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Research Article

Cross-national comparison of gender discrepancies in distance education

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ABSTRACT

This research focused on gender discrepancies regarding students' opinions about distance education (DE). Data was gathered from Emirati, Portuguese, and Ukrainian university students through an online survey during the first term of the 2020/21 academic year before the war in Ukraine. A qualitative content analysis was used to understand gender discrepancies among the participants. Results show that greater gender discrepancies occurred in the categories of overall opinions and usefulness of DE. Men found DE more helpful and had a more positive opinion about DE overall. The discrepancies between males and females were smaller in several other categories, such as distractions and time management issues. Interestingly, the comments made by men and women focused on different aspects of these categories.

Keywords: cross-national comparison, distance education, gender discrepancies, higher education, student opinion

INTRODUCTION

Students and instructors are physically separated when participating in distance education (DE) courses (Keegan, 2002). Both synchronous and asynchronous formats can be used in DE (Watts, 2016). The context of this research is emergency remote learning, which consists of using "an alternative and unplanned method for delivering instruction from a distance because they [faculty] are simply not able to be physically located in a classroom with their students" (Shisley, 2020, para. 2).

Many research articles about student and faculty opinions regarding DE before and during the pandemic report similar challenges and benefits. Benefits include greater student independence, acquisition of new skills, and flexibility (Anderson, 2004; Vasilevska et al., 2017). Among the challenges are the technological gap

between students and instructors, lack of technical assistance, interaction issues, and the need for instructional changes (Qamar et al., 2021). Other challenges were reported, such as isolation and some content being unsuitable to be offered in DE format (Kamble et al., 2021). Also, instruction with DE can be less effective in learning social skills and technical procedures (Baczek et al., 2020).

In a meta-analysis conducted by Bozkurt et al. (2020), time management was raised as a challenge for both instructors and students. Bozkurt et al. (2020) suggest that students develop time management skills and take the initiative for their learning to succeed in the unfamiliar online learning environment.

Recent qualitative studies about gender discrepancies in DE have been conducted less frequently than other DE topics. Multinational studies regarding gender are even less common. However, aspects of this topic were examined in the past. Research conducted by Barrett and Lally (2002) found that men and women played different roles in online environments. Although their cognitive and metacognitive contributions were alike, there were notable differences in their social and interactive behaviors. Men sent more and lengthier messages, emphasizing socio-emotional aspects, while women contributed with more interactive messages.

A study assessing gender differences in achievement in online courses resulted in several gender-based recommendations. For males, the approaches involved enhancing confidence, adhering to structured study schedules, and offering support based on student availability. For females, strategies included incorporating personal experiences, studying in focused environments not as distracting as home, forming study groups, seeking peer support, and managing time efficiently (Taplin & Jegede, 2001).

A meta-analysis conducted by Perkowski (2013) about gender differences in academic performance and self-efficacy in DE, found that the variations in effect sizes for academic performance were not statistically significant, contrasting with the noticeable heterogeneity in effect sizes for self-efficacy. Further exploration of moderators indicated that the blended learning (BL) mode influenced the connection between gender and self-efficacy. Recognizing and examining male and female students' approaches and behavior in the online environment helps enhance DE.

A report from the International Telecommunications Union (ITU, 2021) states that more than half of women worldwide are off-line. "Gender inequality in the physical world is replicated in the digital world" (Tyers-Chowdhury & Binder, 2021, p. 5). According to these authors, women use the Internet and digital services less than men. Several reasons may help explain gender inequality. Less access to technology and the Internet and cultural norms excluding women from education and other activities are among those reasons (Tyers-Chowdhury & Binder, 2021, p. 5). In addition, regarding gender digital literacy, one study found that males have more self-assurance and greater interest than females (Ertl & Helling, 2011). Adigun and Diamond (2021) added that the pandemic also contributed to the gender digital divide.

The research indicates different results regarding how men and women interact and engage in online courses (Shahzad et al., 2020). Online behavior is complex and multidimensional. Based on previous studies, online behavior depends on learners' characteristics, level of familiarity with the course content, and self-confidence (Morante et al., 2017). Online interaction differs; males typically post messages to gain status, while females post messages to connect with others (Marley, 2007). Morante et al. (2017) suggested that learner engagement with peers and instructors leads to better academic outcomes. However, these researchers also found that interaction decreased over time when the students seemed comfortable with the course.

Gender discrepancies appear to vary depending on how men and women use technology. Gebhardt et al. (2019a) stated that large-scale assessments of students have reported that men perform better on more technological tasks while women manage and share information better.

In their study, Punter et al. (2017) concluded that men perform better in computer literacy items while women perform better in information literacy. Regarding gender perceptions, "differences in students' attitudes towards computer technologies run counter to the gender differences in achievement in CIL [computer and information literacy]" (Gebhardt et al., 2019a, p. 6). Gebhardt et al. (2019a) and Punter et al. (2017) state that the digital gap between the genders may decrease due to changes in computer use over time. Currently, technology focuses on Internet applications while previously focused on technical aspects (Punter et al., 2017).

There are inconsistencies between students' perceptions of information and communication technology skills in educational contexts and their actual skills (Hargittai, 2010; Vasilevska et al., 2017). A study conducted by Fidalgo et al. (2020) "confirms that students need to gain a deeper knowledge and learn additional practical digital literacy skills" (p. 41) to become more proficient users of technology. According to several studies conducted during the pandemic, instructors must also improve their digital literacy skills (Puljak et al., 2020; Sánchez-Cruzado et al., 2021; Tejedor et al., 2020).

Some studies indicate the importance of considering students' interests and requirements to improve their DE experience (Kotova & Hasanova, 2016; Razinkina et al., 2018). Institutions of higher education (IHEs) can benefit from student opinions to improve the development of DE courses (Puljak et al., 2020). Student diversity needs to be included in online courses by addressing "individual differences, patterns of thinking, motivation, and whether the internet speed at home is enough and reliable" (Malkawi et al., 2021, p. 7). A study by Angelico (2020) suggested inclusive curriculum, instruction, and evaluation to assist students with diverse needs. In addition, the author emphasizes the need to invest in technological infrastructure for schools. Equitable technology access is also essential for improving students' educational experiences (Angelico, 2020).

