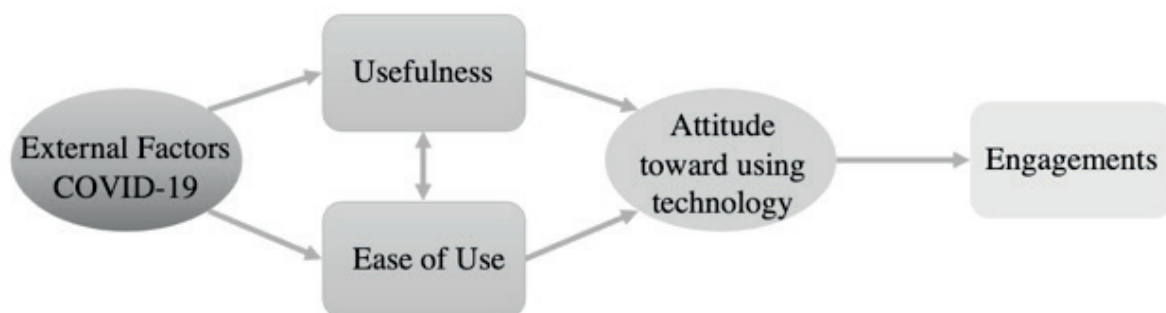

Figure 1. The developed framework used to guide the study was adapted from Technology Acceptance Model (TAM) by Davis (1989)

Other frameworks that enhance learners' engagement are also introduced. For instance, Moore's (1989) interactions (student-content, student-teacher, and student-student) were introduced to influence learners' environment in online learning. After paying attention to student-student interaction and collaboration in online learning, the Community of Inquiry (CoI) framework was introduced (Garrison et al., 2000). The

CoI framework has a significant positive impact on students within online learning. However, it has been criticized for being efficient in online learning only and not for the blended learning approach (Archer, 2010). The ACE framework is an effective framework that explains the role and interaction of relationships and personal communities in online and blended learning (Borup et al., 2020). Learners' affective, cognitive, and psychomotor engagements increase when supported by others within their zone of proximal development (Vygotsky, 1978).

Although all the previous theories were developed and used by different researchers, no framework focuses on technology acceptance by users due to the challenges and external factors faced. This study is guided by the developed framework adapted from the TAM model for the following reasons: it targets technology usage and usefulness, investigates the influence on participants' attitudes, and studies the reasons behind being engaged or disengaged from using technology, especially in online PD.

Context of the Study

Al Jalila Foundation (AJF) is a non-profit organization founded in 2013. One of its main initiatives is the Ta'alouf Inclusion Special Education Teacher Training Program which aims to train teachers, promote inclusion, and support children with special educational needs and disabilities and their parents. Sixty-three participants were drawn from 15 schools across the UAE, including teachers, school leaders, learning support assistants, social workers, and department heads.

Different virtual communication modes were conducted to enhance participants' online PD and ensure successful implementation. Participants received 24 hours of virtual training sessions on numerous topics related to inclusive education and special educational needs and disabilities, such as inclusion laws, the gifted and talented, learning difficulties, physical disabilities, intellectual disabilities, Attention Deficit Hyperactivity Disorder (ADHD), hearing/sight impairment, and Autism Spectrum Disorder (ASD).

Furthermore, AJF partnered with one of the federal higher education institutions in the country to provide each participant with three hours of virtual mentoring, and 13 faculty members from this university took part in this endeavor. Central to mentoring is keeping mentees on track with the portfolio, goal setting, confidence building, and giving participants a safe space to consider their teaching practice.

In order to attain the program certificate, participants had to present e-portfolios that included assignments related to topics covered in the training sessions. In those e-portfolios, participants were to apply what they learned within their schools, documenting their reflections and applications, and the aforementioned faculty then marked their work according to a preset rubric.

In addition, participants were to attend three 90-minute online Professional Learning Community (PLC) meetings, and the aim was to help these educators understand what research discusses about inclusion and how this research can be used as a problem-solving tool in inclusive settings. Participants were asked to set up their PLCs, discuss what they believe about inclusion and children of determination, and set realistic goals for inclusion. Finally, participants were to present a work plan for inclusive education that can be suggested and applied in their schools.

