Uplifting the well-being of teacher candidates through virtual exchange during COVID-19

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Abstract

COVID-19 is a time of adversity for college students. Different universities have taken different measures to uplift student well-being. Virtual exchange was a tool that improved student well-being, relieved distress, and helped students focus on their studies. This virtual exchange that partnered teacher candidates outlines how effective this measure was for the participants during COVID-19. This study explores how virtual exchange impacted the well-being of teacher candidates when their university classes were moved online. The data for this research were obtained from a questionnaire, with qualitative and quantitative components, given to the teacher candidates of two universities at the end of the semester regarding their experience interacting virtually throughout the semester. Interacting with a virtual partner when all the classes moved online when less in-person interaction was available benefited students in uplifting well-being in terms of Positive emotions, Engagement, Relationships, Meaning and Purpose, and Accomplishment (PERMA).

Keywords virtual exchange; teacher candidates; teacher education; positive psychology; PERMA.

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1.   Introduction

COVID-19 has been a time of distress for college students due to the fear of being infected by the disease, health concerns about family members, and unemployment of parents (Schlesselman, Cain, & DiVall, 2020). Further, social distancing, self-isolations, and lockdown were unavoidable measures taken to reduce the spread of COVID-19 which had a negative impact on mental health well-being (Mair et al., 2021). Most importantly, being healthy not only means being free of diseases, but it also means ensuring one's physical, mental, and social well-being as a whole (Meo et al., 2020). Hence, it is imperative that universities adopt measures to ensure student well-being.

Different universities have taken different measures to uplift student well-being during the time of COVID-19 because a single measure cannot address the needs of all students. However, as social distancing has been the norm since the beginning of the pandemic, socialization through virtual means improved the well-being of pharmacy students (Schlesselman et al., 2020). Similarly, a virtual exchange offered ways to sustain the well-being of teacher candidates in terms of positive emotions, engagement, relationships, meaning and purpose, and accomplishment. Students were able to stay positive during the pandemic as they could communicate with a virtual partner when in-person contacts were minimalized as classes moved online and social distancing was imposed.

Students invested their time interacting with a virtual partner and learned about another country and culture, improved learning through technological tools, and second language (L2) learners enhanced their communication skills in English. Further, virtual exchange served as a platform for students to build relationships. Moreover, participants were able to continue a component of their course work and share their knowledge with another student (Richardson, Maeda, Lv, & Caskurlu, 2017). The PERMA model was selected as we could analyze student well-being from different perspectives and support students to enhance well-being in an array of areas i.e., positive emotions, engagement, relationships, meaning and purpose, and accomplishment.

This manuscript discusses partnering teacher candidates in two universities and highlights student well-being in terms of positive emotion, engagement, relationships, meaning and purpose, and accomplishment. Interacting with a virtual partner when all the classes moved online and less in-person interaction was available benefited participants. The purpose of this manuscript is to show how virtual exchange relieved stress in participants during COVID-19 and contributed toward uplifting participant well-being.

2.   Literature review

2.1.   The application of Seligman's PERMA model in educational contexts

Seligman initiated a new focus in psychology which is called positive psychology (Compton & Hoffman, 2020) with the intention of exploring what works the best for people to succeed (Sheldon & King, 2001). It defines well-being as "positive and sustainable characteristics which enable individuals and organizations to thrive and flourish" and it is central to positive psychology (Well-being Institute, 2021). Applying the knowledge of well-being contributes to boosting the full potential of people and institutions (Well-being Institute, 2021). Researchers use well-being interchangeably with satisfaction, happiness, quality of life (Kun, Balogh, & Krasz, 2017), subjective well-being, thriving, and flourishing (Butler & Kern, 2016).

Seligman (2011) developed a well-being model which includes five domains. Together these five domains impact well-being. Some of these five domains of Seligman's well-being model are measured subjectively whereas the others are measured objectively (Seligman, 2011). This model of well-being is called PERMA.

