

A Comparative Study on Attitudes towards the Educational Use of the Internet between Male and Female Students of the M.Ed Programme at Bangladesh Open University

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Paper Info [to be completed by AJODL Secretariat]:

Received: 14 Oct 2025 | Revised: 21 Dec 2025

| Accepted: 28 Jan 2026 | Available Online: 28 Jan 2026

DOI: <https://doi.org/10.64233/CTUY6140>

Citation:

Alam, R. (2025). a comparative study on attitudes towards the educational use of the internet between male and female students of the M.Ed programme at Bangladesh Open University. *ASEAN Journal of Open and Distance Learning*, 17(2), 131-145, <https://doi.org/10.64233/CTUY6140>

Abstract

This study was carried out to compare the attitudes of male and female students enrolled in the distance-mode Master of Education programme at Bangladesh Open University towards the educational use of the internet. A quantitative research method was used to collect data from 480 students (240 males and 240 females) across eight study centres from eight divisional cities representing the eight regions of Bangladesh. A questionnaire consisting of 10 statements adapted and modified from the scale developed by Usun (2003) was administered to measure students' attitudes. Data were analysed on SPSS version 25, focusing on mean (M), standard deviation (SD), and t and p values. Key findings showed that in the matter of using the internet for educational purposes, both male and female students agreed with nine items ($M > 3.00$) and disagreed with only one ($M < 3.00$). Independent samples t-tests indicated that there were significant differences by gender in eight of the 10 attitude dimensions. The item, "Internet proficiency is necessary for students" received the highest scores from both male ($M = 4.14$) and female ($M = 4.28$) participants, while the item, "I conduct research using the internet" received the lowest scores from both male ($M = 2.37$) and female ($M = 2.16$) participants. The standard deviation for each of the 10 statements was not statistically significant ($SD < 0.50$), suggesting that the average distance between the data points was quite low. To comprehend the disparities in attitudes between male and female students, a more in-depth analysis of the relationships between genders and distance learning students' attitudes regarding the use of the internet is warranted.

Keywords: attitude, Bangladesh Open University, distance education, educational use of the internet, gender difference, M.Ed Programme

1. Introduction

The internet has become ingrained as part of modern human existence, representing our most advanced and efficient form of communication while also providing lifelong and immediate learning opportunities regardless of place or time (Antonijevic, 2018). Several research have demonstrated how access, digital competency, prior experience, and institutional support have had an impact on students' attitudes on internet use (Hossain et al., 2023; Maisha & Shetu, 2023). Information-gathering, friendship-building, and obtaining knowledge are just a few among various uses of the internet (Fang & Yen, 2006; Simsim, 2011). Bullock (2004) identified that students' attitudes are a significant factor influencing the use of the internet in open and distance learning (ODL); it is considered crucial for overcoming educational gaps and connecting geographically separated students at ODL institutions like Bangladesh Open University (BOU).

The Master of Education (M.Ed) programme was launched by BOU's School of Education in 2000 in response to Bangladesh's growing need for teacher education. The programme thus aims to create skilled manpower in the education sector through a suitable higher education degree, which aims to contribute to the overall improvement of Bangladeshi education through modernisation and abiding by international standards, as well as boosting national development by integrating education into socio-economic development. The M.Ed programme is currently offered at 18 of BOU's study centres. Like other distance-mode programmes at BOU, these study centres are responsible for organising tutorial sessions by selecting and managing a group of efficient tutors. BOU uses internet-oriented technologies in conducting distance-mode programmes to give adult learners and in-service teachers the flexibility and accessibility to pursue such professional degrees as the M.Ed. Learning and assessment in distance education are facilitated by the internet and other information communication technologies (ICT) (Alonso-Diaz & Yuste-Tosina, 2015). Students can participate in active learning through the internet (Clark & Mayer, 2016). According to several studies, the consistent use of the internet in distance-mode teacher education programmes produces more favourable attitudes towards technology (Birişçi et al., 2009; Teo, 2008).