Due to the pandemic, all these aspects of the program were based on Zoom calls, Edmodo, WhatsApp, and emails; thus, all communication with the training lead, mentors, and PLC facilitator was purely virtual.

METHODS

This study employed a concurrent mixed-method approach to extend the breadth and depth of different inquiry methods (Creswell, 2014). It was suggested to collect multiple data (quantitative and qualitative) to integrate the results in order to understand the phenomenon (Johnson & Christensen, 2014). The rationale for using quantitative and qualitative data is to seek clarification of the results from one method with the results of another.

Participants

The study participants are educators with different specializations: teachers, social workers, and learning support educators working in private and governmental schools. Around 63 educators participated in the AJF program. The criteria set for the sample to participate in the study were defined as: (i) should attend the online inclusive professional development, (ii) should be in direct contact with students of determination, and (iii) should be willing to participate in the study. Accordingly, the sample size selected is n=23 from participants who met the criteria from different emirates across UAE. Table 1 mentioned the description of participants to present the gender, age group, years of experience, and current positions. Of the participants, 8.7% (2) were males and 91.3% (21) were females. For the age group, 4.35% (1) were 20-25 years, 17.39% (4) were 26-30 years, 47.38% (11) were 31-40 years, and 30.43% (7) were 41-50 years old. Regarding the years of experience, 8.7% (2) had 0-2 years, 30.43% (7) had 3-5 years, 43.48% (7) had 6-10 years, and 4.35% (1) had 16+ years of experience. Finally, it was reported that 4.35% (1) was social worker, 86.96% (20) were teachers, and 8.7% (2) were learning support educators.

Table 1. Description of the sample

Description of the sample (n=23)	Data Presented
Sample Gender	Male (8.7%; 2)
	Female (91.3%; 21)
Age Group	20-25 years (4.35%; 1)
	26-30 years (17.39%; 4)
	31-40 years (47.38%; 11)
	41-50 years (30.43%; 7)
Years of Experience	0-2 years (8.7%; 2)
	3-5 years (30.43%; 7)
	6-10 years (43.48%; 7)
	16+ years (4.35%; 1)
Positions	Social workers (4.35%; 1)
	Teachers (86.96%; 20)
	Learning support Educator (8.7%; 2)

After completing the survey, an email was sent to participants to thank them for their participation and to ask if they were willing to participate in the interview. The final sample selected for the interview was 14 participants.

Instrumentation

Teachers' Survey

A survey is used to collect quantitative data from the participants about their perceptions of virtual communication in an online inclusive professional development program. The survey consisted of two sections: demographic information and closed-ended items asking participants about their perceptions. The second section featured the following responses: 5=Strongly agree, 4=Agree, 3=Neutral, 2=Disagree, and 1=Strongly disagree. The items were distributed with codes for each type of engagement (i) cognitive (4 items), (ii) social/emotional (4 items), and (iii) behavioral (4 items) to form 12 items in total.

The survey was sent to two educational specialists in inclusion, technology, and education for content validity. They were asked to give their opinions on (i) the alignment of the instrument with the study's purpose, (ii) whether the items are appropriate to each section, (iii) the accuracy of the language used and the translation. Suggestions received from the experts were about rewording some items and removing three items. Accordingly, the final version of the survey in this study consisted of 12 items and four demographic information questions. The internal consistency coefficient (Cronbach's Alpha) was used for the reliability

test. The reliability coefficient for the sub-sections was between 0.70 and 0.88, which is considered suitable for the study. After assuring the instrument's reliability, the survey was administered to the educators through a web survey. The cognitive engagement is calculated to be $\alpha = 0.7$, social/emotional engagement ($\alpha = 0.72$), behavioral engagement ($\alpha = 0.88$), and the total items' Cronbach's Alpha is 0.90. Descriptive statistics were used to analyze the survey results, including mean and standard deviation.

