Promoting Intercultural Competence in Preservice Teacher Education through Virtual Exchange

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Abstract

Intercultural competence refers to the ability to effectively communicate with people from diverse cultural backgrounds while utilizing one's intercultural knowledge, skills, and attitudes. To become a competent teacher in English, preservice teacher education students would have to be able to manage a classroom with students from different cultural backgrounds. This study explores the possibilities of promoting intercultural competence among a group of pre-service teacher education students at Dhofar University through a virtual exchange program with Tulane University. Through a curriculum intervention, the pre-service teacher education students were given the opportunity to engage in conversations virtually. Utilizing an approach of action research, the study attempted to seek the pre-service teacher education students' perspectives on their intercultural competence in three areas namely attitude, skills, and knowledge by assessing their responses before and after the virtual exchange program. The results of the study revealed that the preservice teacher education students perceived their openness, communication skills, empathy, worldview, and self-awareness to have significantly increased after participating in the intercultural virtual exchange program. However, the virtual exchange program did not have an impact on the students' reservation of judgment towards their peers of different cultural backgrounds.

Keywords: *ESL,* intercultural competence, Oman, pre-service teacher education, virtual exchange

1. Introduction

1.1 The Gap in Intercultural Competence in the Sultanate of Oman

The Oman National Strategy for Education 2040 made a strong case for the development of 21st-century skills to fulfill the demands of the labor market. As the Sultanate of Oman transitions from an oil-dependent economy to economic diversification, among the national education strategies, is to prepare students with the skills to be effective global citizens in the twenty-first century (Al-Ani, 2017). Khalid bin Hilal bin Saud Al Busaidi, Minister of the Diwan of the Royal Court Chairman of the Education Council explained:

> "Skills have become the global currency of the 21st century. Therefore, the outcomes of the education system should include a set of skills and competencies which meet the requirements of dynamic and unpredictable local and international labour markets. Skills development should therefore be prioritized in the reform of the Omani educational system" (The Education Council, 2018, p.17).

Al-Maamari (2014) described that one of the ways to help students in Oman to develop skills for international labor markets is through international understanding and intercultural learning. In the academic year of 1998/1999, the Ministry of Education in Oman made English a compulsory taught subject in schools with the aim of building students' intercultural understanding (Al-Maamari, 2014). However, Kalbani, Solabarrieta, and Touq (2018) observed that the majority of students in Oman perceived English classroom practice to be more focused on grammatical competence and less on intercultural competence. The students' lack of intercultural competence is a cause for concern.

Previous investigations found that students must learn how to communicate with those of different cultural identities in order to coexist peacefully with one another and to survive in today's globally connected world (Al-Maamari, 2014). Intercultural competence becomes an influential instrument that enables students to overcome their cultural biases

(Lakey & Canary, 2002). The study aims to seek an understanding of the impact of a virtual exchange program on a group of preservice teacher education students' intercultural competence. The study is framed by the following research questions:

1. How do the students evaluate their attitude, skills, and knowledge of other cultures prior to participating in the virtual exchange program?

2. How do the students report their attitude, skills, and knowledge of other cultures after participating in the virtual exchange program?

1.2 Significance of the Study

The present study is significant as it explored one of the ways intercultural competencies may be incorporated into classroom teaching and learning. It utilized a curriculum intervention that brought students from two different cultures together virtually. The participants of the study were preservice teacher education students. To date, there is a gap of understanding on the intercultural competence of preservice teacher education students in the context of the Sultanate of Oman. Al-Issa (2006) explained that traditionally, English language teaching in the country is culturally dependent on North America, the UK, and Australia for learning resources and teaching experts. As the country moves towards Omanization which focuses on recruiting local talents, there is a strong need to train preservice teachers, as in the case of the participants in this study, to be intercultural competent. Omanization is the country's policy that refers to the employment of the local people at the work place (Al-Lamki, 2005). To become a competent teacher in English, Omani preservice teacher education students would have to be able to manage classrooms with students from different cultural backgrounds. The study is also significant as it addressed a way to break cultural stereotypes. In 2015, Rao Mehta and Heble studied the perceptions of Omanis on the Indian expatriate community. The study found that the lack of interaction between the two communities led to negative stereotypes. The study offered several suggestions which included a curriculum intervention at the university level to integrate intercultural competence. In a study about English language teaching in Oman, Hovhannisyan (2018) argued that intercultural competence can be achieved through a top-down approach that starts with the Teaching English to Speakers of Other Languages (TESOL) graduates in the Sultanate of Oman.

