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E-Learning among Bangladeshi University Students: Practices, Experiences, and Challenges

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Abstract

Digital technologies have reshaped higher education and opened new ways for students to acquire skills beyond their academic curricula. This study explores how university students in Bangladesh perceive Coursera, Duolingo, Udemy, and 10 Minute School, focusing on their usefulness, ease of use, and the barriers students meet when using them for skill acquisition. The Technology Acceptance Model (TAM) guided the study, with Perceived Usefulness (PU) and Perceived Ease of Use (PEU) as its two constructs. Using a qualitative design, we held eight focus group discussions (FGDs) with 40 participants from five universities in Dhaka, Bangladesh, and applied thematic analysis combining deductive and inductive coding. Participants described some courses, especially IT-related ones, as useful, but doubted that local employers and universities recognize online certificates. They found much of the content to be theoretical, with limited interaction and practice, particularly in soft skills. Cost and weak engagement emerged as major barriers. Students chose courses based on peer reviews, course content, and instructor credibility, and they asked for more interactive, locally relevant, and affordable courses with language support. The findings reflect students' perceptions, not measured learning outcomes, and they show how closely local relevance is tied to students' judgments of e-learning platforms.

Keywords: e-learning, digital skills, Technology Acceptance Model, university students, Bangladesh.

Introduction

Digital technologies have changed education worldwide and made learning more convenient (Ayu, 2020; M. N. I. Sarker et al., 2019). As digital education gains momentum, the way learners acquire the skills needed to compete in today's job market is also changing. Alenezi et

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al. (2023) link the growing demand for personalized, self-paced learning to digital education and global skill development trends. By reducing barriers of time, location, and cost, online learning has benefited its users, especially university students (Ayu, 2020). Online platforms, Udemy among them, offer structured lessons, modules, and exercises designed to build skills (Bankovska, 2023). Learners can study anytime and anywhere, which may support their interpersonal and cognitive skills (Bankovska, 2023; Dhawan, 2020). Multimedia resources, simulations, and collaborative tasks bring real-life scenarios into learning and can strengthen both soft skills and digital abilities (Haleem et al., 2022).

Two kinds of skill acquisition take place on these platforms. The first covers technical skills linked to the demands of today's industries, and the second covers soft skills. Whether students find these platforms useful for either purpose, and whether that usefulness carries over to local labor markets, is less clear.

E-learning Platforms in Bangladesh

Digital technologies are reshaping higher education across South Asia (Rab et al., 2019), and the COVID-19 pandemic accelerated online learning worldwide (Li & Lalani, 2020). Undergraduate and postgraduate students in Bangladesh now use e-learning platforms for coursework and for developing skills outside the curriculum. Much Bangladeshi research has examined institutional provision or the pandemic shift. Shahriar et al. (2022) documented the emergence of e-learning and online training during the COVID-19 crisis, and M. F. H. Sarker et al. (2019), studying the learning management system of one private university, found that students were enthusiastic but that poorly designed materials allowed little interaction and poor internet connections limited access. Local platforms such as 10 Minute School now sit alongside international ones, which makes students' judgments of their value timely.

Less attention has gone to how students judge the international and local skill-oriented platforms they choose for themselves, particularly regarding relevance to the Bangladeshi labor market, the recognition of certificates, and affordability. This study addresses that gap. With reference to the Technology Acceptance Model (TAM), it asks how university students perceive Coursera, Udemy, Duolingo, and 10 Minute School. As Bangladesh moves toward becoming a

technologically advanced nation, it matters how young people use online platforms, since they need competencies to compete in the global knowledge economy. The research questions presented after the theoretical framework follow from this gap.