Purpose of Study

This study pursued two primary objectives: firstly, to investigate students' perspectives on DE based on gender, and secondly, to undertake a cross-national comparison to strengthen the understanding of gender-based responses. This research allowed participants to voluntarily express their opinions without constraints. The way students expressed their thoughts, language use, and focus provided valuable information for IHEs about DE and its affordances. Moreover, the study sought to contribute to the growing awareness of the impact of gender discrepancies in the field of DE. This emphasis on the intersection of gender and DE aligns with prior research, as evidenced by the works of Price (2006) and Rovai and Baker (2005). The cross-national comparisons also provided a view of gender differences regarding DE between countries. This study aimed to deepen the understanding of these crucial aspects, emphasizing their relevance, and significance in gender and DE research.

METHODOLOGY

A survey was e-mailed to Emirati, Portuguese, and Ukrainian students enrolled in undergraduate and graduate online courses during the first semester of 2020/21. Before the pandemic, the three countries had similar profiles regarding DE offerings in IHEs. All participating institutions offered traditional face-to-face courses as their primary delivery mode. IHEs included in this study were unprepared for emergency remote learning and received guidance from governmental agencies regarding the transition to DE during the pandemic (Governo da República Portuguesa [Government of the Portuguese Republic], 2020; Ministry of Education and Science of Ukraine, 2020; Ministry of Education of the United Arab Emirates, 2020). A convenience sample of five universities in Portugal, four in Ukraine and two in United Arab Emirates (UAE) agreed to send the survey to their students. Student participants were self-selected.

Portugal, Ukraine, & United Arab Emirates Distance Education Settings

In Portugal, the pandemic affected teaching methods, changing the educational approaches. Many students and instructors had not previously experienced online classes (Pascoal, 2020). Despite significant adaptation efforts, institutions were perceived as unprepared. Barriers to online learning were identified, such as excessive workload and concentration challenges, while advantages included increased flexibility in location and time (Gonçalves, 2021). Pedagogical approaches like video conferences and varied teaching techniques were implemented. Concerns about using the online format were related to delivering classes requiring hands-on activities (Chick et al., 2020). The online assessment methods yielded mixed satisfaction, with a negative correlation between the pandemic's impact on learning and satisfaction with DE (Gonçalves et al., 2020). In Portugal, recent interest in technology-enhanced learning systems prompted publication of Decree-Law No. 133 in 2019, aiming to regulate and promote high-quality distance higher education globally, emphasizing personalized learning, curriculum flexibility, and reduced financial barriers (Rocha, 2019).

In Ukraine, the pandemic quarantine measures accelerated the adoption of DE technologies across educational institutions, revealing associated challenges. Despite self-assessments by IHEs on computer software proficiency, issues persisted, particularly in hardware/software inconsistencies and Internet-related technical problems, as noted in reports by National Agency for Higher Education Quality Assurance (2020). Collaborative efforts between non-governmental organizations and Ministry of Education and Science of Ukraine (2020) have resulted in developing courses to address digital literacy. Other identified challenges, such as self-organization difficulties, high distraction levels, limited practical skills acquisition, and restricted teacher communication, may find solutions through BL approaches (Ministry of Education and Science of Ukraine, 2020). Survey results comparing the 2020/21 academic year to the previous one indicate improved distance learning organization attributed to heightened teachers' digital competence, using a single platform within educational institutions, and integrating diverse resources, including MOOCs (Mintii et al., 2021).

In response to the pandemic, Arab countries, including UAE, have implemented DE as a primary preventive measure, with initiatives to promote social distancing like remote work and online purchases. Despite the deeply ingrained Arab value of social closeness, the virus has swiftly disrupted cultural norms, leading to empty streets, closed venues, and altered social interactions (Masoud & Bohra, 2020). The concept of "distance ship" has emerged, signifying the collective embrace of distancing initiatives (Al Lily et al., 2020). UAE government has actively supported programs to enhance the quality of online education, exemplified by Digital School, Diwan eBook Reader, Duroosi, Madrasa eLearning Platform, Mohammed bin Rashid Smart Learning Project, and TDRA Virtual Academy. These multifaceted programs underscore UAE's commitment to modernizing education, catering to diverse needs from K-12 students to professionals, reflecting a dedication to creating an inclusive, accessible, and high-quality e-learning environment (United Arab Emirates' Government Portal, 2023).

Participants

Participants were Emirati, Portuguese, and Ukrainian university students attending the first term of the 2020/21 academic year before the war in Ukraine. A convenience sample of five universities in Portugal, four in Ukraine and two in UAE agreed to send the survey to their students. Student participants were self-selected.

The students were enrolled in undergraduate and graduate programs. A total of 980 students from the three countries responded to a 12-item online survey about DE. The survey contained different types of questions, including multiple-choice, Likert scale, multiple responses, and one open-ended item. A self-selected sample of 437 completed the open-ended item of the survey. The item was optional and asked participants to share additional thoughts about DE.

Data Collection & Analysis

The online survey from a previous multinational study on students' opinions about DE by the authors (Fidalgo et al., 2020) was adapted for the emergency remote learning context of the current study. Surveys allow researchers to "gather information on the thoughts, emotions, attitudes, beliefs, values, perceptions, personality, and behavioral intentions of study participants" (Johnson & Christensen, 2014, p. 192). The survey was designed to assess students' opinions and interest in DE based on the researchers' extensive DE experiences and an in-depth literature review. The survey was validated after being pilot-tested with similar participants in the previous multinational study.

Google Forms was used to create the 12-item survey that was e-mailed to students in November 2021 and was open for two months. Participants responded anonymously to questions about their opinions concerning online courses, reasons for taking them, future enrollment, self-confidence using technology, and demographics. This research addresses the optional open-ended item of the survey. Geer (1991) states that open-ended questions offer insights into respondents' concerns when conducting opinion research.

The survey was translated into Portuguese and Ukrainian to facilitate a higher response rate. UAE survey was offered in Arabic and English (the instructional language), and students could choose which version to respond to.