1.3 Defining Intercultural Competence

The world is rapidly becoming a globally interconnected place where multilingual and intercultural interactions routinely occur in professional, educational, political, and social interactions. Because of this, the development of intercultural competence is an intended outcome of many postsecondary institutions (Deardorff, 2006). According to Lustig (2005), an increasingly crucial skill today is the capacity to connect and work with individuals from very different cultural and ethnic backgrounds. While not explicitly stated, Oman Vision 2040 educational goals require skills related to intercultural competence to become globally competitive (Oman Vision 2040, n.d.), which demonstrate Spitzberg and Changnon's (2009) assertion that intercultural competence has become a skill that is critical to integrate into education and training as it is much sought after by employers. As a general concept, UNESCO (2005), defines interculturality as, "the existence and equitable interaction of diverse cultures and the possibility of generating shared cultural expressions through dialogue and mutual respect" (p.12) which "results from intercultural exchange and dialogue on the local, regional, national, or international level" (UNESCO, 2006, p. 17).

The precise term intercultural competence is variable and debatable among scholars. One popular definition of intercultural competence is offered by Deardorff as, "the ability to communicate effectively and appropriately in intercultural situations based on one's intercultural knowledge, skills and attitudes" (Deardorff, 2006, pp. 247-248). These three dimensions, knowledge, skills, and attitudes also mirror UNESCO's (2006) Guidelines on Intercultural Education, which specifically state

> "Intercultural Education provides all learners with cultural knowledge, attitudes and skills that enable them to contribute to respect, understanding and solidarity among individuals, ethnic, social, cultural and religious groups and nations" (UNESCO, 2006, p. 37)

It should be noted that UNESCO (2006) indicates that "direct contacts and regular exchanges" (p.37) are instrumental in developing skills related to communication and cooperation beyond cultural barriers. This language assumes a model in which there is the freedom and privilege of mobility to interact in the same physical intercultural spaces. This model is problematic, as evidenced by the global pandemic that restricted people's physical mobility. Imperiale (2021) argues that traditional approaches towards building intercultural competency skills specifically related to intercultural communication competence in this instance are grounded in the idea that physically moving between intercultural spaces is required. An example of this is described by Gudykunst (2002) where intercultural communication is defined as interaction "between people from different national cultures, and many scholars limit it to face-to-face

communication" (p. 179). These face-to-face opportunities, though, have not always been feasible for many individuals throughout the world due to various restrictions related to their lived experiences and were only attainable for those with financial means, social support, and academic flexibility, the "mobile elite" (Imperiale, 2021; Rawal & Deardorff, 2021). In other words, carefully crafted intercultural virtual exchanges can provide students, who may not have had the privilege to participate in an in-person exchange program, with an innovative pathway to develop intercultural competence skills that are globally sought by employers.

Successful intercultural interactions are the goals of the virtual exchange project. The conceptual framework that is used to guide what it means to interact successfully with people from different cultures in this study is from the work of Byram, Nichols, and Stevens (2001). The authors described intercultural framework to comprise three dimensions, namely knowledge, attitude, and skills. The authors explained that knowledge refers to the worldview and awareness of oneself and about other cultural groups, while attitude refers to one's openness and curiosity about others. The third dimension is the skills and it refers to the ability to communicate and empathize with others. The survey instrument that is used in this study is based on these three dimensions. The Methodology section elaborates on the survey instrument further.

1.3.1 Virtual Exchange

O'Dowd and O'Rourke (2019) offered the definition of virtual exchange in the context of learning a second language. The authors defined virtual exchange as an intervention program that is integrated into the curriculum. The program is designed to bring students from different cultural backgrounds together for a period of time through online interaction and intercultural collaboration. The program has to be monitored by expert facilitators. The aim of the program is to enhance the students' language skills and intercultural competency (Lewis & O'Dowd, 2016).

Educational institutions are not the only players in providing online spaces for language learners to collaborate with their peers. Non-profit organizations, such as the work of Soliya, value the benefits of virtual exchange (Guarda, 2012). Soliya is among the non-profit organizations that received funding through the European Commission's Erasmus+ Virtual Exchange project. Guarda (2012) explained that the Soliya project involved university students from several institutions worldwide. The Soliya project is aimed to foster critical thinking and meaningful dialogue across cultural divides. The project enabled the participants to engage in meaningful intercultural experiences online.