The PERMA model is applied to different domains such as learning and life skills, proactive health care, business and working lives, design, public attitudes and media, and social policy (Well-being Institute, 2021). Another domain where the PERMA model is largely applied is education. For example, Tansey et al. (2018) applied the PERMA model to a group of 97 college students with disabilities because the graduation rate of students with disabilities is low. It was discovered there is a connection between the PERMA model and important factors to consider when helping students with disabilities to adjust to college life. Developing positive emotions, forming good relationships, increasing meaning and purpose, improving engagement, and building a sense of accomplishment have a positive impact on improving life satisfaction of students with disabilities. Hence, applying the PERMA model can help them to overcome negative impacts on their subjective well-being and improve their adjustment to college life.

Moreover, the use of the PERMA model as a theoretical framework in a music learning context in a university helped teachers to realize that learning music is stressful for students as teachers were very controlling (Bonneville-Roussy, Hruska, & Trower, 2020). Some students suffered from anxiety and depression. This application in the music learning context aids teachers in identifying the usefulness of support of autonomy in increasing students' well-being. Most importantly, as a precaution, teachers could enhance their practice with tools and skills needed to address mental issues and increase student well-being.

Seligman's PERMA model has the potential to investigate the well-being of students in positive education (Kern, Waters, Adler, & White, 2014). They found that subjective and multidimensional perceptions of well-being such as the PERMA model contribute to the success of students when inculcating them with values to mold them into successful adults. For example, initiating peer programs can develop students' ability to make social relationships, if they are hesitant in forming them.

The PERMA model is not confined to application in one learning context, but it is used in diverse learning settings and diverse subject teaching and learning contexts. Additionally, the use of the PERMA model as a theoretical framework helps educators to identify key elements in creating an educational setting that contributes toward student well-being to improve optimal learning outcomes. Another learning context where the PERMA model is applied as a theoretical framework is Second Language Acquisition (SLA) studies. Language anxiety has been a major topic that gained the attention of SLA researchers for nearly four decades (Liu, 2019). However, positive emotions such as happiness, positivity, and meaning also play an important role in language learning due to the fact that it is a gradual process that requires persistence, hope, and resilience (Macintyre, Gregersen, & Mercer, 2019; Oxford & Cuéllar, 2014). This impact of the combination of negative and positive emotions on SLA gained the attention of researchers interested in the positive psychology movement (as cited in Dewaele & Dewaele, 2017).

Oxford and Cuéllar (2014) affirmed the usefulness of the PERMA model as a theoretical framework in SLA because "language learning can be a major journey in self-discovery, rich in positive emotions tied to experiences of engagement, relationship, meaning, and accomplishment" (p. 173). In this research, the narratives of five Mexican students learning Chinese as a second language revealed that despite the rise of negative emotions such as anxiety, grief, and frustration, their journey of learning was also accompanied by positive emotions which motivated them to learn. Applying the PERMA model helped the researchers to view and understand the narratives in terms of positive emotions, engagement, relationships, meaning, and accomplishment, and offer necessary support to students to overcome the struggles in learning Chinese.

Further, Oxford and Cuéllar (2014) stress the need of the PERMA model to analyze journeys of both positive as well as negative language learning experiences of students. In their research, the PERMA model was applied to two students whose learning experiences were different: one student had a positive impact on acquiring English as a second language as he was supported all throughout whereas the other student's learning experience was negatively affected due to the insensitivity of a teacher toward the support she needed to strive in reading. The insights derived by applying the PERMA model to negative L2 learning experiences are helpful for educators to

remodel students' attitudes toward learning. Therefore, positive psychology provides English educators with tools which help language learners to acquire the language better.

Caprara et al. (2000) state that positive psychological characteristics have an impact on student academic achievement. Using the PERMA model as a theoretical framework in educational settings enables understanding and enhances student well-being when supporting students to flourish (Kern et al., 2014). Furthermore, Reid and Smith (2018) affirm that student perceptions of school climate and well-being are correlated. Specifically, students with a positive perception of an inviting school climate positively rated positive emotions, relationships, engagement, and accomplishment (Reid & Smith, 2018). Therefore, using the PERMA model as a theoretical framework provides educators with important implications to promote student well-being.