In this study, a summative qualitative content analysis was performed on the open-ended item of the survey. This type of analysis starts by finding word incidences. However, "a summative approach to qualitative

content analysis goes beyond mere word counts to include latent content analysis" (Hsieh & Shannon, 2005, p. 1283). Students' responses were interpreted further to understand the meaning of their opinions about DE.

All students' responses to the open-ended question were translated into English before data analysis was conducted. webQDA (2017) software was used for the qualitative analysis of student comments. webQDA (2017) helps researchers analyze qualitative data, such as open-ended survey responses. Several analyses were conducted, including coding and word and text searches. To cross student comments with gender and country descriptors, a matrix analysis was performed. The three-country comparison was conducted using the matrices.

The coding process was inductive to conduct the qualitative content analysis. After reading all responses to the open-ended item, two researchers independently developed lists with categories and subcategories with the most comments from the participants. The researchers' lists were compared to create a final list. The main categories were

(1) overall positive comments,

(2) overall negative comments,

(3) communication and interaction issues,

(4) motivation,

(5) time-saving and time-management issues,

(6) technology and Internet access, and

(7) self-organization.

The main subcategories were

(1) usefulness of DE,

(2) DE's inadequacy in delivering some types of content,

(3) preference for face-to-face classes, and

(4) distractions.

Participants' responses were coded in webQDA (2017) using the final list. After applying the codes, the software performed several analyses, as indicated above.

The number of occurrences in each category and subcategory was examined to understand which DE topics were most important to the participants. Graphs with percentages of responses per gender and country were created to share these results. Samples of student comments were selected to represent the most frequent responses.

Limitations & Addressing Potential Biases

Researchers may have unintentionally introduced cultural biases when interpreting responses. To address this, researchers involved individuals from diverse cultural backgrounds. The survey was translated into Portuguese and Ukrainian. Potential linguistic and cultural nuances may not have been entirely captured. To mitigate inaccuracies of translations, professional translators were engaged to ensure the survey maintained its intended meaning across different languages and cultures.

Data was collected during the pandemic. This may have influenced participants' perceptions and their experiences. Researchers provided context in the interpretation of results.

Validity & reliability

One of the methods used to improve the validity and reliability of the study was having two researchers with expertise in DE examine and review the inductive coding and categories. The open-ended item of the questionnaire was checked and revised by two researchers for clarity and to ensure it addressed the purpose of the study. For validity, the response to the open-ended item of the anonymous survey was voluntary and optional. Participants freely chose to share their opinions about DE.

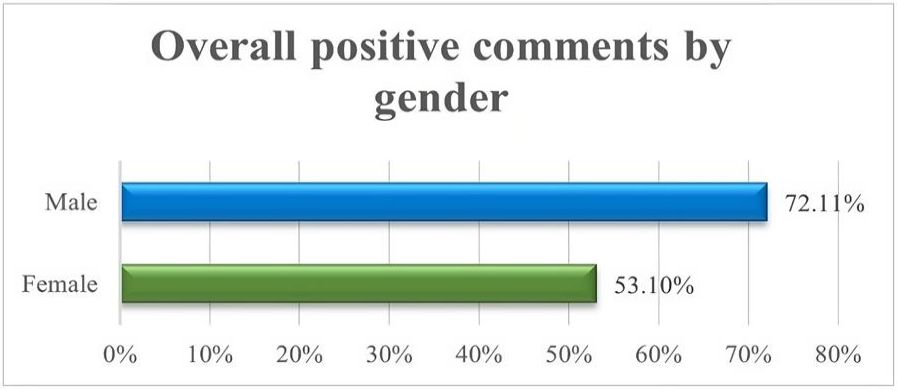

Figure 1. Overall positive comments by gender in three countries (Source: Authors)

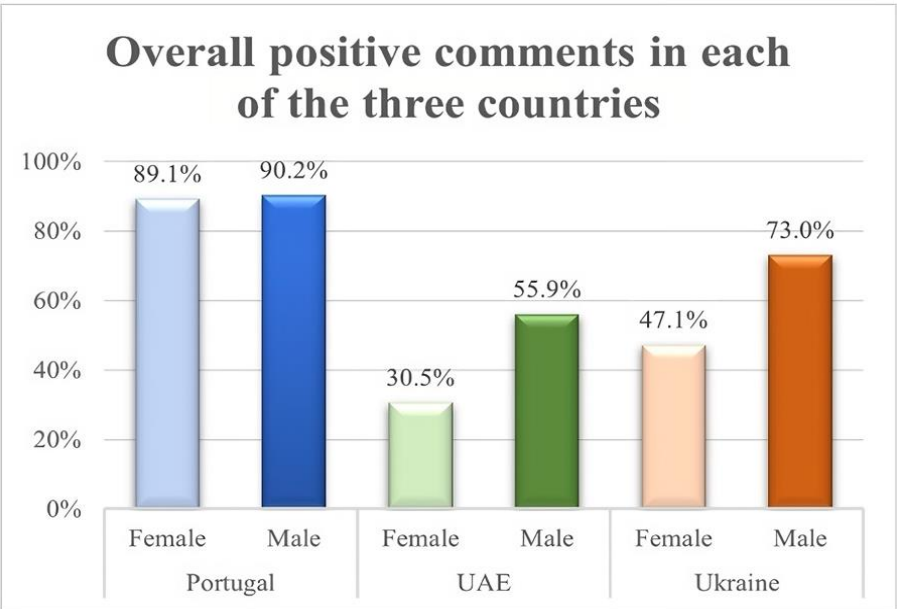

Figure 2. Overall positive comments by gender & country (Source: Authors)

FINDINGS

In UAE, 91% of the participants were female, in Ukraine, 75%, and in Portugal, 74%. The mean age of participants in Portugal was 27.4 (standard deviation [SD]=11.2), in UAE was 21.5 (SD=5.1), and in Ukraine was 19.6 (SD=3.8).

The results reflect the categories and subcategories with the most comments that emerged from the qualitative analysis. The analysis focused on gender discrepancies and gender responses for each of the three countries. The results are presented by themes that emerged from the participants' responses.

Theme 1: Overall Positive Comments

Although most of the participants in the study were female, in the open-ended question from almost one thousand participants, 66% of the responses were from men and 38% from women. The different number of comments made by both genders in the three countries is reflected in the graphs.