Gender is one of the most important factors influencing attitudes, confidence levels, and usage patterns involving online learning resources, including the internet. Self-stated attitudes towards the use of the internet can help address potential gender inequalities (Karakainen et al., 2017). However, these only give approximate representations of actual performance (Honicke & Broadbent, 2016). A majority of the students enrolled in BOU's M.Ed programme, regardless of gender, currently work as teachers. They are expected to use online resources for research, assignments, tutor correspondence, and participation in virtual learning environments. Thus, a major factor in measuring the programme's effectiveness involves examining how male and female students feel about using the internet for studying. Examining gender disparities is crucial to comprehend how gender affects students' participation in online learning and subsequently create focused interventions that can guarantee fairness and inclusivity in higher education. The findings of this study are intended to offer empirical insights that can guide the development of digital infrastructure, instructional design methodologies, and policy formulation in order to support fair and technologically improved learning opportunities for both male and female students in the M.Ed programme.

Earlier studies have found that a number of ICT-related constructs, including attitudes toward the internet and ICT (Cai et al., 2017; Pamuk & Peker, 2009), interest and self-efficacy in using ICT (Sáinz & Eccles, 2012), and internet use in general (Vekiri & Chronaki, 2008), tend to differ by gender. Studying how different genders feel about computers or technology has gained attention in recent years (Ardies et al., 2015; Teo et al., 2016), although it has been challenging to reach definitive conclusions in this topic due to contradictory research findings (or lack thereof) from multiple, independent studies regarding gender differences in

attitudes toward technology use. For example, while Sáinz et al. (2016) found that males did not exhibit more positive attitudes toward technology use in comparison to females, Sáinz and López-Sáez (2010) reported that males indeed had more positive attitudes towards internet usage. These contradictory research findings regarding potential gender disparities in attitudes towards internet use, specifically from the students' viewpoints, have not been explicitly examined. This gap may be perfunctorily mentioned in some earlier studies, but no specific study has been found to address gender-based attitudes towards educational internet usage. Therefore, this study addresses this particular research gap, especially in the context of BOU's M.Ed students.

The objective of this study was thus to examine gender-based differences in attitudes towards the educational use of the internet among students of BOU's M.Ed programme. To accomplish this, the researcher developed the following research question:

- How do the attitudes of male and female students enrolled in BOU's M.Ed programme differ towards the educational use of the internet?

2. Literature Review

Distance education uses technology-based communication media like the internet to transmit educational materials to students who are located apart from their teachers (Dinc, 2017; Fedynich et al., 2015; Yilmaz, 2019). Because ODL frequently uses many types of technological tools to enhance learning, internet-oriented technology and distance education are considered inseparable (Alharthi, 2020). According to Saykılı (2018), the internet has always been used to mediate distance learning, and it has characterised and influenced the field. Stošić & Stošić (2015) even claimed that internet usage can create a new dimension in the distance education system.

Attitudes regarding the internet are multifaceted (Tsai et al., 2001). According to Eagly and Chaiken (1998), attitude is a concise assessment of a psychological object that can be expressed both internally and externally in terms of good-bad evaluations, likeable-dislikeable judgments, harmful-beneficial consequences, and pleasant-unpleasant experiences. One key human behaviour that affects students' academic performance is attitude, which has been addressed by several studies (Gül et al., 2015). The evolution of higher education, whether that involves face-to-face learning, distance learning, or blended learning, has been fuelled by advancements in the internet and information technology (Dang et al., 2016).

Because the concepts of distance education cannot be effectively applied without the use of appropriate and effective internet connectivity, the internet is therefore a fundamental component of the approach (Petković et al., 2017). The internet has become essential in distance education due to its potential to enhance users' professional potential, promote lifelong learning, and meet individual needs and workforce competencies (Aktaruzzaman & Plunkett, 2016).

According to Johnson et al. (2018), despite the many benefits of learning online, students often encounter difficulties with regard to their computer and internet self-efficacy. In terms of enhancing academic learning, internet-based technology has changed the face of distance-mode tertiary education (Iyendo & Halil, 2015) and will become even more practical in the future. The learning process in ODL can be considerably enhanced by the appropriate design and availability of internet-based resources (Dascalua et al., 2015). When looking for electronic content, distance learning students prefer to conduct quick searches on the internet. The development of electronic resources and customised learning tools that can fit each student's profile is therefore urgently needed (Kurilovas et al., 2014).