2.2.   Well-being of college students during COVID-19

COVID-19 has caused distress in college students due to the fear of getting infected by the disease, concerns about safety and health of family members, long stay at home, the loss of parents' income, etc. These reasons could affect college students' well-being negatively. Therefore, it should be the responsibility of administrators, faculty, and staff to ensure the well-being and academic success of students during COVID-19 by undertaking appropriate measures. For example, as Pather et al. (2020) have stated, "as we cope with this pandemic, being able to compromise, and adapt in practice and curriculum design and teaching delivery is important" (p. 294). Consequently, different universities could adapt different approaches to promote student well-being during the pandemic of COVID-19. For instance, the measures undertaken by an international university in Japan to promote student well-being are student-led communities, modules and elective classes, and advising services (Davies et al., 2020).

In addition, Schlesselman et al. (2020), propose activities and services such as exercise challenges, meditation, mindfulness sessions, virtual advising, Facebook groups, peer mentoring, and tele-counseling visits which fall under health and wellness, socialization, academic success, physical and mental health, and leadership and volunteering. Socialization is a common service adapted by these two universities because as Davies et al. (2020) point out, college students need to socialize during this time of adversity. The opportunities to build relationships are limited and students seek chances to connect with people to ensure their psychological well-being. Consequently, online learning sessions with friends using Zoom was a strategy adapted by students as a result of yearning for social interactions to ensure their psychological well-being. This study focuses on a virtual exchange that connected Teaching English to Speakers of Other Languages (TESOL) teacher candidates between two universities in the US.

2.3.   Virtual exchange and teacher education

Teachers' well-being appears to be an essential element in their performance and the well-being of the students they teach, according to research (Day, 2008; Day & Kington, 2008). Mercer, Oberdorfer, and Saleem (2016) note that one way to help teachers flourish is to support them in their professional roles and the professional well-being derives from the relationship between the individual and their perception of their environments. One way to support teachers' professional development is virtual exchange, or telecollaboration, which is a widely used tool which connects two groups of people internationally in an online platform for the purpose of intercultural exchange (O'Dowd, Sauro, & Spector-Cohen, 2020). Various challenges in virtual exchange have been identified, these include not only multifaceted aspects of pedagogical mentoring (O'Dowd et al., 2020), but also ways to assess intercultural competence (Dooly & Vinagre, 2021), as well as task design which requires consideration of numerous complex issues related to the online context in order to be effective (Guth & Helm, 2012). Nowadays, virtual exchange is adopted in different fields. Teacher education is one such field where virtual exchange is used to achieve different learning outcomes. Firstly, Hauck (2019) stresses the importance of digital literacy skills for graduates in the 21st century and the results of the study reveal how virtual exchange has the potential of achieving it. For instance, virtual exchange improves teacher candidates' "awareness and attitude towards technology use for formal educational purposes" (Hauck, 2019, p. 201). Moreover, teacher trainees in Germany and Poland improved their perception of the connection between technology and instructional decisions and technology-based learner tasks for English language learners during their virtual exchange (Kurek & Mueller-Hartmann, 2017). According to Dooly and Sadler (2013), the aim of teacher education should be to enhance student teachers with skills needed to be successful in the classroom. The virtual exchange carried out by Dooly and Sadler (2013) connecting teachers with students contributed toward achieving this goal. For example, it improved teachers' ability to "filter through advice" and "have confidence in her decisions" (p. 25). It is further stated that virtual exchange provides teachers with opportunities that are unavailable in real classrooms. Further, Hilliker, Loranc-Paszylk, and Lenkaitis (2020) discuss how a virtual exchange that partnered teacher candidates with English language learners served the purpose of a study abroad program for teacher candidates. It was an opportunity for them to analyze students' authentic language in terms of the linguistics topics (semantics, syntax, morphology, phonology, and pragmatics) that they were studying in class, which otherwise could not have been achieved inside the classroom. The virtual exchange partnered preservice teachers in Turkey and the US and serves as evidence that an intercultural exchange is an important pedagogical tool to solidarize student perceptions. Participants engaged in critical conversations about equity and social justice via virtual exchange and they ensured a better understanding of the topics. Dawson, Mason, and Molebash (2000) discuss how their exchange project created