Student Perceptions of Online Learning

Kuh (2003) argued that enriching educational experiences, including interaction with people of varied backgrounds and the use of technology to support collaboration, promote effective learning. In a survey, Du et al. (2007) found that students saw online discussions as contributing significantly to critical thinking and to meeting learning objectives. Instructors' active participation and quality of interaction were seen as vital, and the success of group activities depended on group dynamics, which made the experience either very rewarding or negative. These studies treat engagement and interaction as central to how online learning is judged, a concern that recurs in the findings below.

Online learning also brings challenges. Isolation and technology problems can reduce learner engagement (Gillett-Swan, 2017), which is why supporting and engaging isolated learners matters in digital settings. Alsubhi et al. (2019) likewise treat student engagement on e-learning platforms as a challenge. Limited personal interaction may therefore weaken the effectiveness of digital learning when compared with traditional learning. The studies cited here concern course-based or institutional online learning rather than the skills platforms that students choose independently, which is the focus of this study.

The Application of Technology Acceptance Model

This study applies the Technology Acceptance Model (TAM) introduced by Davis (1989). TAM proposes that acceptance of a technology depends on how useful and how easy to use people find it. Perceived Usefulness (PU) is the degree to which a person believes the technology will improve their performance, and Perceived Ease of Use (PEU) is the degree to which using it is believed to require little effort (Davis, 1989). TAM remains one of the most widely applied models of technology acceptance (Ma & Liu, 2004), and researchers often extend it with external variables (Abdullah et al., 2016), including in resource-limited

settings (Kalayou et al., 2020). Attitude and behavioral intention, which appear in fuller versions of TAM, were not analyzed here (see Methodology).

PU is central to technology adoption. Students are more likely to use a platform they judge to improve their capabilities and knowledge (Abdullah et al., 2016). In the extended TAM2, job relevance is one of the factors shaping PU (Venkatesh & Davis, 2000), so labor-market fit is a plausible influence here. The usefulness of these platforms may therefore depend on whether courses match the demands of the Bangladeshi job market or mainly reflect Anglophone, Western-oriented provisions (Marginson, 2004).

On the other hand, PEU concerns the effort involved. The more user-friendly a platform is, the less effort learners need, and the higher PEU tends to be (Davis, 1989). Progress tracking and well-designed interfaces can also make courses easier to find and follow. In Bangladesh, limited internet access, English-language content, and low computer literacy may hinder ease of use (Liyanagunawardena et al., 2013). Factors such as cost, language, digital literacy, certificate recognition, and instructor credibility are therefore treated as contextual factors that may shape PU and PEU, not as TAM constructs in themselves.

Within this framework, which treats PU and PEU as the two main constructs, the study uses a qualitative design based on Focus Group Discussions (FGDs) to answer the following three research questions.

RQ1: How do Bangladeshi university students perceive the effectiveness of e-learning platforms for acquiring technical skills (programming, data analysis, graphic design, language learning) and soft skills (communication, teamwork, critical thinking)?

RQ2: Which factors shape these students' use of Coursera, Udemy, Duolingo, and 10 Minute School for skill acquisition?

RQ3: What challenges and obstacles do they face when using these platforms to acquire those skills?

Methodology

Research Design

This study adopted a qualitative design using Focus Group Discussions (FGDs) to explore how Bangladeshi university students perceive e-

learning and its effectiveness. The research was guided by the Technology Acceptance Model (TAM). Themes were interpreted through two TAM constructs, Perceived Usefulness (PU) and Perceived Ease of Use (PEU), together with contextual factors that may influence them. Attitude and behavioral intention were not measured or analyzed as separate constructs. Where participants described their overall views or willingness to enroll, these were reported descriptively.

Participants and Sampling

A total of eight FGDs were conducted with 40 participants (N = 40) from five universities, with four to six participants in each FGD. The sample comprised 28 undergraduate and 12 postgraduate students, of whom 26 were male and 14 were female. The researchers aimed for equal male and female participation but could not achieve it. Universities in Dhaka were chosen for their level of digitalization and the diversity of their student populations. Purposive sampling was used to identify students who regularly used e-learning platforms, and snowball sampling extended recruitment from those initial contacts. Participants reported frequent use of domestic and international platforms such as Coursera, Duolingo, Udemy, and 10 Minute School. Guest et al. (2017) found that most themes emerged within three to six focus groups in their dataset; here, eight FGDs were held, and data collection stopped when responses became repetitive (see Analysis of Data).