Studies on gender-specific variations in attitudes towards computer and internet usage have a long history (Tsai, 2002). While study findings reveal that students' attitudes towards using the internet for teaching and learning have been generally positive (Sepahpanah et al., 2015; Suryasa et al., 2018), some indicate disparities in favour of males (Calvani et al., 2012), while others have found differences in favour of females (Fraillon et al., 2014). According to Cai et al. (2017), males have more positive views about the internet and stronger ICT self-efficacy. Sirakaya et al. (2015) investigated distance education students' perceptions of online testing and discovered that male students' mean scores were higher than the female students, and that all students generally have a positive outlook. It has been widely accepted that male students perform better than their female counterparts in technology-oriented activities and that they have more positive views towards the internet and its use (Jackson et al., 2010). But Aesaert & Van Braak's (2015) study rather refutes the assertion that boys are more ICT-literate, while Kim and Yoo (2015) came to the conclusion that females are more skilled at using the internet for communication, study, and teamwork. Morante et al. (2017) found no noticeable difference between men and women when it comes to using the internet for learning. Similarly, Bouzar et al. (2024) found no significant gender-based difference in internet acceptance among university students although there were gender-based variations in internet usage patterns. According to Siddiq et al. (2017), there are negligible gender-based differences in students' attitudes toward internet use in education. As well, Alieto et al.'s (2024) gender-based analysis revealed insignificant disparities in attitudes and technological expertise between male and female students. Thus, these studies conclude that gender exerts an insignificant influence on determining students' views regarding the use of technology in online teaching.

Hamid et al. (2015) found that internet usage facilitated both male and female students' research activities, while Teo (2014) asserted that potential gender variations in students' views may have a differential impact on their intentions to use the internet and the actual integration of it in the classroom. Confidence to operate a computer and years of computer use might affect an individual's attitude towards using the internet (Teo, 2011). On the other hand, other studies describe culture and context as additional barriers to integrating internet-based tools into the classroom (Tearle, 2003; Chai, Hong & Teo, 2009). Additionally, Koch et al. (2008) and Wong et al. (2012) explained gender variations by referring to cultural backgrounds and attitudes towards the internet, while Adebowale et al. (2010) and Meelissen and Drent (2008) demonstrated how attitudes about the internet do, in fact, differ by gender.

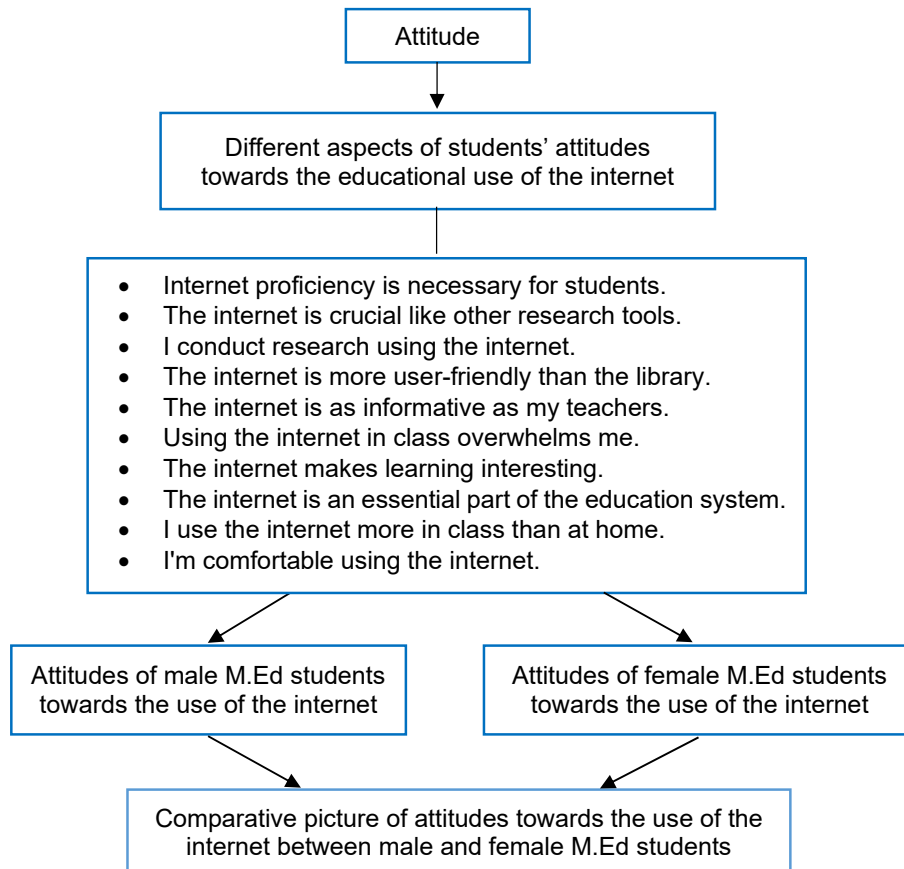
Importantly, self-reported and actual performance may not always correlate (Honicke & Broadbent, 2016), with male students tending to overestimate their own internet knowledge and skills while female students often underestimate them, regardless of their actual knowledge and skills (Aesaert et al., 2017).