an opportunity for preservice social studies teachers to discuss generic issues that appear in the classroom. They talked about classroom management, planning, grouping of students etc. Hence, connecting teachers via virtual exchange aids in better preparation of those candidates as they develop the skills and knowledge they need to succeed as teachers in real classroom settings. This study thereby answers the research question: How did virtual exchange impact the well-being of teacher candidates? Specifically, teacher candidates were asked how virtual exchange contributed toward their well-being in terms of five elements in Seligman's PERMA model: positive emotion, engagement, relationships, meaning and purpose, and accomplishment.

3.   Method

3.1.   Participants

The participants include 25 teacher candidates at public research universities on the East Coast of the US. All participants were enrolled in a course at their respective universities that focused on pedagogical use of technology. At one university all participants were TESOL teacher candidates pursuing a Master's degree and at the other university all participants were pursuing a Master's in curriculum design with a focus on instructional technology. The instructor for the courses is the first author. The other authors were not involved in the courses. Although most were teacher candidates, some participants had roles outside of the classroom. The virtual exchange was part of their graded course work. The study was carried out during the COVID-19 pandemic when all the classes moved online, and students' well-being might have been affected as a result.

3.2.   Procedure

The teacher candidates were partnered with one or two teacher candidates based on their availability. They interacted virtually via Zoom video conferencing (http://zoom.us) for at least one 15-minute session for six weeks during the semester. Every week they were assigned to discuss a picture of a classroom in a public school in the US (see Appendix A). They were assigned with pictures of classrooms from different time periods. All meetings were video recorded and uploaded to a shared Google Drive.

3.3.   Data collection

The data for this research were obtained from a pre- and post-questionnaire given to the teacher candidates of both universities at the end of the semester regarding their experience interacting

virtually[4]. Quantitative data were also obtained through a Likert scale questionnaire regarding participants' experience of the course before and during COVID-19. Qualitative data were obtained by asking teacher candidates how virtual exchange contributed toward their well-being in terms of five elements in Seligman's PERMA model: positive emotion, engagement, relationships, meaning and purpose, and accomplishment.

To answer our research question, how did virtual exchange impact the well-being of teacher candidates during the pandemic, we analyzed two sets of data. First, quantitative data collected from the pre- and post-questionnaire Likert scale questions which included the participants' ratings of their virtual exchange experience changed because of COVID-19. Second, qualitative data were obtained by asking teacher candidates open-ended questions as to how virtual exchange contributed toward their well-being in terms of five elements in Seligman's PERMA model: positive emotion, engagement, relationships, meaning and purpose, and accomplishment.

3.4. Quantitative data

In both questionnaires, the participants were asked to rate their experience related to the virtual exchange during COVID-19 on a scale of 0 (terrible) to 10 (excellent). Statistical analyses were completed on the pre- and post-questionnaire Likert scale questions using IBM SPSS Statistics 25.0. The ten-question pre-questionnaire (ten items; α=0.82) and post-questionnaire (ten items; α=0.88) that were used were found to be very reliable. These results show a high level of internal consistency and satisfy the generally accepted reliability threshold of about 0.70 (Nunnally & Bernstein, 1994). A nonparametric Wilcoxon sign-rank test was used to analyze the ordinal data obtained from the pre- and post-questionnaire Likert scale questions to find out if participants' ratings of their virtual exchange experience changed because of COVID-19. There was a significant difference between participants pre-and post-questionnaire ratings as seen in Table 1 below.