The study covered three public universities (University of Dhaka [DU], Jahangirnagar University [JU], and Bangladesh University of Professionals [BUP]) and two private universities (BRAC University and North South University [NSU]). All these universities except JU have introduced digital learning infrastructure. DU launched DUBDLMS (Prothom Alo, 2023), BUP launched a comprehensive learning management system (The Business Standard, 2020), BRAC University launched buX (The Daily Star, 2020), and NSU adopted the Canvas LMS (The Daily Star, 2021).

Platforms and Skills Examined

Duolingo, Coursera, Udemy, and 10 Minute School were selected for their relevance to students and their user-friendliness. User-friendliness was explored through self-reported experiences, not a

formal usability assessment. Every participant had used at least one of the four platforms. Participants' experience was not formally categorized into levels, although they described how often they used the platforms (for example, daily or weekly). The technical skills examined included programming, data analysis, graphic design, and language learning. The soft skills examined included communication, teamwork, and critical thinking.

Data Collection

FGDs were held on Zoom to improve participant accessibility. Each session lasted about 45 to 60 minutes and was conducted in a mix of English and Bangla. Audio recordings were made with the informed consent of all participants. The same discussion guide of nine open-ended questions was used in every FGD to ensure consistency. The questions covered participants' expectations, challenges, effectiveness in learning soft skills, relevance to the local job market, course selection, employers' perceptions of certificates, integration into academic curricula, suggested improvements, and comparison of platforms.

Analysis of Data

Thematic analysis, as outlined by Braun and Clarke (2024), was applied because the themes were developed from the data collected. It is widely used to explore participants' insights and views and to identify points of convergence and divergence (Nowell et al., 2017; King, 2004; Thorne, 2000). Because the analysis relied on a predefined coding framework, a codebook, and consensus between coders, it is best described as codebook thematic analysis rather than reflexive thematic analysis (Braun & Clarke, 2024). Transcripts were coded using both deductive and inductive strategies. The coding framework was organized deductively around the discussion questions, which were derived from the research questions (Rahman, 2025), while codes within each question were developed inductively. A codebook with a definition and example for each code was prepared, and codes were grouped into themes and sub-themes. Disagreements were resolved through discussion until consensus was reached, so no inter-coder agreement statistic was calculated. Data collection stopped after the eighth FGD because responses had become repetitive and no new codes emerged. The themes were then interpreted through PU and PEU of TAM.

Translation and Trustworthiness

The Zoom sessions were recorded and transcribed. Sections discussed in Bangla were later translated into English by the research team, who checked the English version against the original transcripts to confirm that meaning had been preserved. No external translator was used. Together with the codebook and consensus-based coding, this checking was the main trustworthiness procedure.

Ethical Considerations

Participation was voluntary, and written formal consent was obtained from all participants before each discussion. Participants were informed of the purpose of the study and of their right to withdraw at any time. Recordings and transcripts were stored securely and used for research only. Participants' identities were kept confidential in reporting, and each was identified by a code combining FGD and participant number (e.g., FG1P5).

Findings

The findings of this study are reported as participants' perceptions. Quotations are identified by FGD and participant number.