In another study, Cunningham (2019) uses the term telecollaboration to describe a form of virtual exchange. Cunningham (2019) studied the extent to which synchronous virtual exchange support language learning and content knowledge. Current literature on virtual exchange has a stronger preference for supporting students' learning in synchronous communication rather than asynchronous communication. Synchronous communication through videoconferencing has become increasingly popular post-pandemic. Recent years have shown that synchronous communication and has been made easier and more accessible (O'Dowd and O'Rourke, 2019). In the context of Oman, internet speed, bandwidth, and coverage have dramatically increased after the pandemic ("Omantel's network upgrades", 2020). This has enabled educational institutions in the Sultanate of Oman, such as Dhofar University, to transition to online learning when face-to-face classroom learning was interrupted.

1.4 Hypothesis of the Study

This study explored the possibilities of promoting intercultural competence among a group of pre-service teacher education students at Dhofar University through a virtual exchange program with Tulane University. Dhofar University is in the southern region of the Sultanate of Oman, while Tulane University is in New Orleans, the United States of America. The Methodology section of the paper further elaborates on the context of the study. Through a curriculum intervention, the pre-service teacher education students were given the opportunity to engage in conversations virtually. Utilizing an approach of an action research, the study attempted to seek the pre-service teacher education students' perspectives on their intercultural competence in three areas namely attitude, skills, and knowledge by assessing their responses before and after the virtual exchange program. The overall hypothesis of the study was that participation in the virtual exchange (post-exchange) would lead to an increase in self-assessed intercultural competence.

2. Method

The Method section describes the context of the study, participants of the study, data collection procedures, survey instrument, and data analysis. The issues that were addressed in the Introduction section build a case for a research design that provided the preservice teacher education students with an opportunity to experience virtual exchange, and to assess their own attitude, skills, and knowledge pre- and post-exchange.

2.1 Context of Study

The Sultanate of Oman is located southeast of the Arabian Peninsula. Oman's neighboring countries include Saudi Arabia, the United Arab Emirates, and, the Republic of Yemen. According to the latest census, the population of Oman

is slightly above 4.5 million ("Oman's population crosses 4.5 million", 2022). Out of the said total population, 62% of the population are Omani citizens while 38% are expatriates. The Omani population is composed of multi-ethnic identities which include Arabs, Balushi, and Zanzibari (Al-Maamari, 2014). Islam is the country's religion, and each community has its own cultural heritage, language, and dress (Al- Maamari, 2014). The majority of the participants of the study are from the Dhofar region, in the south of the country that borders the Republic of Yemen. The Dhofar region is linguistically diverse with many of the Modern South Arabian languages being spoken by the local population. These languages include Jibbali and Mehri (Algryani and Syahrin, 2021), Hobyot, Harsusi, and Bathari (Watson, Morris, Al-Mahri, Al-Azraqi & Al-Mahri, 2019). These local languages do not have writing traditions (Rubin, 2014).

The English language is widely recognized as second in importance to the Arabic language. Prior to the 1970s, there is little documented information on the use of the English language in the country (Al-Issa, 2020). According to Al-Issa (2005), the English language was recognized as an official language in the Sultanate of Oman in the 1970s. The English language is used in the government, business, education, legislation, and media and as a tool to serve the development of the nation. The ability to communicate in English well is perceived high in the community. However, several research uncovered that there is a major difference in the way English is used among the people in Oman. While a proportion of the students use English in their everyday lives, some of them experience English only in school (Al-Mahrooqi & Tuzlukova, 2014). When compared to the population in Muscat, students in Dhofar do not have as many opportunities to communicate with native speakers of English. The expatriate communities in the Dhofar region are largely from India, Pakistan, and Bangladesh ("Expat population rebounds", 2022).

2.2 Participant Characteristics

Prior to conducting the research, approval was sought and granted by the Research Department at Dhofar University. The research participants consisted of 32 undergraduate students (28 women and 4 men) at Dhofar University. Out of the 32 participants, 68% of them are members of the ethnic Jibbali while 2% are members of the ethnic Mehri. The type of sampling used in the study was systematic. All of the participants were a) students enrolled in a pre-service teacher course, and b) participated in a virtual exchange program with Tulane University. The participants of the study were undergraduates in the second, third, or fourth years of their university careers. All 32 students intended to pursue the teaching profession following graduation.