Table 1. The participants' ratings of their virtual exchange experience during COVID-19

	N	Mean	Standard dev	Minimum	Maximum	Percentile	Pre- and post-questionnaire ranking	
						25.	Z	-2.070a
VE pre	47	8.17	1,960	3	10	7.00	Asymp. Sig. (2-tailed)	p=0.28
VE- during	47	7.49	2,587	0	10	6.00		

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4. The study was approved by the IRB at the university in the US and all participants gave their informed consent online via Google Forms.

3.5. Qualitative data

As the participants were asked to rate their experience regarding the course before and during COVID-19, we explored if virtual exchange had a significant impact on participant well-being during COVID-19 when classes moved online. Seligman's PERMA model was used as a theoretical framework in this research.

Questions were based on student well-being during COVID-19 in terms of the five elements in the PERMA model: i.e. positive emotions, engagement, relationship, meaning and purpose, and accomplishment. NVivo was then used to find word frequencies in the questionnaire. First, the top 25 words were identified as participants have also mentioned their opinion regarding online learning in general. We only selected content words but not function words such as pronouns or fillers. The words were then coded by two authors and classified into the five groups corresponding to the elements in the PERMA model. The initial inter-rater reliability was 94.2%, the differences were resolved until the authors reached complete agreement (Table 2).

Table 2. Categorization of the most frequent three words into the elements in the PERMA model

PERMA element	Word / its frequencies/ weighted average	Example
Positive emotions	**Helped** word count: 23 Weighted percentage: 0.78%	Initially, I struggled with the virtual exchange. Mostly because my partner was much more comfortable with speaking Spanish. After the first meeting, I started writing down notes before every proceeding meeting that would help me have a better conversation in terms of the work we had to complete. Participant 18
	Positive Word count: 23 Weighted percentage: 0.78%	The virtual exchange introduced a bit of synchronicity into an otherwise asynchronous experience. It made a big positive difference in my feelings about the course. I would actually recommend that the professor consider making the final evaluation of each other's final projects virtual as well. Explaining our work to a new classmate in a teleconference would be much more engaging than writing a short discussion comment. Participant 4
	Enjoyed Word count: 20 Weighted percentage: 0.68%	I felt engaged during our Zoom meetings because it was my only class that still met and actually had conversations with classmates. Also, during the exchange because I enjoyed listening to someone else's ideas. Participant 19
Engagement	**Learning** Word count: 39 Weighted percentage: 1.32 %	I thought I was not going to be benefited with the virtual exchange. But at the end, it prepared to face this new way conducting learning through technological resources. Participant 11
	Engaging Word count: 30 Weighted percentage: 1.02 %	Engaging in coursework/readings/discussions/virtual exchange was meaningful and that's what kept my mind engaged and positive. Participant 5
	Discussions Word count: 25 Weighted percentage: 0.85%	Discussions over the photos in the exchanged were good to challenge my thinking and reach some consensus; felt engaged. Participant 24

Relationships	**Exchange** Word count: 28 Weighted percentage: 0.95%	I found the usefulness of virtual exchange and peer knowledge groups. Participant 14
	Virtual Word count: 24 Weighted percentage: 0.81 %	We did a lot of work with learning about the problems around the world and I got to see an interesting perspective on all of them because of the virtual exchange. Participant 8
	Interaction Word count: 18 Weighted percentage: 0.61%	I was satisfied with personal interaction during the virtual exchange with both Cliff and Janice. Participant 7
Meaning and purpose	**Connected** Word count: Weighted percentage: .54%	I enjoyed the virtual exchange because it allowed me to connect to two of my classmates in more meaningful ways than I have connected in all the discussions I have had in this academic program. Participant 11
	Think Word count: Weighted percentage: .51%	I thought the virtual exchange was positive, piqued my curiosity, and made me think about the ways school has changed. Participant 5
	Final Word count: 14 Weighted percentage: 0.47 %	I had a very hard undergraduate experience where I wasn't allowed to take the classes I wanted, wasn't allowed to research what I wanted, and when I finally did do research I got a lot of pushback and terrible grades and no support, etc. This course gave me an opportunity to be independent and talk about what I wanted to talk about and for others to see it, which was a breath of fresh air. Participant 16
Accomplishment	**Accomplished** Word count: 27 Weighted percentage: 0.91 %	After virtual exchange I actually felt accomplished as I learned a number of things, I didn't know about the school system in the US. Also, I think we did a great job on the Google Slide every week. I really like that output of our discussion. It wasn't only about achieving goals but learning new things as well. Participant 22
	Felt Word count: Weighted percentage: .85%	As this was a test course for a possible career turn I did feel accomplished in the sense that I felt I could hold my own and provide some insight and positive interactions in the field. Participant 2
	Completing Word count: 21 Weighted percentage: 0.71 %	I felt overwhelmed at the beginning of the course because I do not have as much background or experience in teaching English or learning languages as many of my classmates and due to the technology aspects of the course. Each time I successfully completed an assignment or engaged in group/partner work I felt proud of the progress I was making. Participant 13

