INTERNATIONAL JOURNAL OF ACADEMIC RESEARCH IN PROGRESSIVE EDUCATION & DEVELOPMENT

OPEN ACCESS JOURNAL

Vol 11, Issue 4, (2022) E-ISSN: 2226-6348

A Gender Investigation on Malaysian Learners' Academic Online Discourse

Roslinda Abdul Wab

Faculty of Education, UiTM Puncak Alam Campus Malaysia

To Link this Article: http://dx.doi.org/10.6007/IJARPED/v11-i4/15871 DOI:10.6007/IJARPED/v11-i4/15871

Published Online: 11 December 2022

Abstract

The incorporation of new technologies into Malaysian education system via online learning has given rise to the use of academic online discussions as a platform for teaching and learning. However, the question has always revolved around the issue whether learners despite gender differences equally benefit from the online learning environment as promoted by earlier democracy theorists. This study explored gender influences on the way Malaysian learners interact by examining their text-based postings from online discussion forums of a course. Contributions by 31 introductory literature learners (26 females, 5 males) were collated. The findings accentuated the fact that the online classroom in Malaysian distance education reflects a gendered learning community, specifically a female domain, which contradicts the well-known Western belief that it has been either equal or a male one.

Keywords: Computer-Mediated Communication, Online Learning, Gender Studies, Technology, Academic Online Discourse.

Problem Definition

Since M*alaysia's Higher Education Blueprint* 2015-2025 advocates the utilisation of technologies in the Malaysian educational system, traditional classrooms have greatly changed. The online instructional method has become an integral part in the new teaching and learning environment resulting in frequent use of online discussion forums. This mainly took place after the COVID-19 outbreak, when most higher learning institutions resorted to online distance learning or ODL. Nonetheless, whether the online forums are equitable for both male and female learners has been a major concern among researchers and educators. Because learners' active interaction and engagement (Martin & Borup, 2022) define online learning, conducting gender investigation on learners' interaction patterns in online courses is deemed appropriate, as suggested by (Idrizi et al., 2020). Although empirical evidence demonstrates that deep learning is facilitated through online learning, learners' participation in such electronic discussions is still lacking. The researchers asserted that the reason for this could possibly be associated with how the two genders interact differently.

Nonetheless, earlier theorists have posited that the online environment promotes equality due to inhibited social cues such as gender. Herring, on the contrary, made a fundamental finding of gender divide in both academic and non-academic online discourse from her multiple studies (1992, 1993, 1994, 1996, 2000). Her proponents (Bruns, 2010; Kapidzic & Herring, 2011; Atai & Chahkandi, 2012; Herring & Stoerger, 2013) also produced

findings that echoed her claim. These studies have evidently rejected the democratic paradigm suggesting that discourse patterns, which depict gender imbalance in conventional classroom-based settings, are also transferred into the online format.

Although gender differences in computer-mediated communication have been extensively researched, only a handful address the issue in academic online discourse. To illustrate this, a review carried out by Prinsen et al (2007) only found six relevant titles on gender differences in academic online patterns of interaction as a result of their literature search in Education Resources Information Centre (ERIC) from post-1990 publications. However, the trend of male domination and female avoidance in academic online contributions reflects similar observation in CMC setting. There are also a few studies which showed no significant differences in which the female learners achieve parity of interactions with their male counterparts (Atai & Chahkandi, 2012; Burtis, 2017) and others showed mixed results of similarities and differences to a certain extent (Guerra, 2015; Sullivan et al., 2015; Graddy, 2019; Lin et al., 2019). The mixed and conflicting evidence indicates that the issue of gender differences in patterns of online interaction remains complex. Hence, gender differences in Malaysian learners' online discourse require interrogation because they may have learning consequences as presented by past studies (Yukselturk, 2010; Cerezo et al., 2016).