2.3 Data Collection

The participants of the study are 32 undergraduate preservice teacher education students at Dhofar University. The students worked in groups of four and were paired with peers at Tulane University. The students were assigned to communicate with their peers at Tulane University and to develop cross-cultural learning resources. The communication with their peers took place for one semester (16 weeks) through a variety of channels such as emails, WhatsApp, Google Drive, and Zoom. Participants were asked to complete the survey in the middle of the semester, at the beginning of the virtual exchange with Tulane University (Pre-) as well as at the end of the semester following the exchange (post-) in order to assess the change in their self-assessed intercultural competence over the course of the semester. The overall hypothesis was that participation in the virtual exchange would lead to an increase in self-assessed intercultural competence. The statements in the survey anchor directly towards getting the respondents to assess themselves on a particular attitude, skill, and knowledge. The survey results represent the students' belief about their intercultural competence rather than their actual level of competence. The latter may be measured by performance tasks and peer rating (Griffith, Wolfeld, Armon, Rios & Liu, 2016).

This study did not attempt to measure any causative influence of the exchange, but rather to describe the changes in student attitudes, skills, and knowledge over the course of the semester after participating in this exchange. Part of the reason for the lack of a control group is that taking part in the virtual exchange is popular among students and was required for successful completion of the course. An on-going study will measure the change in A.S.K.S. responses among a control group where students discuss topics related to intercultural competence without participating in the virtual exchange.

2.3.1 Survey Instrument

The investigation utilizes the self-reported assessment of intercultural competence developed by the Center for Instructional Excellence, Purdue University. The Intercultural Attitudes, Skills, and Knowledge Short Scale (A.S.K.S) consists of a 6-point Likert scale that allows the students to evaluate their own attitudes, skills and knowledge of intercultural competence ranging from "not at all" to "very high degree". The survey is adapted from the American Association of Colleges and Universities' Intercultural Competence VALUE Rubric.

The survey items are divided into the following categories:

1.   Items 1-4: Self-Assessment of Attitude

2.   Items 5-8: Self-Assessment of Skills

3.   Items 9-14: Self-Assessment of Knowledge

The Self-Assessment on Attitude is further broken down into items related to openness and curiosity, while the Self-Assessment on Skills has sub-categories related to communication and empathy, and the survey's Self-Assessment on Knowledge is divided into items about worldview and self-awareness. The validity and reliability of the scale have not yet been established. The instrument, however, has been used by several scholars such as the work of Gondra and Czerwionka (2018) who found that students exhibited intercultural competencies through second language learning in Spain. A description of the sub-categories of the survey instrument can be found in Table 1.

Table 1. Description of survey items within the A.S.K.S.

Item	Dimension	Sub-Category	Self-Assessment Content
1	Attitudes	Openness	Openness to have conversations with peers of different cultural backgrounds
2			Reserving judgements when talking to peers of different cultural backgrounds
3		Curiosity	Asking questions about different cultures
4			Seeking answers about cultural differences
5	Skills	Communication	Understanding of different forms of verbal communication in different cultures
6			Understanding of different forms of non-verbal communication in different cultures
7		Empathy	Using different worldviews to interpret views and actions of people of different cultural backgrounds
8			Acting in supportive ways that recognize the feelings of other cultural groups
9	Knowledge	Worldview	Understanding the importance of politics, history, beliefs, etc. to members of other cultural groups
10			Differentiating the complex politics, history, beliefs, etc. of other cultural groups
11		Self-Awareness	Awareness of own cultural rules and biases
12			Can describe one's own personal cultural rules and biases
13			Seeking to improve understanding of complicated differences between cultures
14			Awareness of how one's own experiences have shaped personal biases about cultural differences

2.3.2 Statistical Analysis

All statistical analysis was conducted using the statistical software SPSS (Version 27). First, Pre-exchange and Post-exchange A.S.K.S. responses to all items were averaged respectively and tested using a two-tailed Paired-Samples t-test (significance: $p < .05$) in order to assess the overall hypothesis of whether or not there was a change in self-assessed intercultural competence.