4. Discussion

4.1. The impact of virtual exchange on the well-being of teacher candidates during the COVID-19 pandemic

In this section, both quantitative and qualitative results will be discussed in relation to our research question – how did virtual exchange impact the well-being of teacher candidates? As shown in Table 1, quantitative results in this study indicate a significant change in participants' views on their experience related to the virtual exchange because of COVID-19. An analysis of qualitative

results in this study provides additional insights and suggests that despite the difficulty participants had connecting with their virtual exchange partners, virtual exchange had a positive impact on participant well-being during COVID-19.

Virtual exchange was a method that improved participant well-being in terms of positive emotion, engagement, relationships, meaning and purpose, and accomplishment during COVID-19 and relieved distress in participants that helped participants to focus on their studies. COVID-19 is a time of adversity for college students (Schlesselman et al., 2020). Participants mention they were hit hard emotionally and health wise by COVID-19. They also discussed the distress caused by the loss of loved ones, unemployment, and the negative impact of the pandemic on their family members. As a result, these students were not excited with course work, but unmotivated and distracted. As these reasons could have a negative impact on student well-being, it is imperative that universities take measures to assure student well-being and academic excellence (Schlesselman et al., 2020). Virtual exchange was one such method that contributed toward uplifting participant well-being. Most importantly, it is noteworthy that the results of this study discussed in the following paragraphs resonate with study results conducted before the COVID-19 pandemic.

4.2. Positive emotions

In terms of positive emotion, most students' perspectives toward virtual exchange during COVID-19 was positive because interacting with people virtually during the semester when all the classes moved online and social distancing was advocated, contributed toward fostering pleasure, warmth, contentment, satisfaction, happiness, and the like (Seligman, 2011). The virtual exchange offered a space for participants to talk with someone in real time rather than participating in asynchronous, mostly through written, coursework. Additionally, as virtual exchange was an opportunity for participants to learn from each other, it kept their minds hopeful and positive. Further, as they could express their fears, share their ideas with someone, and listen to someone else' ideas, participants felt supported and understood. During the semester amidst COVID-19, these positive emotions encouraged students to perform better during the semester (Kun et al., 2017) and survive through the time of adversity (Fredrickson, 2001). Hence, virtual exchange uplifted participant well-being in terms of positive emotions during COVID-19 which helped participants to continue in their academic endeavors and stay positive and hopeful during the pandemic.

4.3. Engagement

When it comes to the next component, engagement, virtual exchange during COVID-19 made participants engaged and focused. Virtual exchange was part of graded coursework which included