Male participants made more positive (**Figure 1**) and fewer negative comments about DE experience than females. Portugal had the highest percentage of positive comments of the three countries in both genders (**Figure 2**).

The following comments illustrate some reasons for students' positive and negative opinions about DE. "Distance learning turns out to be a new form of habit in relation to new technologies, ending up discovering different ways of working, occupying free time and even learning at various levels", "It brings the student

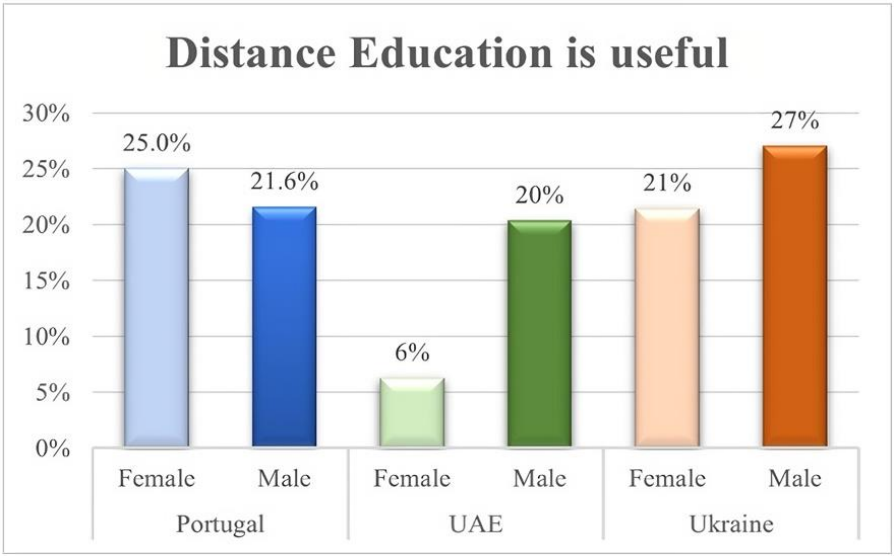

Figure 3. Usefulness category by gender & country (Source: Authors)

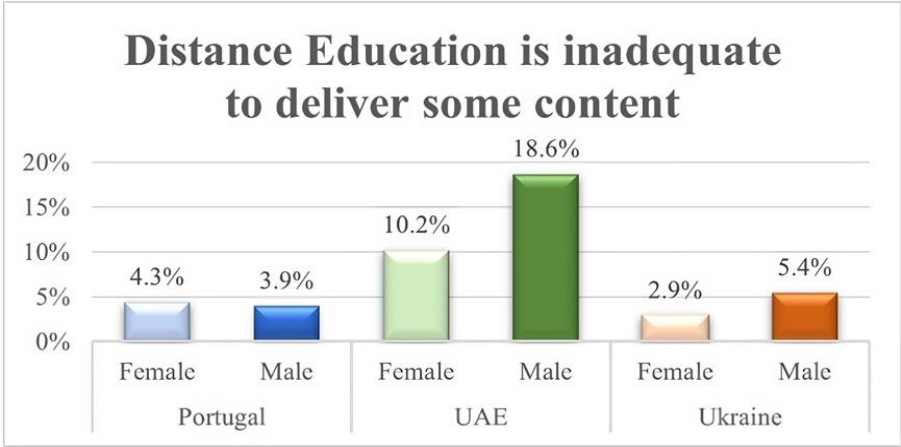

Figure 4. Usefulness category by gender & country (Source: Authors)

community together in troubled times like the one we live in", "Distance learning is not something I was interested in at first, but after having some experience, I believe this will be a good way for us to be able to learn without having to travel to school or another institution", "In my opinion, distance learning does not bring any benefit to students; they are not as attentive as in face-to-face classes nor so motivated", "I do not think it's beneficial to us as people because we're more isolated, and we do not have the ability to 'bond' with our classmates and even teachers", and "distance learning is very complicated and demotivating."

Theme 2: Usefulness of Distance Education

Male students mentioned the usefulness of DE more often (**Figure 3**). Regarding this category, the gender difference is most significant in UAE. Several reasons were mentioned regarding the usefulness of DE. Three students said, "Very useful due to the pandemic", "(...) there is no need to spend so much money on transport passes and not so much time is wasted on travel", and "Online classes have the possibility of being recorded and we at home can watch the recording several times (better understanding of the subject)."

Theme 3: Adequacy of Distance Education for Content Delivery

More male students in UAE and Ukraine shared that DE was not adequate to deliver some content (**Figure 4**). Some examples of concerns are "It's ok for some humanity courses but extremely horrible for courses that require a lab", "Also, some courses, especially mathematical ones, need practical examples and real-time step-by-step solving, which is hard to do online", and "In very practical courses, remote operation is unreliable."

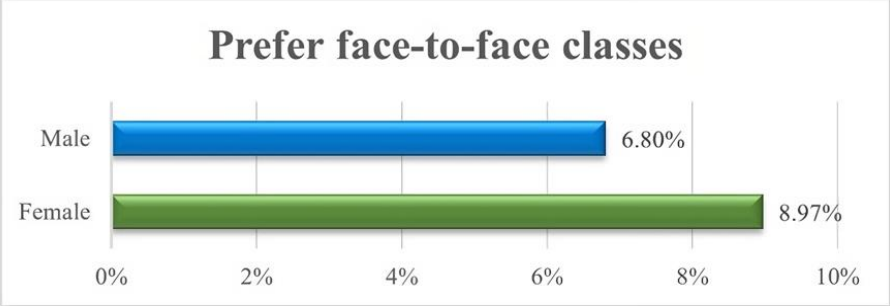

Figure 5. Students' preferences by gender & country (Source: Authors)