Online learning must strive to provide an equal environment to both genders. As Nandi et al (2012) argued, learner contributions to online discussions strengthen their voice and expose them to various perspectives. Such meaningful experiences through productive discussions must be encouraged if the learners are expected to make the most from the online environment. Thus, it cannot be assumed that the Malaysian online learning platform fosters an equal environment for both its male and female learners nor allows gender bias to manifest itself in the Malaysian academic online discourse. Only by having a thorough understanding of gender differences in the patterns of interaction within the Malaysian academic online discourse, an effective gender inclusive learning environment in Malaysia can be created. Henceforth, this study extends and augments gender research by adding to the body of knowledge and uncovering whether the Malaysian online environment depicts a gendered domain.

Literature Review

Across time, existing literature has painted a mixed picture of how the two genders interacted differently in an online learning environment (Tomai et al., 2014; Guerra, 2015; Sullivan et al., 2015; Graddy, 2019; Lin et al., 2019). Studies have revealed that Malaysian learners' participation in online learning is dishearteningly limited (Pramela, 2010; Bazid & Umar, 2014) despite positive correlation between online interaction and academic performance have been found (Xia et al., 2013; Zheng & Warschauer, 2015), a research is needed to seek whether a gendered interaction prevails in the Malaysian online learning.

Guerra's (2015) analysis of postings revealed significant female styles of writing a higher volume of shorter posts, presenting more personal opinions and examples, expressing themselves more openly, participating more voluntarily, and giving more responses. Male styles, in contrast, were detected considerably for writing lengthier posts (to impress and show understanding) and presenting facts from more reliable sources. Hence, it is not surprising when Lin et al (2019) concluded from their investigation that conveys likewise results by designating females' posts as personal and males' as impersonal. Nevertheless, these findings also inferred that females seek collaboration and support in their online

interaction. Morante et al (2017) have agreed that such connected interaction caused the females to outperform the males academically. Bolliger and Halupa (2018) associates females' increased interaction in the virtual discussions to their female nature which depicts enjoyment of socialising, networking, and intimacy.

Other evidence of inequalities further shows that the online format is male-dominated following males' higher frequency of posting messages, longer online access, and tendency to introduce more new topics (Atai & Chahkandi, 2012). Their active engagement has been claimed to exhibit dominance that discourages females' involvement. Females' agreement and contribution, on the other hand, are prone to be devalued and ignored by others, especially men (Guiller & Durndell, 2007). As a result, females are noted to write fewer posts or initiate less new topics because they either get fewer responses or hardly any, which may lead them to drop out of conversations (Herring, 2003).

Power dynamics and biases are claimed to have linked to gendered interaction styles in academic online discussions (Prinsen et al., 2007). Females' tendency of being sensitive, accepting and quiet is believed to be due to their supportive and follower role (Bruns, 2010) which are perceived by Herring (1994) as a form of oppression and powerlessness. The male subjects, on the contrary, presented themselves as leaders in initiating conversations and being confident. Surprisingly, Carpenter (2006) revealed that males, as often as their female counterparts, had disclosed personal information and provided encouraging comments. As for Atai and Chahkandi (2012), they have differently reported that there was no significant difference in gender-related posting styles. As contradicting as the results appear, the empirically inadequacy of data in gender communication styles online has prompted the confluence of the present researcher's interest to delve into research in this area.

Theoretical Framework

The theoretical framework for this study centred on two main theories, namely the Democracy Theory by the earlier theorists such as Turkle (1995); Stone (1995) in oppose to Difference/Cultural Theory by Tannen (1991) of face-to-face interaction which was later extended to CMC studies by (Herring, 1994). As this study looks at learners' contribution in terms of online interaction, these theories, being associated with CMC discourse, are applicable to academic online discussions. The Difference/Cultural Theory (1991) was first developed based on Tannen's gender study of face-to-face interaction. The theory claims that males and females use different interaction styles as they communicate hence acknowledging men and women belonging to equally different "subcultures".

Meanwhile, in the early period of distance education, online interaction has been viewed as democratic which provides equal access to information and communication to both genders due to its genderless form. This is in accordance to the Democracy Theory which considers a discourse as democratic if it allows its participants to have (1) *access to a means of communication*, and (2) *the right to communicate equally, free from status constraints* (Herring, 1993: p.2). The lack of face-to-face cues are said to have freed online classrooms from power structures of inequality prominent in traditional classrooms. However, more and more studies have revealed that as the mode of distance learning expands, gender differences emerge.