creating a Google Slide with the virtual partner after the discussion and completing pre and post-Zoom worksheets. Thus, according to the participants, the series of tasks attached to the virtual exchange relieved their stress during the pandemic because participants felt engaged with work all the time. Finishing six weeks of virtual exchange was fulfilling for the students (Schaufeli, Bakker, & Salanova, 2006). Hence, even during a pandemic, participants engaged with virtual exchange and focused on accomplishing the assigned tasks rather than worrying about COVID-19. For example, students were eager to complete their work on time as their partners relied on them and this was a way to keep their minds off the pandemic. Most importantly, engaging in virtual exchange was not limited to completing tasks but students' perspectives toward the virtual exchange was positive as they valued their experience (Higgins, 2006) of communicating with another student. Participants enjoyed working with the partners from Turkey and learned about another culture, country, and people. It was a good opportunity to share experiences. For non-native speakers of English, it was a great opportunity to practice the English language and to practice learning through technological resources. The most frequent words used by participants to express their engagement with the virtual exchange were: working, learning, engaging, discussions, good, COVID-19, and great, which prove that participants' engagement in the virtual exchange was beneficial for them. Hence, virtual exchange contributed positively toward participant well-being in terms of engagement during COVID-19 which helped them to stay away from negativity.

4.4.   Relationships

With regard to the category of relationships, virtual exchange was perceived as a means of forming friendships. The COVID-19 pandemic was a crisis and a time of emotional stress for participants. Hence, it is a time when interaction and support were needed for students because personal interaction during the time was restricted due to social distancing. Even for those that may typically prefer less interaction with people, the virtual exchange gave them a platform to reach out to others (Reid & Smith, 2018) to survive this time of adversity. One of the most frequent words associated with relationships was 'friends'. So, virtual exchange was a space to build relationships with others because some participants were not able to interact with people outside the virtual exchange. As affirmed by students, virtual exchange was a source of learning new information (Christakis & Fowler, 2009) and achieving goals together during the semester. Therefore, virtual exchange uplifted participant well-being during COVID-19 in terms of relationships.

4.5.   Meaning and purpose

In terms of meaning and purpose, participants considered virtual exchange as meaningful to continue during the pandemic. They insisted on the value of virtual exchange as it allowed

them to connect with people, stay positive during the pandemic, and engage in learning. For example, virtual exchange connected classmates in a more meaningful way than in any other discussion. As affirmed by Diener and Seligman (2002), there is a connection between purpose and life satisfaction which was true according to participant experience with the virtual experience. Participants perceived virtual exchange as satisfactory due to its positive impact on their studies and life during the pandemic. For instance, the virtual exchange was designed with the purpose of preparing teacher candidates for online teaching. Some participants affirmed that they were not stressed continuing their academics during this difficult time as they engaged in something they considered purposeful. The virtual exchange was an opportunity to discuss the topics that were important to the participant and made them feel as if the things they wanted to explore were important. Finding meaning and purpose during times of difficulty helped students overcome negativity and stay positive (Diener & Seligman, 2002). Hence, virtual exchange uplifted participant well-being in terms of meaning and purpose during COVID-19 by engaging in something they perceived valuable.

4.6. Accomplishment

When it comes to accomplishment, virtual exchange was perceived as an accomplishment by participants during COVID-19. At this time of crisis, the authors were happy that participants carried on in this positive environment showing resilience, sustaining their well-being, and continuing their course work (Davies et al., 2020). Participants affirmed that they felt accomplished as they improved knowledge by interacting with other students, learned new things, and shared their knowledge. Participants had the opportunity to learn about the school system in the respective countries. Further, making friends with new people was also viewed as an accomplishment by some participants. Participants can now follow and friend one another on social media and further their friendships made during the virtual exchange. Participants also had a clinical component as they were able to discuss issues in teaching and learning with their partners. 'Accomplished' and 'completing' are two of the most frequent words associated with accomplishment which evinces that participants considered virtual exchange accomplishing during the pandemic.

5. Limitations

Some teacher candidates may not have expressed their opinions completely when responding to our questionnaire. We used both quantitative and qualitative data to try to elicit the participants' opinions about their experiences with virtual exchange during the pandemic in different ways. Coding was carried out to find common wording among answers. In future studies, video sessions

between participants could be analyzed to find out if participants have informal conversations about COVID-19 during their virtual exchange.

In addition, this study was devised as the global pandemic was unfolding. Although we had planned to collect data during this virtual exchange, like many facets of education we had to adjust as the semester moved to the online format. We noticed that some students were struggling with the uncertainty and isolation and talked about those issues during our class sessions. Therefore, we also felt it was important to explore this in our study. This study explored both quantitative and qualitative data. However, because the data was self-reported, participants may not have been as forthcoming with rating themselves and expressing their ideas.