2.1. Conceptual Framework

The overall idea of attitude as well as the attitudes of BOU learners towards the use of the internet in particular were considered during the planning of this study. The entire study was conducted in four main parts, which were connected by an additional part, in accordance with the provided conceptual framework. A brief discussion on attitude as a whole was first held. Subsequently, the facets of students' attitudes on internet usage for learning, especially in the ODL context, were described. Following clarification regarding the attitudes of male and female M.Ed students towards internet usage, a comparative picture of the attitudes on internet usage between male and female students was then identified.

Figure 1

Conceptual Framework to Compare Attitudes Towards Educational Use of the Internet Between Male and Female Students of BOU's M.Ed Programme



3. Research Method

When a lot of data are required, the quantitative research method is appropriate (Creswell & Creswell, 2017). Since a significant number of M.Ed students are the subjects of this study, the quantitative approach was chosen. This study thus employed a quantitative research strategy and survey that addressed the specific research question. As the researcher's main objective was to determine how male and female students enrolled in BOU's M.Ed programme differed in attitudes towards using the internet for education, the following processes were included in this study:

- Develop a questionnaire that examined several factors pertaining to distance learners' attitudes towards the educational use of the internet.
- Conduct the survey on both male and female M.Ed students at several BOU study centres.

3.1. Sampling Procedure

The study sample comprised M.Ed students at BOU study centres located throughout Bangladesh. At present, 18 study centres conduct the distance-mode M.Ed programme. In this study, eight M.Ed study centres from eight divisional cities (representing Bangladesh's eight administrative divisions) were purposefully chosen, i.e., the Government Teachers'

Training Colleges (TTCs) in Dhaka, Chattogram, Rajshahi, Khulna, Barishal, Sylhet, Rangpur, and Mymensingh. A total of 60 students were conveniently chosen from each study centre, with equal representation of male and female students. The total sample size was therefore 480 (60 each from eight centres), comprising 240 males and 240 females.

3.2. Questionnaire Design

According to DeVellis and Thorpe (2017), a collection of elements is not always important to constitute a scale, hence it is crucial to look into the underlying latent structure while developing a scale. Several relevant scales have already been developed, including Selwyn's (1997) Computer Attitudes Scale (CAS), which measures students' attitudes on computer use. The 21 statements on Selwyn's scale reflect attitudes regarding several computer-related topics. Using a web-based examination system anchored to Moodle, Bulent et al. (2016) developed an attitude scale tested on a sample of distance-learning university students. Created by Tsai et al. (2001), the Internet Attitude Scale (IAS) consists of 22 Likert-type items, while Slate et al. (2002) created a 49-item scale to measure students' attitudes regarding internet use. Later, Usun (2003) developed a scale that comprised 27 items, of which 20 were used to measure students' attitudes towards educational use of the internet.

The researcher identified 10 positive-type statements from Usun's (2003) scale and modified them for use in this study. The modified statements are as follows:

- Internet proficiency is necessary for students.
- The internet is crucial like other research tools.
- I conduct research using the internet.
- The internet is more user-friendly than the library.
- The internet is as informative as my teachers.
- Using the internet in class overwhelms me.
- The internet makes learning interesting.
- The internet is an essential part of the education system.
- I use the internet more in class than at home.
- I'm comfortable using the internet.

The reliability of the research instrument was assessed using Cronbach's Alpha, yielding an internal consistency coefficient value of 0.87 that is well above the required minimum value of 0.70 (Mohajan, 2017). This indicated a high level of internal consistency among the items on the scale.