In oppose to the Democracy Theory, Herring (1993) documented a stylistic variety in an online academic discourse. Observing similar gender differences in patterns of online interaction with those in face-to-face interaction, Susan Herring extended Tannen's theory into CMC. In line with the Difference Theory, Herring's (1994) study revealed glaring

distinctions of female communication style (e.g. *attenuated assertions, apologies, rhetorical questions*) and men's (e.g. *strong assertions, self-promotion, challenges*). She attributed the differences to dissimilarity in interaction ethics between males and females. According to her, while females express value for the wants and needs of others, males value freedom from "censorship, forthright, and open expression, and agonistic debate as a means to advance the pursuit of knowledge" (p.7).

Due to the gender differentials in online norms and practices, like Tannen (1994), Herring (1996) also noted that the two cultures may conflict thus create a hostile cyberspace for females. In fact, her extensive studies (Herring, 1994, 2000, 2003) uncovered that the interaction styles of the minority gender would adhere to the predominate gender hence resulting in CMC being viewed as male-dominated. Herring also argued that the different interaction patterns are culturally-determined. She further asserted that "with gender identity known, gender stereotyping and gender-based discrimination carrying over from the 'real world' are free to operate" (1999, p.152).

On that note, this study hinged on Herring's claims that the cultural impact of gender act as influential factor in the existence, as well as the nature of the differences in the interaction patterns of Malaysian distance learners' on academic online discussion forums should they be found. This study is hoped to redress the ambiguity in gender studies to signify learners' learning experience which can be linked to academic performance in future studies. This research is expected to fill the gap and add to the body of knowledge for online learning discourse from a gender perspective for academic scholars to build upon and expand on the findings of related theories.

Methodology and Analysis

Given the exploratory nature of this study, a quantitative method of content analysis was deemed appropriate to gain an understanding of the actual practices. The analysis permits the data from the academic online discussion forums to be analysed at two levels. One is a quantitative descriptive analysis of the interaction styles performed by both genders at surface level, while another is an interpretive analysis of power relations attached to the different gender patterns (Dornyei, 2007). The CA technique provides a thorough explanation to the area of research. As suggested by Sandelowski (2010) if the two analysis agree the final result may be strengthened.

Besides that, this study undertook a case study approach as it allows an issue to be explored through one or multiple cases within a context, in this case are academic online discussions forums, through detailed description (Creswell, 2013). The sample of the study were 31 (26 females, 5 males) undergraduate learners of the education faculty in Universiti Teknologi MARA (UiTM), Shah Alam. Their interactions were extracted from asynchronous online discussions forums (i.e., i-Class) from September to December, 2020. As the learners were culturally and academically homogeneous, a purposeful, homogenous sampling was used. The uneven balanced of gender reflects the natural scenery of enrolment in Malaysian universities where female learners tend to outnumber male learners.

Based on Herring's Cultural/Difference Theory, the important variables studied in the present research were identified. The independent variable considered in the learners' online discourse was *gender*, and the approach in assessing learners' interaction patterns was identified through their "posting behaviour". The occurrence of each style in each message was measured by frequency and percentages to determine males and females' usage. Next, each message was classified into four major families: female only (females' communication

styles only), male only (males' communication styles only), mixed (both males' and females' communication styles), and neutral (neither males' nor females' communication styles). The purpose was to identify gender preference of interaction pattern within similar gender and across genders. Herring's approach to investigating gender in communication styles has been employed by many CMC scholars, including Bruns (2010), as well as Atai and Chahkandi (2012).

Guiller and Durndell's (2007) framework of stylistics (except for item 15), was drawn from previous studies (e.g. Herring, 1994; Savicki et al., 1996), and adopted in this study. The term stylistic variables or stylistics refers to "rhetorical and linguistic strategies" employed by males and females in CMC interaction, as used by Herring (1993) and the present study.