6.   Conclusion

This virtual exchange that partnered teacher candidates in two different universities in the US outlines how effective this learning environment was for the participants during the COVID-19 pandemic. Interacting with a virtual partner when all the classes moved online and less in-person interaction was available benefited participants in uplifting well-being in terms of positive emotion, engagement, relationships, meaning and purpose, and accomplishment. Interacting with a partner virtually when in-person contacts were minimalized positively impacted fostering positive emotions in teacher candidates which thereby contributed toward the coursework being carried on during this critical semester. Engaging in the virtual exchange aided participants not only to focus on work and worry less about the negative things caused by the pandemic, but also to learn about how others were experiencing the pandemic. They also enhanced their knowledge about technological tools for classroom use. Besides, virtual exchange serves as a means of building relationships. Virtual partners became friends and had a common goal during the semester. They even learned new information from each other. In addition, participants affirmed that engaging in virtual exchange during the pandemic was meaningful as they shared knowledge about classrooms and the evolution of technology in their respective countries. They found out how their partners were implementing online education in their home universities. Further, participants perceived communicating virtually with a partner as an accomplishment because it helped them to improve themselves in terms of expanding and sharing knowledge and building relationships. Hence, virtual exchange relieved stress in participants during COVID-19 and contributed toward uplifting participant well-being in terms of positive emotions, engagement, relationships, meaning and purpose, and accomplishment. Nevertheless, even though it is found out that socialization through virtual means could improve participant well-being during the pandemic (Schlesselman et al., 2020), there is limited research on how virtual exchange can uplift participant well-being during the pandemic. Hence, further

research should be carried out exploring how virtual exchange could improve well-being during a time of crisis and the evidence presented in the data related to the participants' performances could be explored.

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Appendix A

Information about Telecollaborative Exchange

This semester, all students in this course will be participating in a virtual exchange. That means that you will be partnered with at least one partner from another university. During this virtual exchange, you will need to complete a number of activities, both individually and with your partner(s). These activities are part of your coursework and will count towards your overall grade. Therefore, all students must complete all weekly activities.

✓ Things to do before virtual exchange- In order to communicate with your peers, you will be using Zoom, a video conferencing software. It is a free software, and it can be downloaded.

In order to record your video sessions, you will need to do so from a computer. You will NOT be able to do so through your smartphone.

    ✓ Your virtual exchange is scheduled for 6 weeks. Your group will consist of you and at least one student. You will be completing work individually and with your partner(s).

Each week you will:

1. Complete a pre-Zoom worksheet before you meet your partner

2. Have a 10-15 minute meeting with your partner on Zoom to discuss a photo related to educational technology and compose a Google slide with your partner. Make sure that your video is on, and you or your partner(s) records the session. For a portion of your Zoom session, you will need to produce one Google slide in your team Google folder. In this slide, you will need to

   a. Make a list of the technology you see in the photo
   b. Write a brief summary of the value that technology has
   c. Compare and contrast it to present day technology

      Upload your recorded Zoom video and Google slide to your folder. Make sure to label your Google slide with you and your partner(s)' last names and the week number.

3. Complete a post-Zoom worksheet after you meet with your partner

4. One person from your group will be required to upload your Zoom video recording and Google slide to a designated Google folder.

Pre-Zoom worksheet

Write 3 details you see in this week's picture.

Write 2 ideas you have about the picture.

Write 1 question you have about the picture.

What time period do you think the photo was taken?

Please explain your answer to the above question.

Based on your partner exchange, what did you learn about this week's photo?

Post-Zoom worksheet

Write 3 details you see in this week's picture.

Write 2 ideas you have about the picture.

Write 1 question you have about the picture.

What time period do you think the photo was taken?

Please explain your answer to the above question.

Based on your partner exchange, what did you learn about this week's photo?