Semi-structured Interview

The researchers developed the interview protocol, which comprises five semi-structured questions. The interview was conducted with open-ended questions to understand the phenomenon more deeply. The questions were sent to two educational technology and education experts to determine the face validity, clarity, and alignment with the study purpose. The experts agreed on the questions with slight changes in the language. Thus, a few changes in the language were applied accordingly, and two questions were canceled as they were not within the scope of the study. The final version of the instrument was piloted with other teachers and their positive comments were noted. According to the feedback, the total number of interview questions was three. No further changes were made to the final version. The questions aimed to explain how virtual communication impacted educators' attitudes toward usefulness and ease of using technology in an online professional development program.

Procedure

The researchers sent the consent forms to all participants at the beginning of the study, and a full explanation of the purpose was provided. The data was collected concurrently, with quantitative data from the survey and the qualitative data from the interview. The survey was designed to address the first question of the study: What are the educators' attitudes toward virtual communication in an online professional development program? The survey was sent through a web survey link. A descriptive statistic was used to present the mean and standard deviation. In addition, the researchers used the Handal et al. (2013) questionnaire score range of the means to explain the results.

Table 2. Questionnaire score range (Handal et al., 2013)

Score Range	Description
1.0 < x < 1.5	Very low
1.5 < x < 2.0	Low
2.0 < x < 2.5	Moderately low
2.5 < x < 3.0	Slightly below average
3.0	Average
3.0 < x < 3.5	Slightly above average
3.5 < x < 4.0	Moderately high
4.0 < x < 4.5	High
4.5 < x < 5.0	Very high

The semi-structured interview was conducted simultaneously to address the study's second question: How do using technology and the usefulness of topics influence participants' engagement in an online professional development program? Interviews were held for 30 – 40 minutes, with an average interview time of 35 minutes. The results were analyzed using the phenomenological approach to describe the teachers' experiences using virtual communication and how it impacted their learning.

The results of both data were represented separately and merged in the discussion section to fulfill the study's main purpose, which is to investigate the effective use of virtual communication in enhancing educators' engagement in an online inclusive professional development program.

RESULTS

Teachers' Survey Results

The survey was conducted at the end of the workshop to understand the educators' perceptions of using virtual communication in an online inclusive professional development program. The survey data is categorized based on the framework of the study to include cognitive, social/emotional, and behavioral engagements. Figure 2 shows a comparison between the means of the categories. The mean score for cognitive engagement (mean=4.66), social/emotional engagement (mean=4.63), and behavioral engagement (mean=4.60) are considered to be very high, according to the Handal et al. (2013) scale.
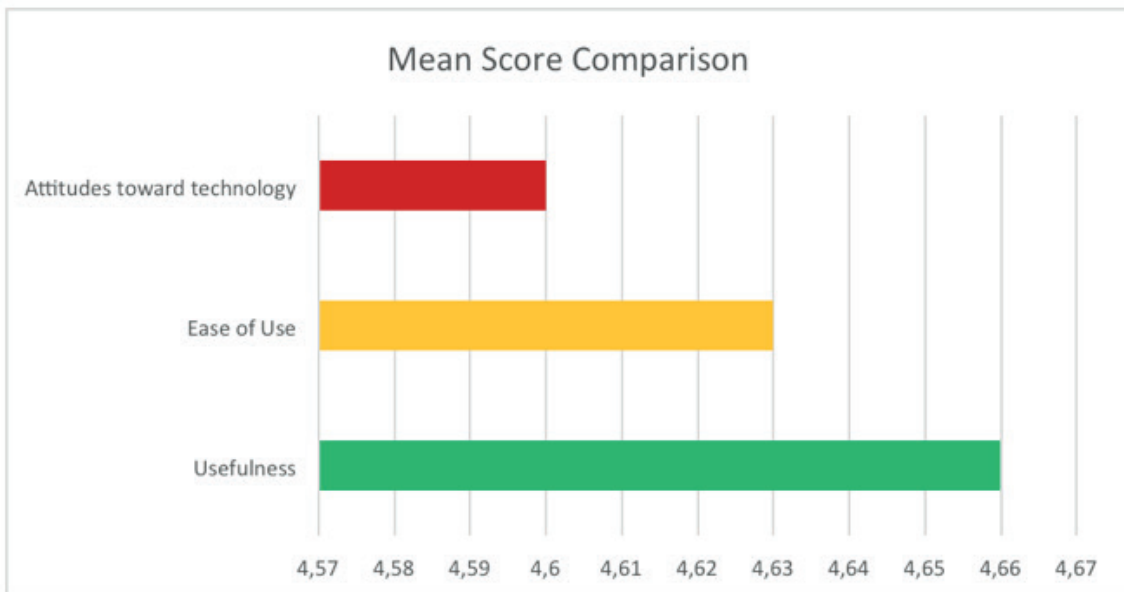