Findings and Analysis

Table 1 displays a summary of the interactions that occurred in TSL645 course's discussion forums. The findings involved counting the number of times each learner, both males and females, spoke in both weeks, Week 3 and 6.

Table 1
Academic Online Discussion Postings

Week	Number of actual posts	Number of posts in study
3	118 (F=106, M=12)	40 (F=35, M=5)
6	49 (F=37, M=12)	31 (F=26, M=5)
TOTAL	167 (F=143, M=24)	71 (F=61, M=10)

The table above shows gender differences in both number of actual posts and posts in this study. In both weeks, female learners posted 143 (85.6%) actual messages to *i-Discuss*, whereas males posted only 24 (2.14%). As for the number of posts examined in this study, female learners made 61 postings (85.9%), while males made 10 (14.1%). Thus, in terms of volume of interactions, female learners in *i-Discuss* dominated this environment. However, it is also important to note that, as this study focused on learner-learner interactions only, hence out of the 31 learners, only one male learner's interaction was identified in the online discussions, while 13 female learners interacted in various ways. Half (N=13) of the total number of female learners (N=26) and 4 out of 5 males did not interact with other learners in the online discussions. They participated in the interaction either by responding directly to the Learning Facilitator or merely contributed content to the discussion, which were not the focus of the present study.

The 71 learner posts were identified as 71 units of meaning. These units of meaning were each categorised into one of the fourteen communication styles. Table 2 shows the frequency and percent of the total for each interaction. As can be seen in this table, the most common interaction pattern used by learners in the discussion forums was Presuppositions with 23.9% of all of the units of meaning. The least common communicative styles used by learners were Disagreement, Reference to Own Emotions, and Strong Assertions with only 1.4% each of the units of meaning.

Table 2
Summary of Learner Interaction Patterns

Communication Styles	Postings (N = 71)	
	Frequency	Percent
Agreement	3	4.2
Challenging	5	7
Compliments	6	8.5
Controversial	5	7
Disagreement	1	1.4
Emphatic	2	2.9
Humour	7	10
Personal Experience	3	4.2
Polite forms	3	4.2
Presuppositions	17	23.9
Reference to Own Emotions	1	1.4
Self-Disclosure	3	4.2
Strong Assertions	1	1.4
Supportive Statement	14	19.7
TOTAL	71	100

A more expressive way of viewing these findings is by examining these interactions in the online discussions according to gender use. Table 3 exhibits learner communication styles according to gender. It has been found that female distance learners used thirteen types of interaction except for strong assertions. This indicates that females are more versatile in their approach to learning. It is also worth noting that female distance learners produced significantly higher presuppositions and supportive statements (N=8, 30.8% each), and compliments (19.2%). This means that female learners are more supportive, emotional, and personal when interacting with their peers.

Meanwhile, male learners only made contributions consisting challenges, controversies, humour, strong assertions, and, supportive statements, i.e., N=1 (20%) each. This indicates that male learners are negative and aggressive in their approach to learning.

Table 3
Gender-Linked Interaction Patterns

Interaction Pattern	Female (N = 26)		Male (N= 5)	
	Frequency	Percent	Frequency	Percent
Agreement	3	11.5	0	0.0
Challenging	3	11.5	1	20.0
Compliments	5	19.2	0	0.0
Controversial	3	11.5	1	20.0
Disagreements	1	3.8	0	0.0
Emphatic	2	7.7	0	0.0
Humour	3	11.5	1	20.0
Personal Experience	3	11.5	0	0.0
Polite forms	3	11.5	0	0.0
Presuppositions	8	30.8	0	0.0
Reference to Own Emotions	1	3.8	0	0.0
Self-Disclosure	3	11.5	0	0.0
Strong Assertions	0	0.0	1	20.0
Supportive Statement	8	30.8	1	20.0

Conclusion

These findings echoed the data from Guiller and Durndell's (2007) analysis that concluded females use a collaborative interaction style as they are focused on harmonious relationships and group consensus. Valenziano (2008) subjected the female style to their active social exchange role whereby their postings emphasised on social interactions and comments on other learners' significant contributions. Constantly seeking connectedness in learning (Du et al., 2015), their supportive role is believed to have resulted in the females outperforming the males, academically (Lowes & Lin, 2015).