Second, Pre- and Post- responses were averaged respectively by dimension (Attitude, Skills, Knowledge, as mentioned above) and a 2x3 Repeated Measures ANOVA was conducted in order to determine whether there were differences between these three dimensions of intercultural competence with respect to time.

Third, Pre- and Post- responses to sub-categories of dimensions (Attitude – Openness; Attitude – Curiosity; Skills – Communication; Skills – Empathy; Knowledge – Worldview; and Knowledge – Self-Awareness) were averaged, respectively, and compared using 2 x 2 ANOVAs to compare the sub-categories of the different dimensions (i.e. Attitude – Openness and Attitude – Curiosity) with the Pre- and Post-exchange responses using the same standards for significance mentioned above.

Finally, Pre- and Post- responses to specific items were analyzed using two-tailed Paired-Samples t-tests if they were determined to have been inconsistent with the overall results in some way. These tests were conducted in order to understand the influence these individual item responses may have had on the overall results and to understand why responses to these items differed from the overall trend.

3. Results

The findings of the study are reported according to the statistical tests listed above. All significance ratings follow the criteria $* = p < .05$, $** = p < .01$, and $*** = p < .001$. Overall, the difference between the Pre-exchange responses and the post-exchange responses was highly significant ($t (31) = -7.542$, $p < 0.001***$), showing that there was a difference in self-assessed intercultural competence following the virtual exchange. The Pre-exchange mean of responses was 3.5134, while the post-exchange mean was 4.768. This positive difference between the two means shows that there was an increase in self-assessed intercultural competence between the beginning of the semester and the end, supporting our initial hypothesis.

The 2 (Pre- vs. Post-) x 3 (Attitudes/Skills/Knowledge) Repeated Measures ANOVA confirmed the significant difference between Pre- and Post- conditions, with $F (1, 31) = 57.058$, $p < .001***$ as well as the significant differences in responses to the Attitudes, Skills, and Knowledge items $F(2, 62) = 8.868$, $p < .001***$ suggesting that there were different changes in these three different components of Intercultural Competence. A comparison of the means of the different categories shows that there was an increase across all three dimensions (see Table 2), with the change in Attitudes representing the smallest increase (+1.06) and the changes in Skills and Knowledge being comparable (+1.36 and +1.32, respectively). There was no significant interaction of the Pre-/Post- measurements with the dimensions of Attitudes, Skills, and Knowledge ($F(2, 62) = 2.286$, $p = .110$, likely due to the fact that the mean responses to all three dimensions increased.

Table 2. Differences between Pre-exchange and Post-exchange self-assessments of Attitudes, Skills, and Knowledge

	Attitudes	Skills	Knowledge
Pre	3.46	3.26	3.72
Post	4.52	4.62	5.04
Change	1.06	1.36	1.32

3.1 Sub-Categories

Since the mean of the Attitudes dimension was the relative outlier, we investigated it first using the 2 (sub-category) x 2 (Pre-/Post-) repeated measures ANOVA described above. While the difference between Pre- and Post- responses was still highly significant ($F(1, 31) = 46.773$, $p < .001***$), there were no significant differences between sub-category ($F(1, 31) = 1.263$, $p = .27$) or interactions between Pre-/Post- and sub-category ($F(1, 31) = 1.167$, $p = .288$), suggesting that responses based on Openness and Curiosity increased similarly. When comparing means between Openness and Curiosity, however, as can be seen in Table 3, mean Openness responses did not change between Pre- and Post-exchange, while the Curiosity responses had the largest increase of any sub-category. The lack of a significant difference between these categories is surprising, considering that mean Openness responses averaged 5.5 out of 6 both Pre- and Post- and mean Curiosity responses increased from 2 to 4 out of 6, so in other words, a different range of scores and a different level of increase. These results are investigated further in the Individual Items section below.

Table 3. Changes in Sub-Category mean responses from Pre-Exchange to Post-Exchange

	Attitudes		Skills		Knowledge	
	Openness	Curiosity	Communication	Empathy	Worldview	Self-Awareness
Pre	5.5	2	5	5.5	4.5	4
Post	5.5	4	6	6	5.5	5
Change	0	2	1	0.5	1	1

The Skills dimension was broken down into the sub-categories of Communication and Empathy. Again, the difference between Pre-/Post- responses was highly significant ($F(1, 31) = 50.091$, $p < .001***$). There was also a highly significant difference between responses to these sub-categories ($F(1, 31) = 12.715$, $p = .001**$). For a comparison of means, again see Table 3. This significant difference appears to stem from the participants initially ranking their empathy skills as higher than their communication skills, but importantly, they also ranked their intercultural communication skills quite highly. There was, however, no significant interaction of Sub-Category and Pre-/Post-.