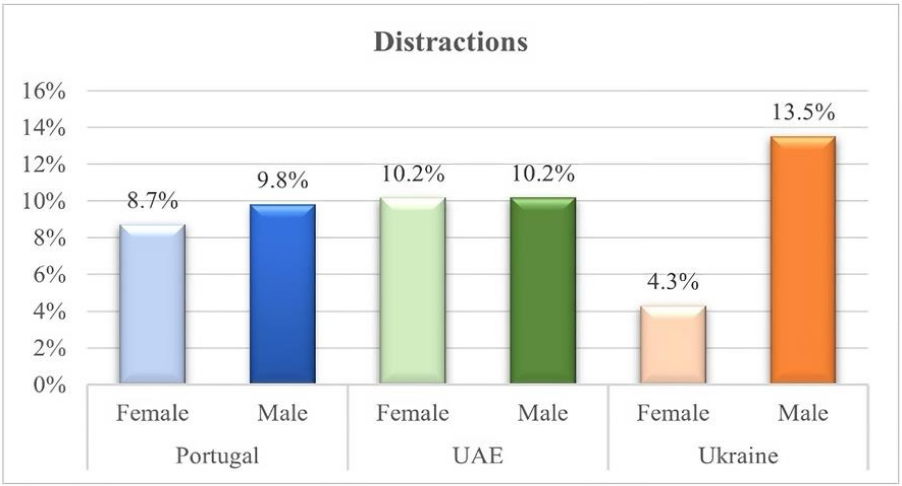

Figure 6. Comments about distractions during DE by gender & country (Source: Authors)

Theme 4: Preference for Face-to-Face Classes

In the three countries, females preferred face-to-face classes (**Figure 5**). Students expressed strong feelings regarding having online classes, as shown in the following comments. "I will not be taking any online courses again after the pandemic; so much trauma comes with it", "My comprehension skills are at 0% [online] while face to face is 100%", "Seeing the instructor face to face allows you to concentrate more, and being there with your peers gives you a great sense of motivation to focus and work on questions", and "Face-to-face classes encourages students to be more active. Also, I understand better in face-to-face classes."

Theme 5: Distractions During Distance Education

In Ukraine, more male respondents were concerned with distractions during DE courses (**Figure 6**). Some of the comments were, "It's hard to keep motivated at home, there are many distractions, and it's easier to slouch", "The main drawback for me with distance learning is lack of motivation and getting really distracted with non-academic material", and "It's difficult to separate from my kids and role as a mother while studying online. For instance, if I hear my daughter cry, I lose focus and want to know what happened, which is only natural."

Theme 6: Communication & Interaction

In Ukraine, concerns about communication and interaction were considerably greater for females than males. In the other two countries, females also had a higher percentage in this category (**Figure 7**). Some students described their displeasure with the online communication and interaction experience. "The problem with online courses is that each one speaks at the same time, people do not respect their turn in the chats, and it often becomes a big mess. In addition, the teacher is not always attentive to the chat and rarely answers our questions", "Being in distance learning is the same as watching television, something I do not like to do. There is no interaction, everything has a time to start and end, there is little room to interact and resolve doubts", "In the distance classes that I am being forced to attend, there is no interaction and dialogue between

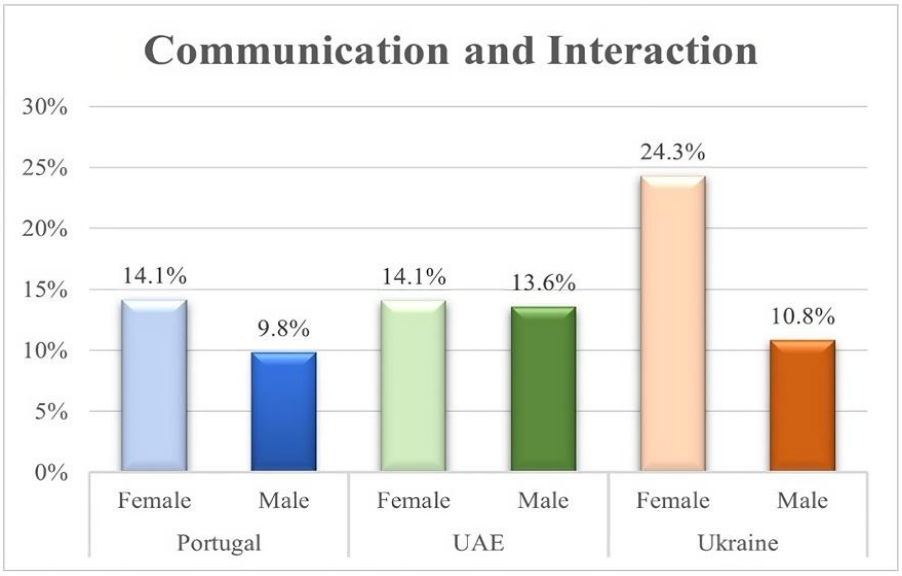

Figure 7. Communication and interaction comments by gender & country (Source: Authors)

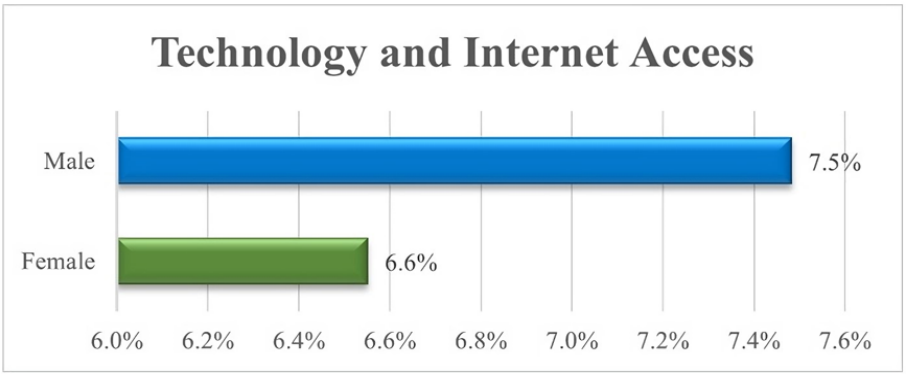

Figure 8. Technology & the Internet access comments by gender (Source: Authors)

classmates and between the class and the teacher [...]. I do not believe in any educational process that is not based on dialogue and interaction", and "This type of (online) teaching has increased the isolation of students and decreased cooperation between them."