The findings with regards to male learners' interaction patterns seems to duplicate the findings from previous studies (Guiller and Durndell, 2007; Herring's work, 1993, 1994, 2000, 2003) where males were more likely to employ authoritative style and respond negatively than females. According to Guiller and Durndell (2007), the male style is based on their inclination to value status more through gender role socialisation which promotes competitiveness. This is because male learners presented themselves as confident by taking up a leadership stance (Bruns, 2010). Hence, it is not surprising that Lin et al (2019) through their investigation designated the females' posts as personal and males' as impersonal.

Regardless that past studies have concluded that males are more likely to express disagreement than females and that females are more likely to be more emphatic, results of the data from this study did not support these. According to Herring (1993), the reverse practice in gender interaction patterns could be due to female taking up a male style so that they will "be taken seriously" while male employed a female style to soften their approach so that they would not be considered as "unpleasant or aggressive" (p.6). The mix of interaction styles were very much expected as male learners made up the minority group in this study. Hence, there is a possibility that the change in the male interaction style was due to their adherence to the predominant gender in the group, as Herring suggested in several of her studies (2000, 2003). These findings confirmed that in any interactions, be it online or face-

to-face, the speaker tends to adapt their interaction styles to the styles of the interlocutors. Even though both genders seem to adopt the opposite style, they do so but at a minimal level.

In sum, the findings from this study illustrate that the differing interaction styles do influence the knowledge sharing in mixed-gender interactions of an academic online discourse, and that the online classroom in Malaysia reflects a gendered learning community, specifically a female domain.

Pedagogical Considerations

This study was aimed to identify gender differences in the learner interaction patterns of an online undergraduate course from a Malaysian university. The findings have implications for both online learning instructors and instructional designers for better designing and implementing of online courses, especially when online distance learning is here to stay after the COVID-19 pandemic. Understanding learner interactions provides feedback to instructors and designers in understanding overall gender interaction behaviour in an online course. They can comprehend better on how both genders can benefit from the online discussions through their group interactions.

Implications for Future Research

As evidenced in previous studies on gender differences in academic online interaction, conflicting results can appear discouraging. Most scholars recommended for a comprehensive method as past studies relied greatly on either surveys or text analysis of learner discussions. failed to paint a whole picture of how actual interaction occurs between genders on online platforms. Although this study mainly employed tried and proven classification system for content analysis, this study can be considered a fruitful replication as it is an improvised version of the early works in this area. The next replication of study using a combination of qualitative and quantitative methods could prove useful in future studies attempting to identify differences in online interaction patterns between male and female learners.

As the findings from this investigation are limited to the study sampled, hence, there is a necessity for studies to be conducted on larger and more diverse samples so that additional insights and perhaps novel findings may contribute to the validity of the analysis of framework adopted in this study. While this study merely focused on a group of learners of an online course from a particular university, it would be interesting for the future research to conduct similar investigations on a bigger scale, such as involving learners from various disciplines or multiple universities.

Another useful recommendation would be to investigate gender differences of learner-learner interaction alongside the other two aspects of online interaction as cited in Moore's Transactional Distance Theory, i.e., learner-instructor interaction and learner-content interaction. This would give a more robust result on identifying the different types of gender interaction patterns in online learning. By exploring all three aspects of learner interaction would definitely represent a typical online discussion forum involving the two genders.

Acknowledgement

The present researcher would like to extend her appreciation to the Universiti Teknologi MARA for the financial support and providing the facilities for this research.

Corresponding Author
Roslinda binti Abdul Wab
Faculty of Education, Universiti Teknologi MARA Puncak Alam Campus, Malaysia
Email: roslinda9130@uitm.edu.my.