3.3. Data Analysis

The data were processed using SPSS version 25 to analyse the mean scores (M) and standard deviations (SD) for each statement. Using a five-point rating system, the participants were asked to indicate how much they agreed with the statements, with scores indicating the following: 1 for "Strongly disagree", 2 for "Disagree", 3 for "Uncertain", 4 for "Agree", and 5 for "Strongly agree". The majority of the respondents were considered to agree with the statement when the mean score was higher than three, i.e., the midpoint of the range. All mean scores close to five indicated highly agreeable responses.

4. Findings and Discussion

The data in Table 1 show that both male and female students agreed with nine of the 10 statements ($M > 3.00$), while disagreeing with just one ($M < 3.00$). These findings are in line with some earlier studies (Ruthven et al., 2005; Sánchez et al., 2012; Simsek, 2008; Yu & Yang, 2006), which found that participants in distance learning programmes had favourable

opinions about using the internet as a teaching medium. The male students gave higher scores than did the females for seven out of 10 statements; only for the remaining three did females give higher scores than did their male counterparts. Findings from other studies also revealed that males are more likely to have favourable attitudes towards the internet (Al- Jabri, 1996; Brosnan & Lee, 1998; Cai et al., 2017; Graff, 2003; Sainz et al., 2010), which are consistent with the present findings. Moreover, Akhter and Fatima (2017) stated that male students expressed more favourable opinions about the internet and computer applications than did female students.

This present study has found clear gender differences between male and female students' attitudes towards the use of the internet. Previous studies have also identified students' gender-specific attitudes toward using the internet for educational purposes (Abedalaziz et al., 2013; Hoogerheide et al., 2016; Luan et al., 2008; Punter et al., 2017).

The highest mean score in this study ($M = 4.14$) was given by male students to the statement, "Internet proficiency is necessary for students", followed by the statement, "The internet makes learning interesting" ($M = 3.96$). In contrast, female students gave the highest score ($M = 4.28$) to the same statement, "Internet proficiency is necessary for students", followed by the statement, "The internet is as informative as my teachers" ($M = 3.95$). Moreover, the statement, "I conduct research using the internet" got the lowest score from both males ($M = 2.37$) and females ($M = 2.16$), followed by the statement, "The internet is more user-friendly than the library" (males, $M = 3.28$), and "The internet is crucial like other research tools" (females, $M = 3.12$).

The standard deviation for each of the 10 statements was not statistically significant ($SD < 0.50$), indicating that the average distance between the data points was moderately low. Independent samples *t*-tests were also conducted to examine the significance in gender differences. The results indicated that eight attitude dimensions differed significantly by gender, while the other two showed no statistically meaningful differences, suggesting a mixed pattern of gender-specific perceptions. Female students reported significantly stronger agreement than male students that internet proficiency is necessary for students ($t = -4.73$, $p < .001$), indicating that female learners place greater importance on basic digital competence.

Similarly, females perceived the internet as equally informative as their teachers more strongly than males ($t = -4.92$, $p < .001$), reflecting higher confidence in the instructional value of online resources. Female students also rated the internet as an essential part of the education system ($t = -4.15$, $p < .001$), underscoring their stronger endorsement of technology integration in higher education. In contrast, male students reported significantly higher mean scores on several usage- and comfort-related dimensions. They perceived the internet as equally crucial as other research tools ($t = 5.85$, $p < .001$), and reported conducting research using the internet more frequently than females ($t = 5.53$, $p < .001$). Additionally, male students indicated greater comfort in using the internet ($t = 15.76$, $p < .001$), representing the most significant gender difference observed in the analysis.

It was also evident that males used the internet more in class than at home ($t = 5.93$, $p < .001$). Regarding affective responses, male students reported feeling more overwhelmed when using the internet in class than did the female students ($t = 8.03$, $p < .001$). This suggests that while males may use the internet more intensively than females, they may also experience greater cognitive load in classroom-based digital learning environments. No statistically significant gender differences were found for perceptions that the internet is more user-friendly than the library ($t = 1.43$, $p > .05$), or the internet makes learning interesting ($t = 3.26$, $p > .05$).

These findings indicate that both male and female students share largely similar views regarding the usability and motivational value of internet-based learning tools. Overall, the

findings demonstrate that gender differences in attitudes towards educational internet use are domain-specific rather than universal. Female students exhibit stronger beliefs in the educational importance and instructional credibility of the internet, whereas male students report higher levels of use, comfort, and perceived research utility. These results highlight the need for gender-sensitive pedagogical strategies in technology-enhanced teacher education programmes, particularly in supporting balanced engagement, confidence, and cognitive comfort across learners.