Theme 7: Technology & the Internet Access

There was a slight gender difference in the three countries combined responses regarding technology and Internet access (**Figure 8**). Some of the issues were described by three students. "Not everyone has the opportunity to access computers and the Internet, which exacerbates social inequalities", "The issues that occur during class, from internet problems to blackboard crashing, studying and learning has become much more difficult", and "I think they should have access to more training and equipment to, with this support, be able to develop more activities online without so much work overload."

Theme 8: Time & Time Management

The only substantial gender difference in the time and time management category was for females in Portugal. There were almost twice as many comments by females (**Figure 9**). Participants in this category made positive and negative comments. Here are some examples. "Time management becomes quite difficult, especially for those who work full-time face-to-face and live in a family economy", "It is really difficult to stay motivated and encouraged, and the time management becomes extremely difficult to manage" , "For people who live far from the university and have to commute daily to campus, it is an asset in many ways (e.g., there is no need to spend so much money on transport passes and not so much time is wasted on travel)", and "A great advantage of DE for students is that they have the autonomy to study at any time they want."

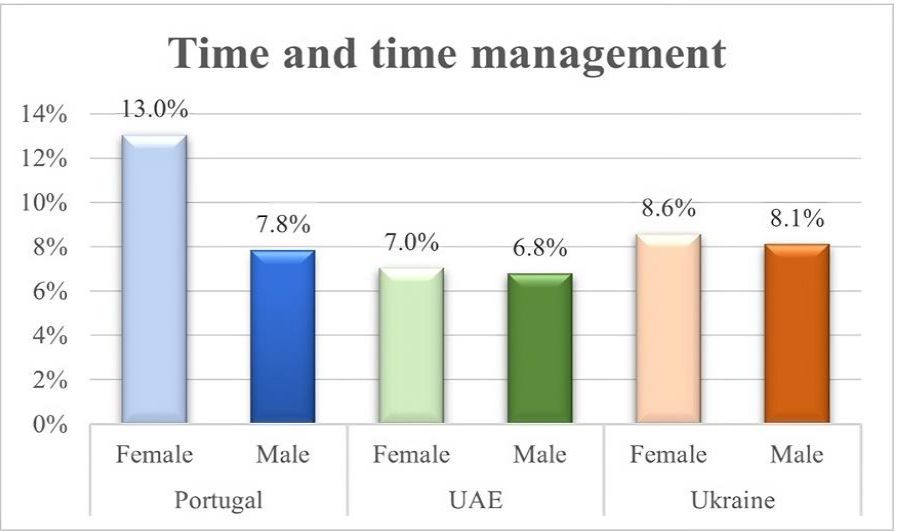

Figure 9. Time & time management category by gender & country (Source: Authors)

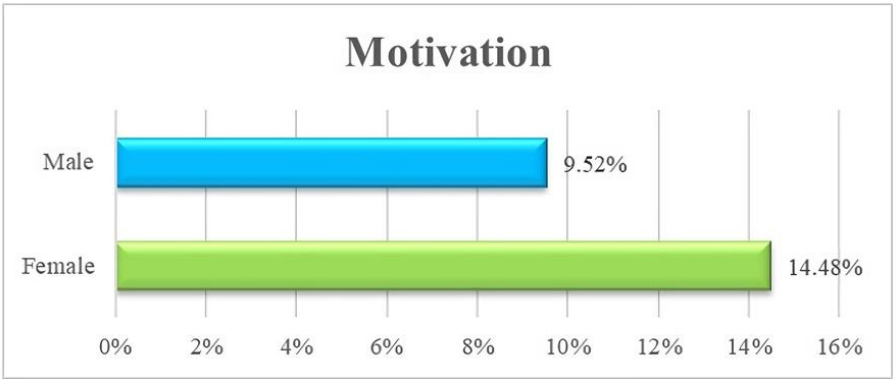

Figure 10. Comments about motivation made by gender (Source: Authors)

Theme 9: Motivation

Females mentioned motivation more often in all three countries (**Figure 10**). Three students indicated problems with motivation, as shown in the following two quotes. "I prefer being on campus as I tend to focus more and become motivated due to the studious atmosphere of the university campus", "I think it's a little demotivating because there's not so much interaction between teachers and students," and "The problem with online learning is that it's hard to have the motivation to learn and study in the comfort of my home. My whole life I was used to think of home as a place, where I can relax and not study. So this sudden change does not sit well with me, and I've been struggling with my grades and classes."

Theme 10: Self-Organization

The final category was self-organization. In Portugal and UAE, female comments about self-organization were almost twice as many as male comments. In Ukraine, the comments were almost equally frequent in the two genders (**Figure 11**).

In this category, many comments were made related to planning, being organized, and working independently. A few of those comments were, "Absolutely fundamental to manage time and personal learning", "It [online learning] also improved my time management, motivation and organization skills", "I confess that to have a good result, the student needs more dedication and planning than in classroom classes", "DE requires high self-organization, so before starting classes you should think carefully about ways of self-reflection to monitor the success of acquired knowledge, acquired skills and abilities", and "The distance destination, despite all its imperfections, forces us to have a greater capacity for concentration, self-control and to be more demanding with ourselves if we really want to learn."

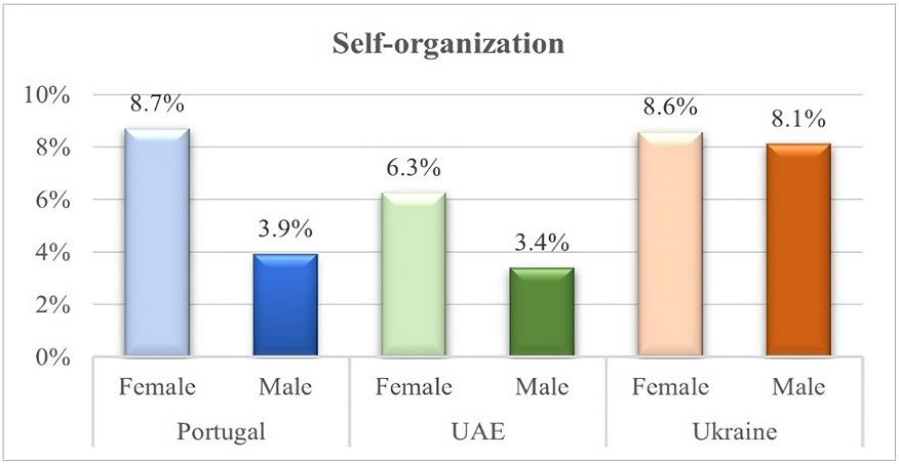

Figure 11. Category of self-organization by gender & country (Source: Authors)