References

Atai, M. R., & Chahkandi, F. (2012). Democracy in computer-mediated communication: Gender, communicative style, and amount of participation in professional listservs. *Computers in Human Behavior*, *28*(3), 881-888. doi:10.1016/j.chb.2011.12.007

Bazid, N. I., & Umar, I. N. (2014). Students' Level of Participation, Critical Thinking, Types of Action and Influencing Factors in Online Forum Environment. *World Academy of Science, Engineering and Technology, International Journal of Social, Behavioral, Educational, Economic, Business and Industrial Engineering*, *8*(12), 3685-3689.

Bolliger, D. U., & Halupa, C. (2018). Online student perceptions of engagement, transactional distance, and outcomes. *Distance Education*, *39*(3), 299-316. doi: 10.1080/01587919.2018.1476845

Bruns, J. A. (2010). *Democratic or Gendered Domain: Communication and Learning Styles in the Online Classroom* (Doctoral dissertation). Retrieved from cornerstone.lib.mnsu.edu/cgi/viewcontent.cgi?article=1256&context=etds

Burtis, S. M. (2017). *Gender differences in discussion strategies of asynchronous online undergraduate psychology major dents* (Doctoral dissertation, Walden University).

Carpenter, P. (2006). *Cyber connections across age and gender differences: How communication technologies enhance social communication in learning communities in online college courses* (Doctoral dissertation). Retrieved from http://repository.lib.ncsu.edu/ir/bitstream/1840.16/4904/1/etd.pdf

Cerezo, R., Sanchez-Santillan, M., Paule-Ruiz, M. P., & Nunez, J. C. (2016). Students' LMS interaction patterns and their relationship with achievement: A case study in higher education. *Computers & Education*, *96*, 42-54. DOI: 10.1016/j.compedu.2016.02.006

Creswell, J. W. (2013). *Qualitative Inquiry & Research Design: Choosing Among The Five Approaches.* Thousand Oaks, CA: Sage Publications, Inc.

Dornyei, Z. (2007). *Research methods in applied linguistics*. Oxford: OUP.

Du, J., Ge, X., & Xu, J. (2015). Online collaborative learning activities: The perspectives of African American female students. *Computers & Education, 82,* 152-161. doi: 10.1016/j.compedu.2014.11.014

Graddy, D. (2019). Gender and Online Discourse in the Principles of Economics. Online Learning.

Guerra, E. I. (2015). Talking or typing?: gender differences in communication patterns of face to face versus online courses (Master's thesis).

Guiller, J., & Durndell, A. (2007). Learners' linguistic behaviour in online discussion groups: Does gender matter? *Computers in Human Behavior*, *23*(5), 2240-2255. doi:10.1016/j.chb.2006.03.004

Herring, S. C. (1992). Gender and participation in computer-mediated linguistic discourse. ERIC Clearinghouse on Adult, Career, and Vocational Education, Philadelphia, PA.

Herring, S. C. (1993). Gender and democracy in computer-mediated communication. *Electronic Journal of Communication 3,* 5-10.

Herring, S. C. (1994). Gender differences in computer-mediated communication: bringing familiar baggage to the new frontier [online]. Retrieved from

http://www.eff.org/pub/Net_culture/Gender_issues/cmc_and_gend

Herring, S. C. (1996). Posting in a different voice. In C. Ess (Ed.), *Philosophical perspectives on computer-mediated communication*. New York, NY: State University of NY Press. R Retrieved from http://www.stumptuous.com/comps/herring.html.

Herring, S. C. (1999). The rhetorical dynamics of gender harassment on-line. *The Information Society*, *15*(3), 151–167. doi: 10.1080/019722499128466

Herring, S. C. (2000). Gender differences in CMC: Findings and implications. CPSR Newsletter, 18(1). Retrieved from http://www.cpsr.org/issues/ womenintech/herring /view?searchterm=Herring).

Herring, S. C. (2003). Gender and power in online communication. *The handbook of language and gender*, 202-228.