Figure 2. Comparison between the means of the Attitudes toward technology use, Usefulness, and Ease of use

The survey results are analyzed and categorized in Table 3 for the attitudes toward technology. The results show that the mean scores of all items are considered to be very high according to the Handal et al. (2013) questionnaire score range. However, the item related to teachers' confidence to teach (or manage) learners with learning difficulties and disabilities in their classes shows a mean=4.43 which is high but considered lower than other items. In addition, the same item shows 8.70% disagreement about it, with a high standard deviation of 0.662. Another item about their preparedness to support special education needs children shows a disagreement of 4.35% in educators' responses.

Table 3. The mean and standard deviation of the Attitudes toward technology

ATTITUDES TOWARD TECHNOLOGY	N	Mean	Std. Dev.
The platform provided online materials and resources that prepared me to support learners	23	4.60	.583
The virtual communication with my trainer supported me to enhance my teaching methods to accommodate all learners' needs	23	4.69	.470
The online PD helped me to teach (or manage) learners with learning difficulties and disabilities in my class	23	4.43	.662
Through my engagement in online PD, I am prepared to create a positive classroom environment for all learners either online, blended, or face-to-face	23	4.69	.470

The survey results are analyzed and categorized in Table 4 for usefulness. The results show that the mean scores of all items are considered to be very high according to the Handal et al. (2013) questionnaire score range. However, the highest standard deviation is shown in the second item about teachers' belief that all teachers are responsible for inclusive education in schools.

Table 4. The mean and standard deviation of the Usefulness

USEFULNESS	N	MEAN	STD. DEV.
I have learnt a lot from participating in the Al Jalila Foundation program on inclusive education	23	4.69	.470
I believe that all teachers are responsible for online professional development that include topics such as inclusive education in schools	23	4.60	.722
I think the Al Jalila Foundation project (online PD) helped me to professionally develop teaching strategies about diversity and inclusion is my professional responsibility	23	4.69	.470
The Al Jalila Foundation project (online PD) helped me learn more about inclusive and special education	23	4.69	.470

The survey results are analyzed and categorized in Table 5 for ease of use. The results show that the mean scores of all items are considered to be very high according to the Handal et al. (2013) questionnaire score range. However, the item related to teachers' belief about working collaboratively with other stakeholders to meet the diverse needs of learners shows a mean=4.43, which is high but considered lower than other items. In addition, the same item shows 4.35% disagreement about it with a high standard deviation of .589.

Table 5. The mean and standard deviation of the Ease of use

EASE OF USE	N	Mean	Std. Dev.
The Edmodo platform which was used is user friendly and appropriate for the project	23	4.78	.421
I believe I can work collaboratively with other stakeholders online to meet the diverse needs of learners	23	4.43	.589
I feel that I learnt a lot from my engagement (advising, support, meeting) with my mentor	23	4.69	.470
I had effective communication with my mentor using different ICT tools (WhatsApp, Zoom, email, phone calls)	23	4.65	.486

Educators' Interview Results

Q1: Comment on the Usefulness of Technology Used in the AJF Program, such as: Edmodo, Zoom Classes, Emails, Whatsapp, Etc) Used in the AJF Program

Mentees confirmed that sessions they had using Zoom were interactive in synchronous sessions because the program facilitator used breakout rooms and encouraged participants to have discussions. In addition, they commented on the importance of live discussion.