Relevance to Local and Global Context

Asked about the local labor-market relevance of courses, several participants said that Bangladeshi employers value offline practice more than online certification, although some courses were seen as useful in particular fields. As one participant put it,

> Well, they offer a lot of courses, right?... But some courses are useful, especially in IT. For instance, there are a lot of freelancers, and also there are a number of companies that have their operations through the internet. (Participant: FG1P3)

This view ties usefulness to IT, freelancing, and internet-based companies rather than to the labor market in general. Another participant questioned the fit between the platforms and the Bangladeshi job market,

> I think that these platforms do not provide materials which are completely useful in the context of the job market in Bangladesh…Since the job market in Bangladesh is not completely online-oriented, there are

> many jobs here which benefit more from real-life experience and personal interaction with people. (Participant: FG7P2)

These are participants' beliefs about employers, who were not interviewed. Taken together, the abovementioned accounts suggest that relevance was judged field by field, which bears on RQ2 and RQ3.

Challenges and Obstacles

Participants reported that recognition and certification, practical vs. theoretical learning, lack of engagement, and cost and accessibility remain challenges and obstacles for students in using e-learning platforms.

Participants reported that, in their experience, neither universities nor employers treat these certificates as equivalent to formal qualifications. Some also pointed to the high cost of certification. One participant who held a number of certificates stated,

> The certifications themselves should be valid; compared to a regular degree, the value would be different. The freelancers are helpful in some ways, but the courses themselves are not. They can build on some of the skills, but they will not get jobs because of the certificates. (Participant: FG2P4)

The comment appears to separate the usefulness of the skills gained from the weight of the certificate itself. Moreover, participants said that the platforms help organize the learning process but that the training itself is mostly theoretical. An undergraduate student stated,

> We all know online courses are helpful, but soft skills need to be practically developed… Simply watching videos is not enough…Courses where you have to actively participate, engage, discuss with others, and solve some real-life tasks are more effective for soft skills development. (Participant: FG8P5)

This concern was less about the availability of content than about the lack of active practice, especially for soft skills.

In response to the question on challenges (RQ3), several participants expressed dissatisfaction with the lack of engagement. They mentioned a short attention span, lack of accountability, poor

time management, and procrastination. A postgraduate student commented, “They just watch the slides. There is no quiz at all… At the end of the day, there is a disengagement between them. Classes are usually more engaging than in-class teaching” (Participant: FG8P11). This comment also points to a sense of distance from the teacher.

Additionally, cost was raised as a primary challenge limiting use of these platforms. All participants studied at universities in Dhaka, so this may not reflect the experience of students elsewhere. A participant, for whom cost meant not taking courses beyond those offered free during the pandemic, stated,

> I did not take anything from Udemy or Duolingo… In COVID times, we were offered the courses free of charge. When trying to find courses related to my interests, however, I noticed they were very costly indeed. (Participant: FG3P2)

Effectiveness of Online Learning

Responses were mixed about the effectiveness of online learning on these platforms. Some participants said the effectiveness of a course depends on its instruction, while others found soft skill development through online learning difficult. Comments on technical skills were limited in the reported data, apart from the view that some IT-related courses were useful (FG1P3). On soft skills, one participant stated,

> We all know online courses can help, but soft skills require real practice. We all need real practice... Just watching videos is not enough. The main point here is that it offers us a very good theoretical base without practical application. (Participant: FG5P2)

A contrasting view held that online platforms can be very effective for soft skill development if designed properly. This participant said that interactive courses involving role-playing and peer evaluation can be extremely helpful for acquiring communication and leadership skills (Participant: FG1P4). Overall, participants did not regard online learning as an entirely effective method, but they remained cautiously optimistic given the rapid growth of technology and the diversity of learners. These judgments concern perceived effectiveness; the study did not assess learning outcomes.

Criteria for Course Selection

Participants chose courses mainly by peers' opinions, course content, and instructor credibility. They judged instructor credibility by checking user reviews and course ratings. For example, one participant said, "Reviews give us information about whether it is worth taking or not and what skills can it offer us" (Participant: FG4P3). Another preferred peer reviews because "they provide better understanding about the actual quality of courses" (Participant: FG5P5). Reviews thus appear to work as a shortcut for judging quality before enrolment.