Table 1. Summary of key findings

Theme	Gender	Country	Comments
Overall positive comments	Male	Portugal & Ukraine	Higher percentage of positive comments about DE experience.
Usefulness of DE	Male	UAE & Ukraine	Male students mentioned usefulness of DE more often.
	Female	Portugal	Female students mentioned usefulness of DE more often.
Adequacy of DE for content delivery	Male	UAE	More male students in UAE shared that DE was inadequate for some content [no major differences between two genders in Ukraine & Portugal].
Preference for face-to-face classes	Female	Portugal, UAE, & Ukraine	Females preferred face-to-face classes.
Distractions during DE	Male	Ukraine	More male respondents in Ukraine were concerned with distractions during DE courses [no major differences between two genders in Portugal & UAE].
Communication & interaction	Female	Ukraine	Concerns about communication & interaction were considerably greater for females in Ukraine [no major differences between two genders in Portugal & UAE].
Technology & the Internet access			No major differences between genders & three countries.
Time & time management	Female	Portugal	Only gender difference was for females in Portugal [no major differences between two genders in Portugal & UAE].
Motivation	Female	Portugal, UAE, & Ukraine	Females mentioned motivation more often in all three countries.
Self-organization	Female	Portugal & UAE	Females had almost twice as many comments about self-organization [no major gender differences in Ukraine].

A summary of the key findings is provided in **Table 1**.

DISCUSSION

Analyzing students' unrestricted responses regarding DE revealed several noteworthy findings. The response rate of 44% suggests a strong inclination among students to express their opinions on DE experience. Gender differences emerged, aligning with prior research indicating varying levels of engagement and interest in technology between males and females (Barrett & Lally, 1999; Ertl & Helling, 2011; Tyers-Chowdhury & Binder, 2021). Males showed greater interest in technology and expressed more positive opinions about DE.

Portuguese participants, irrespective of gender, demonstrated a more favorable perspective about DE than their counterparts in Ukraine and UAE. A previous multinational study also highlighted Portugal's consistently positive stance toward DE (Fidalgo et al., 2020). Despite their favorable views, Portuguese students were the least interested in enrolling in future DE courses, emphasizing a disconnection between attitude and future intentions.

Responses regarding the usefulness of DE often reflected the impact of the pandemic, with students appreciating the continuity of education while expressing a preference for face-to-face instruction. However, Emirati women deemed DE less useful than their counterparts in other countries, which is consistent with Bawa'aneh's (2021) study findings. Emirati participants raised concerns about the inadequacy of DE in delivering some content areas, similar to Almuraqab's (2020) discussion on Emirati students' perspectives.

There was a slight difference between genders regarding preference for face-to-face classes over DE. During the pandemic, DE courses were substituted for most face-to-face classes. The experience with DE may help explain students' opinions. Several studies have reported that after the pandemic, many IHEs are considering using BL format (Eveleigh, 2020; Saif Almuraqab, 2020; United Nations, 2020). Because of the increase in online courses, BL can satisfy students' interest in face-to-face and DE formats.

Distractions during online classes were noted by both genders, with women emphasizing family involvement and men highlighting technological distractions. The lack of preparedness for the abrupt transition to online formats during the pandemic may have contributed to distractions, time management, and study skills deficiencies.

Communication and interaction challenges were prominent, attributed to a sudden shift to the online environment and the replication of face-to-face models. Females expressed more concerns about interaction, possibly reflecting a greater need for connections in online environments (Marley, 2007).

The analysis also unveiled gender-specific aspects concerning technology, Internet access, motivation, and self-organization. Across the three countries, women consistently raised concerns about organizational skills, potentially influenced by differing cultural expectations regarding gender roles (Jung, 2012).

Participants in UAE made more comments than students in the other two countries about the inadequacy of DE in delivering some content areas. This is also suggested in a discussion about Emirati students' perspectives on DE (Almuraqab, 2020). The research done by this author, indicates that effective DE depends on the appropriateness of teaching materials. These teaching materials may not always be available in the online environment. Gender discrepancies may be related to types of course content that males and females have in their programs.

Regarding the time and time management category, males and females made a similar number of comments, except for Portuguese women. As noted in the quotes from students, they wrote positive and negative remarks. Participants felt both the time benefits and constraints of studying from home. Male comments were more focused on the positive aspects of time-related issues. Female comments were more diverse and included time with family and more control over their time.

Although technology is typically of more interest to men, both genders made similar remarks concerning technology and Internet access. Technological issues may have impacted males and females in the same manner.

Females made more frequent comments about lack of motivation. This may be related to males' attitudes and opinions about DE being more positive than females. This is consistent with a study by Bawa'aneh (2021) that found men are more favorable toward DE overall.

Comments about self-organization focused on the need to develop organizational and management skills to study online. Women in the three countries commented more about this topic than men, although the difference between genders in Ukraine is negligible. This may be due to different cultural expectations regarding the roles of each gender. A study by Jung (2012) found that women's family responsibilities seemed to be the main obstacle faced when taking DE courses.

A summary of the results and discussion is provided in **Table 2**. The results of this study may have implications for IHEs when revising and developing DE programs. Gender discrepancies strongly influence students' opinions and experiences with DE. This is consistent with previous studies about gender differences in online educational environments (Barrett & Lally, 1999) and may be due to male interest in the use of technology (Ertl & Helling, 2011) and the gap between genders regarding access to technology (Tyers-Chowdhury & Binder, 2021). Since DE seems part of the future, IHEs should address gender discrepancies to enhance student satisfaction.