> *Mentee 1: "I found the live online sessions very beneficial. In addition, all of Dr X's lectures and self-seminars were very engaging."*
>
> *Mentee 2: "We were meeting here on Zoom, which was really easy for all of us. It was easy, really, and Dr X used to encourage us to write on the chat. She used to put us in groups using Zoom, which was great. We met with mentees from other schools and discussed opinions and experiences; it was really good."*
>
> *Mentee 3: "We had fantastic Zoom meetings. I never had any problem with WhatsApp communication, and I used to have discussions with my mentees in Zoom sessions that we had. The technology was spot on."*
>
> *Mentee 4: "Being with us in the individual meetings, asking us and discussing with us. I mean you know when you discuss something is much better than you only giving information without talking or giving a chance for discussions. You know it is like when you give a student a huge amount of information while the students' brain had enough and won't understand anything new from you."*

These views differ from another mentee who felt that the Edmodo platform could have been used more effectively.

> *Mentee 5: "There was a need to have more interactions rather than having Edmodo for uploading documents."*

Q2: To what Extent has the Virtual Communication Experience in the AJF Program Prepared You to Teach and Manage Students with Learning Difficulties and Disabilities?

Mentees who participated in this study stated that they are well-prepared and have learned from each other during their experience in the AJF program. This allowed them to learn more about inclusive education topics. Most mentors created a WhatsApp group to help mentees communicate quickly and easily. One of the mentees pinpointed the importance of the WhatsApp group in sharing concerns, questions, and inquiries. Some of the responses are stated below:

> *Mentee 1: "As an educator, I have a practical experience in inclusive education. However, reading about inclusive education topics enabled me to learn more about these topics."*
>
> *Mentee 2: "The WhatsApp group helped provide extra materials, especially when we post any question on the group. In addition, we received videos, and there are things that I benefited from as I was reading before our next session."*

Other mentees supported these views and emphasized the important use of the WhatsApp group in reminding them of the due dates and responding to their questions and inquiries posted.

> *Mentee 3 added: "I am happy to be part of this program. The mentor made it easy for us because my experience in teaching is like only two years."*

Another mentee mentioned the importance of understanding others' points of view.

> *Mentee 4: "The positive thing is the fact that I could hear from others' point of view about different challenges they faced in their classes."*

Mentees assisted and supported each other whenever something related to the language or the template used for the portfolio.

Q3: What are Your Experiences (Challenges and Ease of Use) of Participating Virtually in the AJF Inclusive Education Professional Development Program?

Except for only two participants in this study, the rest confirmed that the learning platform used in the program, Edmodo, was very effective, easy to use, and user-friendly. They reported that it was effective mainly because it was easy for them to access the content. Some mentees reported no challenges using the platform, and one of the mentees explained why others might find it challenging.

Mentee 1: "The Edmodo, I have used it before in my previous schools. However, we used it on a bigger scale for the students and teacher interaction. So, I am well aware of the Edmodo platform, and it was not a problem at all. It was a cakewalk as I could access content easily."

Mentee 2: "The technology was superb, I think. It was nice. Edmodo was straightforward to use. It was very easy to access; you knew where everything was. That one platform we were using was enough, and it was easily accessible; it was not a problem. Everything was there labelled and organized properly. So, it was not a problem regarding the technology."

Mentee 3: "Edmodo is very easy to use and was excellent. I could download and print all the documents related to the program or, I could save all the information into a folder on my desktop. Whenever Dr X posted something new, I downloaded and kept in in a specific folder I made for the Program."

Mentee 4: "Actually, I like the platform we used to send the messages and course materials. I was using it for the first time, but it was very easy for me to find everything there. I really liked it."

Mentee 5 who used the platform for the first time said: "It was my first time that I used Edmodo. Edmodo is a very good platform and very useful I found it. Everything was categorized in a very proper manner, very easy to use, very user-friendly. Furthermore, I did not face any difficulties over there. We were being taught, not taught, but we were being briefed about how to use Edmodo and how to access the portfolios and the handouts and everything and uh, it was a very useful app, yes."

Mentee 6: "It [Edmodo] is excellent and very user friendly. In the beginning, we did not have any idea because it was very new to us. The instructor explained in the beginning and showed us how to use it; we used it when she was teaching. We also used it to upload everything; it was excellent."