The Knowledge dimension was broken down into the sub-categories of Worldview and Self-Awareness. Once again, the difference between Pre-/Post- responses was highly significant ($F(1, 31) = 50.341$, $p < .001***$). Also, there was a

significant difference between responses to these sub-categories (F(1, 31) = 5.242, p = .029*). Interestingly, there was also a significant interaction between Sub-Category and Pre-/Post- responses (F(1, 31) = 10.781, p = .003**). This interaction is likely due to students ranking their knowledge about the world and about other cultures as being more extensive than an in-depth recognition of their own cultural biases and values.

3.2 Individual Items

3.2.1 Attitudes: Openness

Due to the lack of increase in means across the category of Openness, we additionally investigated the individual items that composed this sub-category. Participant responses to Item 1 (I welcome and initiate interactions with people who are culturally different from me.) increased significantly between Pre- and Post- (t(31) = -6.592, p < .001***) suggesting that the students perceived of themselves of being more open to having conversations with peers of different cultural backgrounds after participating in the virtual exchange program.

On the other hand, while participant responses to Item 2 (I reserve judgment during interactions with people culturally different from me.) did increase slightly Pre- to Post-exchange (see individual item mean responses in Figure 1) this increase was not significant (t(31) = -1.557, p = .13). This suggests that the virtual exchange program did not have an impact on the students' openness in reserving judgement towards their peers of different cultural backgrounds, although this result could be confounded by language proficiency level, especially since English is not the first language of any of the participants, and the phrase 'reserve judgment' in particular may have been confusing.

3.2.2 Attitudes: Curiosity

The increase in self-assessed intercultural Curiosity was the largest average increase to any sub-category. This average increase is surprising since the change between responses (particularly to Item 3) is not more significant than responses to most other items, even if still highly significant (Item 3: t(31) = -3.366, p = .002**; Item 4: t(31) = -4.910, p < .001***). This is likely due to the variation in responses, and indeed, the standard deviation in responses to Item 3 (1.83) is higher than any other item except item 14 discussed below.

3.2.3 Skills: Communication

The significant difference between responses to the two sub-categories of the Skills dimension led us to investigate this dimension further. In response to the two prompts within the Skills: Communication sub-category, participants self-assessed their communication skills as quite high Pre-exchange, but there was nevertheless a highly significant difference between the initial self-assessments and their Post-exchange self-assessments (Item 5: t(31) = -4.499, p <.001***; Item 6: t(31) = -6.111, p<.001***). Since the Post-exchange mean of responses was 6 out of a possible 6, meaning that all participants ranked themselves at the highest possible level for their inter-cultural communication skills, suggesting that there is a ceiling effect limiting understanding of participants' self-assessment of these skills. Regardless, while the ceiling effect may be limiting the possible increase of self-assessed intercultural communication skills, the increases were still highly significant.

3.2.4 Skills: Empathy

Similar to the Skills: Communication sub-category, participants Pre-exchange self-assessments of their ability to Empathize with individuals and groups from different cultural backgrounds were quite high. As a result, there appeared to be a similar ceiling effect limiting the self-assessed growth among the participants, since mean self-assessed empathy levels were 6 out of a possible 6. Still, the difference between responses Pre-/Post- to both survey items in this sub-category were highly significant (Item 7: (t)31 = -4.123, p < 0.001***; Item 8: t(31) = -5.271, p < .001***). This shows that despite students having a high level of self-assessed intercultural empathy going into the virtual exchange, their responses showed a significant increase in intercultural empathy following the exchange. The significant differences reported above between sub-categories is likely due to the fact that the participants rated their intercultural empathy as slightly higher than their intercultural communication skills and the increase in both of these following the virtual exchange is obscured due to the ceiling effects.