Table 1

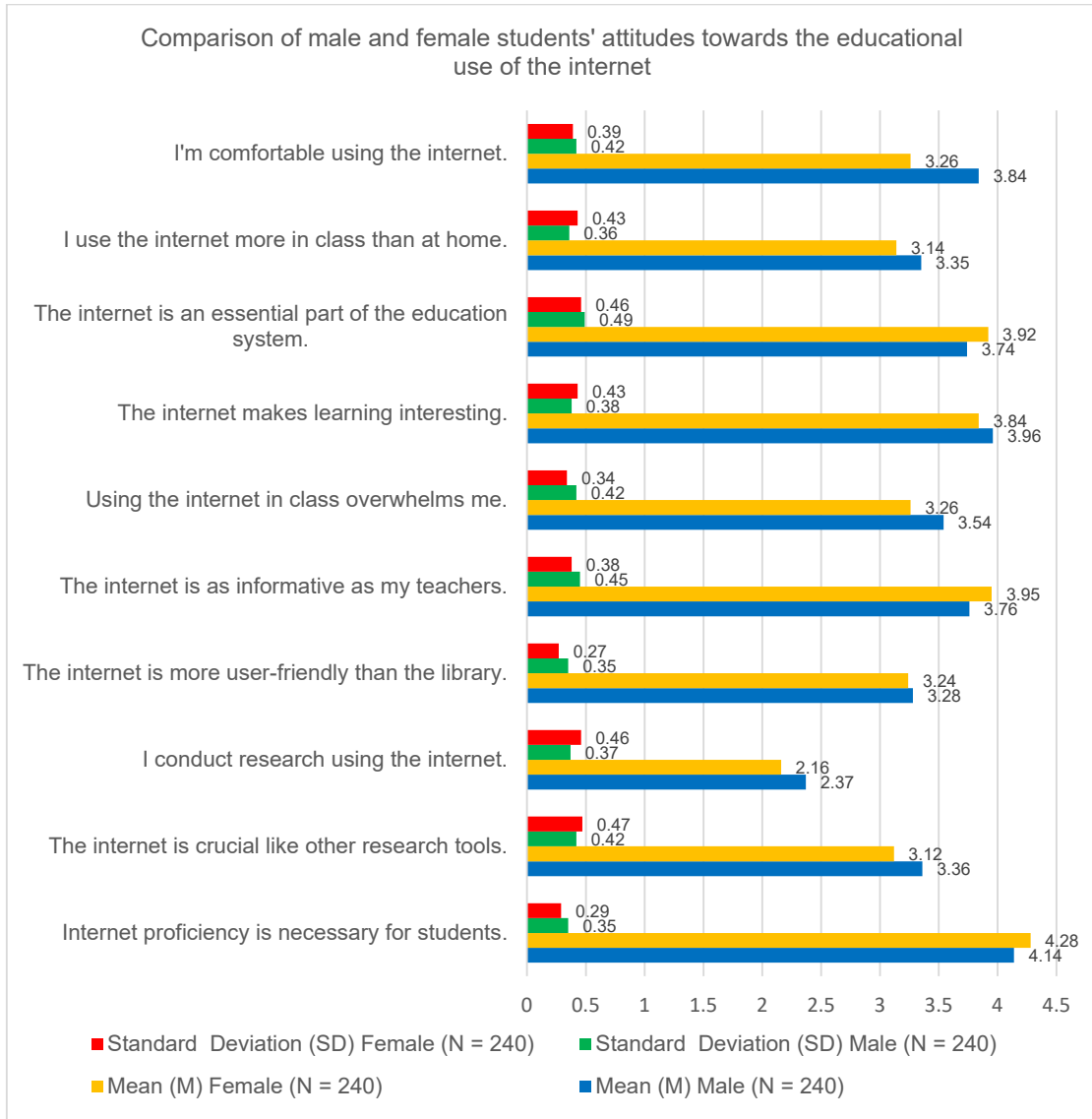
Mean Values and Standard Deviations Describing M.Ed Students' Attitudes Towards the Educational Use of the Internet