DISCUSSION

The results show that cognitive engagement had the highest agreement in the mentees' survey. Their agreement follows this in social/emotional engagement. On the other hand, behavioral engagement is considered the lowest in their agreements. This is supported by a study by Broup et al. (2020), who stated that cognitive engagement is considered the highest in students' online learning. The following sections answer the study's research questions, highlighting the three types of engagement within each category.

Educators' Perceptions of Using Virtual Communication

All mentees felt that teaching about diversity and inclusion is their professional responsibility. However, mentees' responses about their beliefs that all teachers are responsible for inclusive education in schools are inconsistent. This is supported by the interview results, where there was inconsistency in the mentees' responses about whether or not Edmodo was used effectively, and if there was interactivity in using it. They added that it could have been utilized better as a learning platform, not only by sharing documents. A study by Baeva (2013) stated that virtual communication facilitated the transmission of knowledge in virtualized and digital forms. Conversely, mentees highlighted the importance of Zoom live sessions, allowing them to ask questions and discuss topics in more depth with their mentors. This is supported by the survey results, which mentioned that they had learned much in this program through the synchronous sessions. Previous researchers emphasized the importance of virtual communication, where educators can meet to share insights, discuss topics and problems, and find practical solutions (Matzat, 2013; Vrasidas & Zembylas, 2004).

All mentees believed the Edmodo platform was user-friendly and appropriate for the project. However, some mentees highlighted that it was used only for sharing documents without interactivity. They also believed that they could work collaboratively with other stakeholders to meet the diverse needs of learners through effective communication tools such as WhatsApp, Zoom, emails, and phone calls. However, a few mentees disagreed on the same point. During the interviews, the mentees emphasized that they were keen to understand others' views about their experiences in inclusive education. This is emphasized by other researchers who pointed out that virtual communication provides a flexible milieu for learning and provides participants with a chance to network and collaborate with other individuals in the field (Darling-Hammond et al., 2017; Lay et al., 2020; Vrasidas & Zembylas, 2004). Some mentees mentioned that they

were new to teaching and had 0-2 years of teaching experience; they were satisfied with the support and coaching received from their mentors. Jørgensen and Orngreen (2017) emphasized that the online training accessible to teachers leads to academic reform and ensures that all learners receive the support they need.

Most mentees agreed that they are prepared to support children with special education needs. However, the minority disagreed about the same point. Also, most mentees felt confident in teaching or managing learners with learning difficulties and disabilities in their classes. Previous studies mentioned that virtual training in inclusive professional development programs allows teachers to be more competent, develop their self-efficacy, and provide special needs students with suitable practices (Marin, 2014; Stadler-Heer, 2019). However, it was mentioned in the interview that a minority of mentees felt that they were not prepared and did not feel confident to support and manage children with special education needs. It is important to understand that mentors should understand that teachers have diverse needs, exactly like students, and it is important to understand how to meet their needs while educating them. It was mentioned in previous studies that when teachers are given the right guidance on educating learners with special needs, the more experienced and trained they are, the better student learning is and the more successful the classroom experience becomes (Hills & Sessoms-Penny, 2021, Roberts & Simpson, 2016).

The Use of Virtual Communication in Enhancing Learners' Attitudes Toward Technology, Usefulness, and Ease of Use

Regarding attitudes toward technology use, all mentees agreed that they could change their teaching methods and accommodate learners with special education needs. They were also prepared to create a positive classroom environment for all learners. This is in agreement with a previous study that stated instructors could facilitate learners' positive attitudes and engagements through following up, monitoring who missed the class, announcements, reminders about due dates, and reaching out to help learners who do not submit their work on time (Meda & ElSayary, 2021). In the interviews, mentees emphasized the easy use and access of the Edmodo platform. Some mentees stated that they are prepared to support children with special education needs, while the minority disagreed with this statement. Various researchers emphasized that this impacts teachers, helps them enhance their skills, affects overall school practices, and the community as educators discuss problems and find practical solutions (Matzat, 2013; Vrasidas & Zembylas, 2004). Some teachers also mentioned that they were confident teaching (or managing) learners with learning difficulties and disabilities in class, while the minority disagreed. Kaur (2019) emphasized educators' commitment to understanding students' differences, sharing knowledge with peers, and pinpointing the right strategies to use with children with different needs. Educators have achieved this goal through their online professional development program training.