3.2.5 Knowledge: Worldview

Given the significant difference in responses between sub-categories, as well as the significant interaction between sub-category and Pre-/Post- responses, we decided to further investigate the Knowledge dimension's sub-categories of Worldview and Self-Awareness. Responses to both Worldview Items 9 (t(31) = -7.309, p < .001***) and 10 (t(31) = -5.718, p < .001***) were significantly different from Pre- to Post-, suggesting that the participants perceived increased (see individual item means in Figure 1) knowledge about different cultures after the virtual exchange program.

3.2.6 Knowledge: Self-Awareness

The Self-Awareness sub-category was the only one which contained 4 prompts rather than 2. Whether this contributed

to the interaction between sub-category and Pre-/Post- responses is unknown, however, after examining individual item responses, the differences between Pre- and Post- responses to all four items (11: $t(31)$ = -3.84, p = .001**; 12: ($t(31)$ = -4.303, p < .001***; 13: ($t(31)$ = -6.565, p < .001***; 14: ($t(31)$ = -3.45, p = .002**) were highly significant, suggesting that the participants perceived increased self-awareness about their own cultural rules and cultural biases after participating in the virtual exchange. The figure below illustrates the comparison of means pre- and post- responses of the virtual exchange experience.
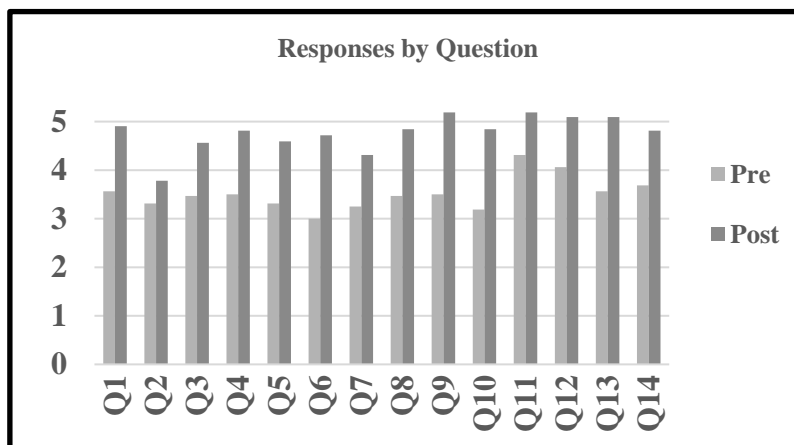
Figure 1. Comparison of Pre- and Post- exchange mean self-assessment responses to individual survey items

4. Discussion

The paper investigated the perspectives of a group of pre-service teacher education students on their intercultural competence in three areas namely attitude, skills, and knowledge by assessing their responses before and after a virtual exchange program. In regards to the first research question, the findings show that the students perceive themselves at high degree in terms of openness and empathy towards people from different cultural backgrounds prior to the virtual exchange program. The context of the study, as explained in the Methodology section, is an integral part of this particular finding. The Omani population is rich in its linguistics identities, which includes Arabic, Jibbali, Mehri, Hobyot, Harsusi, and Bathari (Watson, Morris, Al-Mahri, Al-Azraqi & Al-Mahri, 2019). In total, 70% of the respondents of the study are members of the ethnic Jibbali and Mehri. It is not surprising that the students self-assessed their openness and empathy as quite high pre-exchange, as they believed they had some aspects of the intercultural competence. For the past five decades, the Omani population takes pride in their internal stability through religious tolerance, coexistence, and moderation within the society despite being geographically located in a turbulent region. Bonnefoy and Al-Rabaani (2022) explained,

> "The projection of a peace-loving country is at the core of many narratives… The image of a society and state that place specific value in co-existence and moderation are often supported by academics, historians, institutions, citizens and expatriates" (p.1)

While the students may have perceived their openness and empathy highly prior to the virtual exchange program, they rated their curiosity at a low degree. The survey statements pertaining to curiosity are asking questions and seeking answers about different cultures. One possible explanation for this is that the traditional approaches towards building intercultural competency skills through the physical movement of spaces, as explained in the Literature Review section, are not feasible for many students (Rawal & Deardorff, 2021). Without the financial means, social support, and academic flexibility the students may have not had the opportunities to ask questions and seek answers from people from different cultural backgrounds in physical spaces. A similar comment was made by Seawright, Albers and Schanne (2022) as the authors argued that the benefits of cross-cultural exchanges are not limited to physical spaces. The authors concluded that a well-designed online cultural exchange project can impact the lives of students, particularly those who have not had the opportunity to travel.