No.	Statements on M.Ed students' attitudes towards the educational use of the internet	Mean (M)		Standard Deviation (SD)		t value	p value
		Male (N = 240)	Female (N = 240)	Male (N = 240)	Female (N = 240)		
1.	Internet proficiency is necessary for students.	4.14	4.28	0.35	0.29	-4.73	< .001
2.	The internet is crucial like other research tools.	3.36	3.12	0.42	0.47	5.85	< .001
3.	I conduct research using the internet.	2.37	2.16	0.37	0.46	5.53	< .001
4.	The internet is more user-friendly than the library.	3.28	3.24	0.35	0.27	1.43	0.159
5.	The internet is as informative as my teachers.	3.76	3.95	0.45	0.38	-4.92	< .001
6.	Using the internet in class overwhelms me.	3.54	3.26	0.42	0.34	8.03	< .001
7.	The internet makes learning interesting.	3.96	3.84	0.38	0.43	3.26	0.062
8.	The internet is an essential part of the education system.	3.74	3.92	0.49	0.46	-4.15	< .001
9.	I use the internet more in class than at home.	3.35	3.14	0.36	0.43	5.93	< .001
10.	I'm comfortable using the internet.	3.84	3.26	0.42	0.39	15.76	< .001

The findings of this study indicate the importance of gender-sensitive policy and instructional design in Bangladeshi distance education programmes. The presentation of gender disparities for dimensions of attitude towards the educational use of the internet should be promoted for researchers. Further research is required to identify the contributing factors and underlying causes of gender differences in attitude towards the use of the internet for distance learning. BOU should focus on enhancing digital confidence and research skills, particularly among female students, while simultaneously promoting pedagogically meaningful and reflective internet use among all students to ensure equitable and effective engagement with online learning environments.

Figure 2

Comparison between Male and Female M.Ed Students' Attitudes Towards the Educational Use of the Internet



5. Conclusion

The use of the internet in education is nothing new but what remains arguable is its actual status of implementation. The purpose of this study was to identify the attitudes of BOU's M.Ed students towards the use of the internet for learning, in addition to examining how their attitudes differed by gender. A quantitative research approach was employed to conduct the study. A questionnaire was developed and administered to the M.Ed students in eight BOU study centres throughout Bangladesh. This study discovered that gender differences in attitudes towards internet use indeed exist, and that it is important to determine the extent to which students, regardless of gender, accept technological integration in educational activities. The t-test analysis found that in eight of the 10 attitude dimensions surveyed, there

were indeed significant differences by gender. The findings also showed that, regardless of gender, the majority of the surveyed students had favourable opinions about using the internet for distance learning, which suggests that it could be incorporated into any distance learning programme. In addition, the study found that male students exhibited more positive attitudes towards the use of the internet than did their female counterparts. Therefore, all students should be made aware of the advantages of the internet. Moreover, distance education providers like BOU should strive to provide better infrastructure to their students. Courses that increase students' internal capacity to utilise the internet more effectively and efficiently should be offered by BOU and other ODL institutions. In open and distance education programmes, it is important to understand how both male and female students feel about using the internet for learning. The findings of this study will contribute to a better understanding of the mechanism involved in adopting the internet, as well as gender differences in the use of the internet for distance-mode teacher education programmes. The gender differences in attitude towards the educational use of the internet would be better understood if this study is replicated using a more rigorous design and involving a larger and more representative sample of various distance education programmes.

Acknowledgement: The researcher would like to express his deepest gratitude to the contributions of the journal advisors, chairpersons, editorial board members, and respective international offices for their continuous support. Sincere appreciation goes to the reviewers for their insightful comments and constructive feedback. The researcher appreciates and heartily thanks all the M.Ed students at BOU's eight study centres for their cooperation and active participation.

Conflict of Interest Statement: The author declares no conflict of interest.

Ethics Statement: As there was no psychological element involved, the study did not result in any physical or psychological harm to the respondents. The participants were given enough time to establish a rapport and assured that all information would be kept strictly confidential, thus allowing them to feel comfortable to take part in this research. The authorities of M.Ed study centres gave their approval for data collection, and were informed that the research report would not contain any information that could identify any student. The participants were also verbally briefed on the study in addition to receiving the explanatory statement form, through which they were made aware of their freedom to leave the study at any moment, even without giving prior notice or providing any explanation to the researcher. Moreover, each participant was asked to sign a letter of informed consent, all of whom did so by returning the letter to the researcher. The researcher has kept a hardcopy of the research data in his own secure location, and a softcopy version on his password-protected laptop.

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