However, several participants also valued course content and outline. One mentioned that the course description helped him understand what he would gain from the course (Participant: FG4P2). Instructors' credentials mattered as well; one participant said she looked into instructors' teaching methods before signing up (Participant: FG3P4).

Improving E-learning Platforms to Benefit the Local Environment

This theme covers participants' suggestions for making platforms more useful in Bangladesh. The suggestions concerned interaction, local relevance, language, and engagement.

First, some participants wanted more interaction in online lessons and project work. One suggested, "If we can maintain a practice session in courses where practical knowledge or practice is required" (Participant: FG5P4), and another, "I am sure my suggestion will be to make the lessons more interactive" (Participant: FG2P5). A third described the kind of course that works better for soft skills: "Soft skills need real-life practice…Courses that involve group discussion, live sessions, and practical tasks are better for the development of soft skills" (Participant: FG1P2).

Second, participants asked for localized content, with case studies and examples from the Bangladeshi job market. One participant said, "I would like case studies on local industries so that instead of learning what the US is doing, we learn what Bangladesh is doing" (Participant: FG3P1). The issue of language was also raised by a participant: "Language support is very important for Bangladesh and every other country, I think" (Participant: FG2P1). Finally, several participants emphasized the importance of motivation and engagement through quizzes and rewards. One stated, "If a project or

an exercise in the course has a reward, then it is called an engagement" (Participant: FG4P3).

Across the five themes, perceptions of effectiveness (RQ1) were mixed and tied to practical, interactive design. The factors shaping use (RQ2) were peer reviews, course content, instructor credibility, local relevance, and certificate recognition. The main obstacles (RQ3) were doubts about recognition, theoretical content, weak engagement, and cost.

Discussion and Implications

This study explored how Bangladeshi university students perceive the effectiveness of e-learning platforms and the barriers to using them, through the Perceived Usefulness (PU) and Perceived Ease of Use (PEU) constructs of the Technology Acceptance Model (TAM) (Davis, 1989). Reviews of e-learning in developing countries point to constraints in infrastructure, finance, and instructor capacity (Aung & Khaing, 2016; Naresh & Reddy, 2015), and Rab et al. (2019) raise equity concerns about the digital globalization of knowledge in South Asian higher education. The present findings add students' own accounts of platforms they use outside institutional systems. We read these accounts as perceptions shaped by students' own experiences, which is the level at which TAM operates.

Taken together, the themes suggest that participants did not yet see these platforms as fully serving local needs. They described some courses, particularly IT-related ones, as useful, but several doubted that other courses matched the Bangladeshi job market (PU). This fits TAM2, in which job relevance shapes perceived usefulness (Venkatesh & Davis, 2000). It also echoes Uddin (2021), who found differences between graduates' and employers' views of employability skills in Bangladesh, although our data record only students' beliefs about employers. Whether employers actually value or discount these courses cannot be judged from this study.

Participants also felt that course design was helpful but offered too little interaction. This agrees with M. F. H. Sarker et al. (2019), who found that poorly designed materials allowed little interaction between instructors and students in a Bangladeshi private university. The settings differ; however, M. F. H. Sarker et al. (2019) reported that most students accepted the institutional system, whereas our participants, who chose external platforms, were more cautious.

Limited interaction and passive viewing appear to lower perceived effectiveness (PU) and may also affect how easy and engaging courses feel to use (PEU).

Regarding practical learning, participants judged the platforms' theoretical side adequate, but the practical skills gained were limited (PU). The concern was strongest for soft skills, where participants wanted live sessions, discussion, and real tasks. A similar concern appears in Bangladeshi work on e-learning challenges (Islam & Islam, 2023). These are perceptions, not measured outcomes, so the study cannot say whether technical or soft skills actually improved.