As for the second line of inquiry, the overall findings revealed that the preservice teacher education students perceived their openness, communication skills, empathy, worldview, and self-awareness to have increased following the virtual exchange program. The positive difference between the two means (pre-exchange responses and post-exchange responses) shows that there was an increase in self-assessed intercultural competence between the beginning of the semester and the end. Similar results of the study can be traced in the work of Krishnan et.al. (2022), as the study suggested that a virtual intercultural exchange can be an effective means of facilitating intercultural growth in participants.

On a fundamental level, the virtual exchange program enabled Omani students to interact with American students in a way that may have been difficult in an Omani classroom context otherwise. The increase in self-assessed intercultural Curiosity was the largest average increase for any sub-category. On the other hand, the increase in responses to Item 2 (I reserve judgment during interactions with people culturally different from me) was not significant, suggesting that the virtual exchange program did not have an impact on the students' openness in reserving judgment towards their peers of different cultural backgrounds. The findings argue that the phrase 'reserve judgment' may have been confusing and conclude that it is the case of linguistic limitation. This is in part due to the limitation of the survey instrument being written in English. The students were not offered the Arabic translation.   In another study, Collins, Mueller, Wood, and Stetten (2022) found that in a telecollaborative exchange between American and Egyptian students, several participants reported that they believed no change occurred in their experience. The study concluded that the students' lack of openness demonstrates a potential influence of their preemptive mindset.

Another consideration regarding the survey instrument is the range of scale. The findings of the study revealed that the students rated their communication skills at a high degree going into the virtual exchange program and the perspectives increased to the maximum scale value (6- very high degree) post-exchange. The finding argues that the ceiling effect limits our understanding of the participants' self-assessment of the skill. This increase may indicate social-desirability bias (Mathieu, 2021) such as the desire to please the instructor or bias in self-perception in the initial survey (5- high degree). It may also indicate that the participants were unfamiliar with the survey instrument particularly because it was developed for American colleges. These factors may limit the expression of the survey result.

Finally, the findings suggest that the differences between pre-and post- responses for self-awareness were highly significant. This suggests that the virtual exchange had an impact on the students' perceived self-awareness about their own cultural rules and cultural biases. A similar finding was reported in the work of Seawright, Albers, and Schanne (2022). The authors studied the impact of a virtual exchange program on participants from the United Arab Emirates and the United States. The study found that the students perceived their cultural awareness to have increased as the virtual exchange program afforded them the opportunity to learn more about other cultures in an open and inviting space where they could ask questions and discard stereotypes.

5. Conclusion

The paper investigated the impact of a virtual exchange program on the intercultural competence of a group of preservice teacher education students at Dhofar University, a higher learning institution in the Sultanate of Oman. The investigation sought to understand the students' perspectives in three areas, namely attitude, skills, and knowledge pre- and post-virtual exchanges. The study utilized a self-reported assessment of intercultural competence developed by the Center for Instructional Excellence, Purdue University, United States of America. The study shed some light on the positive impact of the virtual exchange program as the students perceived their openness, communication skills, empathy, worldview, and self-awareness to have significantly increased after participating in the intercultural virtual exchange program. However, the virtual exchange program did not have an impact on the students' reservation of judgment towards their peers of different cultural backgrounds.

In this investigation, we have built upon and added to the growing number of studies on intercultural competence through virtual exchanges in preservice teacher education. The results given here should not be viewed as being broadly generalizable, as with any study with limited sample size. The results serve as a catalyst for further study to support and build upon what has been stated, in particular, a closer examination of the students' perspectives on reserving judgment when talking to people from other cultural backgrounds bears deeper scrutiny.

The study also revealed that by utilizing an approach of a curriculum intervention, the intercultural virtual exchange can be applied in the classroom. An important observation pertains to the fact that in carrying out a virtual exchange program that involves students from extremely different cultural backgrounds, the instructors play an active role in creating cultural awareness. Without instructors' supervision, the virtual exchange program may negatively affect the students' overall learning outcome. In the context of this study, where media stereotypes of Arabs and Americans are prevalent, breakdowns in communication and misunderstandings of expectations are easily possible. However, a well-planned virtual exchange program can create opportunities for students to develop their intercultural competencies at a low cost.

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