Herring, S. C., & Stoerger, S. (2013). Gender and (A)nonymity in Computer-Mediated Communication. (In press, 2013). In J. Holmes, M. Meyerhoff, & S. Ehrlich (Eds.), *Handbook of Language and Gender, 2nd edition*. Hoboken, NJ: Wiley-Blackwell Publishing.

Idrizi, E., Filiposka, S., & Trajkovikj, V. (2020, September). Gender differences in online learning. ICT Innovations 2020 Conference. http://hdl.handle.net/20.500.12188/9485

Kapidzic, S., & Herring, S. C. (2011). Gender, communication, and self-presentation in teen chat rooms revisited: Have patterns changed? Journal of Computer-Mediated Communication, 17, 39–59. Retrieved from http://onlinelibrary.wiley.com/doi/10.1111/j.1083-6101.2011.01561.x/full

Lowes, S., & Lin, P. (2015). Learning to learn online: Using locus of control to help students become successful online learners. *Journal of Online Learning Research, 1*(1), 17-48.

Lin, Y., Dowell, N., Godfrey, A., Choi, H., & Brooks, C. (2019, March). Modeling gender dynamics in intra and interpersonal interactions during online collaborative learning. In *Proceedings of the 9th international conference on learning analytics & knowledge* (pp. 431-435).

Martin, F., & Borup, J. (2022). Online learner engagement: Conceptual definitions, research themes, and supportive practices. *Educational Psychologist*, *57*(3), 162-177. doi:10.1080/00461520.2022.2089147

Morante, A., Djenidi, V., Clark, H., & West, S. (2017). Gender differences in online participation: Examining a history and a mathematics open foundation online course. *Australian Journal of Adult Learning*, *57*(2), 266-293.

Nandi, D., Hamilton, M., Chang, S., & Balbo, S. (2012). Evaluating quality in online asynchronous interactions between learners and discussion facilitators. *Australasian Journal of Educational Technology*, *28*(4), 684-702. https://doi.org/10.14742/ajet.835

Pramela, K. (2010). Participation in online forums: Some insight of Malaysian distance learners. *Turkish Online Journal of Distance Education, 11*(4), 181–192

Prinsen, F. R., Volman, M. L. L., & Terwel, J. (2007). Gender-related differences in computer-mediated communication and computer-supported collaborative learning. *Journal of Computer Assisted Learning*, *23*(5), 393-409. https://doi.org/10.1111/j.1365-2729.2007.00224.x

Sandelowski, M. (2010). What's in a name? Qualitative description revisited. Res. Nurs. Health 2010; 33: 77–84. https://doi.org/10.1002/nur.20362

Stone, A. S. (1995). The war of desire and technology at the end of the mechanical age. Cambridge, MA: MIT Press.

Sullivan, F. R., Kapur, M., Madden, S., & Shipe, S. (2015). Exploring the role of 'Gendered

discourse styles in online science discussions'. *International Journal of Science Education*, *37*(3), 484-504. https://doi.org/10.1080/09500693.2014.994113

Tannen, D. (1991). *You just don't understand: Women and men in conversation* (pp. 1990-1990). London: Virago.

Tannen, D. (1994). Gender and discourse. New York: Oxford University Press.

Turkle, S. (1995). Life on the screen. New York, NY: Touchstone.

Tomai, M., Mebane, M. E., Rosa, V., & Benedetti, M. (2014). Can computer supported collaborative learning (CSCL) promote counter-stereotypical gender communication styles in male and female university students?. *Procedia-Social and Behavioral Sciences*, *116*, 4384-4392. doi:10.1016/j.sbspro.2014.01.952

Xia, C., Fielder, J., & Siragusa, L. (2013). Achieving better peer interaction in online discussion forums: A reflective practitioner case study. *Issues in Educational Research*, *23*(1), 97-113.

Yukselturk, E., & Bulut, S. (2009). Gender Differences in Self-Regulated Online Learning Environment. *Educational Technology & Society, 12* (3), 12–22.

Zheng, B., & Warschauer, M. (2015). Participation, interaction, and academic achievement in an online discussion environment. *Computers & Education*, *84*, 78-89. doi:10.1016/j.compedu.2015.01.008