Participants also doubted that universities and employers treat platform certificates as equivalent to formal qualifications, and some found certification costly, which limits the credential value they can gain (PU). Dreisiebner (2018) reported similar employer skepticism toward MOOC certificates in an interview study of five start-up entrepreneurs in Austria. The overlap is suggestive only, since that study heard from employers and ours from students. Platform-level differences, such as between Coursera and Udemy certificates, could not be examined because the data reported here rarely distinguish between platforms.

Participants also separated global from local value. Some saw courses as useful for international freelancing, yet few courses outside IT were seen as meeting local employers' needs. The call for case studies on local industries shows that relevance works as a condition of usefulness, not an optional extra. Language and access are likely to shape ease of use: Liyanagunawardena et al. (2013) argue that access, language, and computer literacy limit the usefulness of MOOCs in developing countries. In our data, language appeared as a call for language support, while internet access and digital literacy were not reported as findings and remain open questions. The emphasis on local case studies is consistent with Marginson's (2004) concern about Anglophone, Western-oriented provisions, although these data cannot confirm that such content lowers perceived usefulness.

These findings suggest how contextual factors can be read through TAM. Course relevance, certificate recognition, and practical learning opportunities relate most directly to PU, since they concern what a course can do for a student's skills and prospects. Peer reviews and instructor credibility are better seen as external cues that

students use to anticipate usefulness before enrolling. Interactivity is a design feature that may bear on both PU and PEU. Language support relates mainly to PEU, and affordability is a contextual condition of access, not a TAM construct. Reported willingness to enroll was shaped by these considerations, but attitude and behavioral intention were not analyzed as separate constructs.

Participants' suggestions point to practical implications. Platform providers could add localized case studies, practice-based tasks, quizzes, and language support, and consider affordability for students in Bangladesh. The study's contribution is contextual: it shows how students at five Dhaka-based universities apply a PU and PEU lens to platforms they use, with local labor-market relevance, certificate recognition, and cost prominent in their reasoning. It does not extend TAM or test its relationships. Students' views suggest that the platforms are not yet fully aligned with local needs, and better interactivity and relevance might change those perceptions, though this study cannot confirm it. Because the sample is limited to Dhaka, the contribution is best read as an account of how these factors are voiced in an urban university setting.

Conclusion and Limitations

This study examined Bangladeshi university students' perceptions of e-learning platforms for developing technical and soft skills, using TAM. Participants regarded some courses, especially IT-related ones, as useful, but doubted that many courses fit the local labor market or that universities and employers recognize online certificates. They described much of the content as theoretical, with limited interaction, and found soft skills hard to develop without practice. Cost and weak engagement were prominent barriers. Students chose courses by peer reviews, course content, and instructor credibility, and they asked for more interactive, locally grounded, and affordable courses with language support. Because these are perceptions and no learning outcomes were assessed, e-learning is best presented as a complement whose local value depends on relevance, interaction, and cost. Practical implications are proportionate to this evidence: providers could prioritize localized case studies, practice-based tasks, and pricing suited to students in Bangladesh.

This study has several limitations as well. All participants came from five universities based in Dhaka; the sample was small and

skewed toward male students, and recruitment was purposive and snowball-based, so the findings cannot be generalized. Students elsewhere, including those facing a stronger digital divide, are not represented. The data are self-reported, and no objective skill assessment was made. Educators and employers were not interviewed, so their perspectives on e-learning and on certificates remain unknown. Participants' platform experience was not formally categorized, and platforms were not compared. Attitude and behavioral intention were not analyzed as separate constructs. Future studies could add skill assessments, educator and employer views, and platform-level comparisons to show how far each platform delivers industry-relevant skills.

Ethics Statement

The authors obtained ethics approval to conduct this study from the BUP Research Center Ethical Review Committee, Bangladesh University of Professionals (BUP), Bangladesh.

AI Statement

The authors used generative AI to refine the manuscript's language and paraphrase relevant literature.

Conflict of Interest

There is no potential conflict of interest in this study.

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