Regarding usefulness, all mentees agreed they had learned much from participating in the AJF program, where they engaged in synchronous discussion sessions. Baeva (2013) emphasized that virtual live communication has facilitated the transmission of knowledge in virtualized and digital forms. This is also highlighted in the interviews with them. All mentees believed that the AJF project taught them more about inclusive and special education, where they now felt responsible for inclusive education in their schools. As mentioned in the interview, this occurred due to their engagement with their mentors in live online sessions through Zoom. This is aligned with Borup et al. (2020), who emphasized the important role of instructors in providing appropriate scaffolding, using effective media, apps, and teaching resources, asking open-ended engaging questions that enhance students' curiosity, and raising expectations about students' engagement in discussions. The interactivity they received in these sessions was beneficial, as there were discussions between mentors and mentees. Many researchers highlighted that the diverse communication tools allow participants to have an effective learning experience using their devices regardless of location (Agarwal et al., 2021; ElSayary, 2023a; Llerena-Izquierdo & Valverde-Macias, 2021).

For ease of use, all mentees agreed they had learned much from their engagement with their mentors. Interesting results were highlighted during the interview with the mentees, where they mentioned that they have learned from each other and their mentors, especially while using the WhatsApp groups. A study by Hartshorne et al. (2020) pointed out that the online teacher training trend has become more evident during the COVID-19 pandemic, as these virtual sessions have transformed themselves from an option to a necessity. Furthermore, all mentees agreed that using different virtual communication tools such as

WhatsApp, Zoom, email, and phone calls was easy and effectively enhanced their learning. This agrees with previous studies highlighting that learners who do not receive adequate communication can feel isolated and disconnected from the course (Garrison et al., 2020; Symeonides & Childs, 2015). This is also supported by mentees' responses in the interview, where they highlighted that the tools used for communication were fast, easy, and effective, especially the use of WhatsApp groups created by mentors for their mentees. The different tools used allowed educators to be engaged in advising, support, and meeting sessions with their mentors and peers. This aligns with previous studies that stated that mobile learning as a teaching and coaching methodology became helpful for both private and public organizations (ElSayary, 2023b; Bondarenko et al., 2018; Llerena & Ayala-Carabajo, 2020).

CONCLUSION AND RECOMMENDATIONS

This study aims to investigate the impact of the effective use of virtual communication on an online professional development program through the lens of teachers' attitudes. The study results revealed teachers' positive attitudes toward using technology due to its ease of use and the usefulness of the topics presented. This led to being engaged and continuing to develop professionally. The online professional development program was conducted by the AJF during the quarantine of COVID-19 to present topics related to inclusive education. Educators felt that the program was useful by being involved in discussions, asking questions, watching real-life classroom videos, etc., through different tools such as Edmodo, WhatsApp, Zoom, emails, and phone calls. The ease of use was explained in communication with their mentors and peers through WhatsApp as a fast and quick tool. In addition, the synchronous and asynchronous sessions were where educators were involved in enhancing their engagement and learning. Finally, they had a positive attitude toward the use of technology in implementing what they had learned in their classrooms. They provided examples of their work as evidence of their positive attitudes, engagement, and active learning.

One of the limitations of this study is the need to interview mentors to gain in-depth insight into the effectiveness of the online inclusive program from mentors' perspectives. It is highly recommended to consider the mentors' perceptions and practices in future studies where data triangulation will clarify the way of mentoring and coaching. In addition, the mentees' portfolio analysis could be an additional tool that will add another lens to the study, which can be considered in future studies. It is also recommended to evaluate the mentees' reflections and try to understand the level of reflection they showed in their portfolio due to its positive impact on their learning and engagement. Another study limitation is the low number of participants, as the results cannot be generalized to the whole population. It is recommended to repeat the study with a large number of participants. In addition, it would also be preferable to include more male teachers in the study as this study had a limited number of male participants.

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