Table 2. Summary of results, discussion, & supporting references

Category	Findings	Discussion/references
Gender differences	Males with a higher interest in technology expressed more positive opinions about DE. Females consistently raised concerns about communication, interaction, organizational skills, & motivation.	Male interest in using technology (Ertl & Helling, 2011).
Country perspectives	Portuguese participants, irrespective of gender, held a more favorable perspective of DE than their counterparts in Ukraine & UAE. Despite favorable views, Portuguese students were least interested in enrolling in future DE courses, highlighting a disconnect between attitude & future intentions.	Gap between genders regarding access to technology (Tyers-Chowdhury & Binder, 2021).
Usefulness of DE	Responses often reflected impact of pandemic, with students appreciating continuity of education. Emirati women deemed DE less useful compared to counterparts in other countries. Emirati participants raised concerns about inadequacy of DE in delivering some content areas.	Influence of pandemic context (being able to continue studying) (Oltean, 2020). Less time spent commuting to campus & fewer travel expenses (Berman et al., 2006). Males' interest in technology & more positive attitudes towards DE may contribute to their opinion about usefulness of DE (Bawa'aneh, 2021).
Distractions	Both genders noted distractions during online classes, with women emphasizing family involvement & men highlighting technological distractions. Lack of preparedness during pandemic contributed to distractions, time management, & study skills deficiencies.	Lack of preparation to move to online environment may have led to issues such as distractions (Oltean, 2020). Lack of time management & self-organization skills. Types of comments made by women were more focused on family involvement. Men's remarks revolved around being distracted by other technology interactions.
Communication & interaction	Challenges in communication & interaction were prominent, attributed to a sudden shift to online environment. Females expressed more concerns about interaction, possibly reflecting a greater need for connections in online environments.	Lack of sufficient or good online communication & interaction. Sudden move to the online environment did not allow stakeholders to prepare themselves. Teachers may not have provided sufficient opportunities for students to interact online with them & with their peers. More comments made by females may be due to women's greater need to establish connections in online environments (Marley, 2007).
Technology & the Internet access	Gender differences were not apparent; both genders made similar remarks concerning technology & the Internet access.	Similar remarks concerning technology & the Internet access. Technological issues may have impacted males & females similarly during lockdown & other stages of pandemic.
Motivation & self-organization	Females commented more frequently about lack of motivation & need to develop organizational & management skills for online studying. Differences in self-organization concerns between genders, influenced by cultural expectations regarding gender roles.	Female participants in this study often mentioned a lack of motivation. Males' attitudes and opinions about DE are usually more positive/favorable than females (Bawa'aneh, 2021). More positive opinions may lead to greater motivation.
Preferences post-pandemic	Considerations of BL, accommodating both face-to-face & online formats, emerged as a post-pandemic response.	There was a slight difference between genders regarding preference for face-to-face classes over DE. This aligns with gender overall positive comments about DE. Face-to-face format is most used and known by participants. In several studies, BL format is mentioned as most likely to be offered by IHEs in post-pandemic scenarios (Eveleigh, 2020; Saif Almuraqab, 2020; United Nations, 2020).

Although it was not the scope of this study to address cultural differences, the three participating countries have interesting differences worth mentioning. According to Hofstede Insights (2022), Ukrainians had a more pragmatic approach and a greater tendency to prepare for the future (before the Ukrainian war). This may explain the overall positive comments made by the Ukrainian students about DE. During the pandemic, Ukrainian participants could better assess the usefulness of DE and consider it an option for the future. Of the three countries, UAE students felt less threatened by the pandemic (Hofstede Insights, 2022), which may have contributed to the overall less positive comments regarding their DE experience. UAE participants were

least likely to "feel threatened by ambiguous or unknown situations and have created beliefs and institutions that try to avoid these" (Hofstede Insights, 2022).

Since DE has become more prominent due to the pandemic, it is clear that IHEs need to be concerned about student issues regarding the online format. In this study, females had an overall less positive opinion about DE. Since their ability to perform in online environments is similar to males (Jiang et al., 2018), females' less favorable views should be addressed by IHEs. Assessing students' needs and skills before designing online courses is a way for IHEs to deal with deficits and gender differences. According to Yukselturk and Bulut (2009), self-efficacy perception of online competence differs for men and women. "One way of looking at individual student characteristics is to look at their motivational beliefs and use of learning strategies" (Yukselturk & Bulut, 2009, p. 20). Faculty need support in creating content that is suitable and teaching strategies adjusted to the online environment (Yukselturk & Bulut, 2009). When developing DE courses, faculty need to include methods to deal with some of the most pressing issues reported by females, such as time management and motivation.

Regarding distractions, the types of comments made by women and men differed. This underlines the social and cultural differences between genders, which may affect the opinions and performance of males and females. Gender-specific support is not yet a generalized practice in IHEs that offer DE courses (Jung, 2012).

As in the distractions category, different needs of males and females can be addressed with diverse strategies, such as creating small study groups for women and establishing more male interaction opportunities (Ma & Yuen, 2011). Despite the gender differences (Gebhardt et al., 2019b), they are not frequently incorporated when developing online courses and programs (Jung, 2012).

CONCLUSIONS

This study contributes valuable insights into students' opinions and experiences with DE in Portugal, Ukraine, and UAE. The gender disparities in opinion, attitudes, and challenges associated with DE highlight the need for a comprehensive approach by IHEs to develop and revise DE programs.

Instructors and administrators can create a more inclusive and supportive DE environment that addresses gender concerns by implementing specific strategies. The following are some recommendations:

1. Gather student feedback regarding their preferences and needs in DE environment to ensure that program development aligns with the evolving gender expectations.
2. Based on student data, develop orientation programs that address gender differences, including time management skills, distractions, study skills, and other concerns.
3. Use enhanced communication strategies to address gender differences. This could involve discussion boards, online office hours, and group assignments.
4. Provide cultural and gender difference awareness training for instructors and administrators so they can offer appropriate support to students.

Future research could employ a longitudinal approach to examine changing gender perceptions and experiences of DE over a more extended period. This would offer a more comprehensive perspective on how learners adapt to and understand DE. Also, a comparative analysis with post-pandemic data could assess if students' attitudes and opinions towards DE remain the same or have changed. Another future study might investigate gender differences in DE in a larger number of countries to examine cultural variation. All these studies could provide strategies to revise and develop DE courses.

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