



Students' Adoption of Online Platforms for Learning Purposes in Bangladesh

Rudaiba Adnin^(✉), Sadia Afroz, Montaser Majid Taseen, and Sadia Sharmin

Bangladesh University of Engineering and Technology, Dhaka, Bangladesh
{1505032.ra, 1505030.sa}@ugrad.cse.buet.ac.bd, sadiasharmin@cse.buet.ac.bd

Abstract. Online learning plays a significant role for students. However, with the increasing number of online platforms such as MOOCs, YouTube, etc. students can find it challenging to conveniently use them for learning purposes. Here, technological solutions are yet to achieve proper utilization of those platforms. Therefore, in this paper, we perform a mixed-method study through semi-structured interviews with 18 university students and an online survey of 239 university students from an engineering university situated in Bangladesh. Our findings reveal several influential factors, experiences, challenges of the conventional usage of online platforms for learning. One of the noteworthy findings of our study is that most students use multiple online platforms for an effective learning experience. These findings point to opportunities for design interventions in existing platforms and a need for personalized online platforms for learning purposes.

Keywords: Online learning · Platforms · Students · Survey · Interview

1 Introduction

Online Learning has many benefits, perhaps the most significant is widening access to education to the reach of many in a flexible manner, thus allowing learning to take place anywhere at any time. Like many other countries in the Global South [10], the availability of the mobile Internet has made online learning easily available to the students of Bangladesh [1]. Massive Open Online Courses (MOOCs), YouTube, discrete websites (Google, Bing, etc.) are some of the online platforms which play essential roles in learning [3, 7]. However, one of the challenges of online learning is how to choose an effective platform for learning that meets learners' expectations and requirements [6, 9]. However, limited research on the challenges faced while using those platforms and the increasing potential of online learning in the Global South [10] have motivated us to explore the online learning experiences of students in Bangladesh.

In this study, we perform a mixed-method study by conducting semi-structured interviews and an online survey of students. Based on our interviews,

we have taken the early steps to understand the influential factors, experiences, challenges faced by students while using online platforms for learning and identified the design issues of the online learning resources, which cause limited interaction. These will help HCI to better understand these issues. We have also identified how current online platforms often fail to address these challenges of the students and proposed some socio-culturally appropriate insights to increase the convenience of students in getting the preferred type of learning resources, which shows novel ways for HCI to address these issues.

2 Related Work

One of the main characteristics of online learning is that it requires learners' ability to self-regulate their learning process to achieve a positive learning outcome. Learners tend to adopt online learning that can fulfill their functional motive, social motive, and emotional motive [11]. A study [6] examines the principal factors for the use of online learning among university students where it is found that perceived usefulness and perceived ease of use influence inclination for online learning. Accordingly, researchers worked on showing the engagement, motivation, flexibilities, and impact on academics of different types of online platforms such as MOOCs, YouTube, discrete websites [3,7,9]. These online platforms enable learners of all ages, competencies, and preferences to look for information or knowledge anywhere and anytime [8]. Studies on YouTube show that students can understand and remember complex concepts much better when they are exposed to a visual explanation video [7]. Websites offering learning resources found to have diverse quality content and usability criteria for learning purposes [3]. The impact of integrating MOOCs with traditional in-class learning was discovered in a research [9], where researchers find that learning objectives were in most parts better satisfied in this integrated way because students were more involved and eager to learn. However, most of these researches focused on specific types of online platforms or particular learning materials. They face several challenges while trying to get an effective learning experience from these platforms which varies with the social-cultural differences of the learners [12]. In a work [12], socioeconomic, sociocultural, and IT infrastructural factors are categorized as challenges hindering the adoption of online learning. However, most of these researches investigate the challenges of online learning in general, not while they are using online platforms for learning. Moreover, it can be seen that providing learners with the same learning resources may not create similar learning experiences. Instead, it may reduce learners' learning performances [5]. Additionally, learners' motivations and influential factors vary because of socio-cultural differences in different communities. This requires effective design interventions considering learners' motivations, expectations, experiences within online learning environments, and socio-cultural differences [12].

Despite numerous benefits and usefulness of online learning highlighted in literature [8], the majority are hesitant and reluctant to use online platforms for learning in Bangladesh [4]. In a study [4], researchers find most of the students of

Bangladesh at the university level have a positive perception of online learning. However, there are constraints as well, for example, poorly designed learning materials allow limited interaction. Therefore, it is imperative to investigate the hardships learners face in Bangladesh with the conventional usage of online platforms for learning.

3 Methodology

We framed our research from the perspective of students to understand the usage of existing online platforms by surfacing the current usage challenges. Therefore, we performed a mixed-method study which included semi-structured interviews and an online survey. The target participants are undergraduate students of an engineering university of department computer science and engineering in Bangladesh. The research study was approved by the Ethics Committee, a part of the Integrity Strategy and Innovation, of the institution of the authors. Firstly, we interviewed 18 engineering students. We maintained diversity in the class standings (first, second, third, fourth), and gender during recruitment. 18 interviewees participated in 20 min to 40 min long semi-structured interviews in the local language, i.e., Bengali. over phone calls or Zoom meetings. The interviews were audio-recorded with the permission of the interviewees. Out of 18 participants aged between 20 to 25 years, 10 participants reported being male and 8 participants reported being female. Accordingly, the audio data of the interviews were transcribed, anonymized, and translated into English. We used thematic analysis and the open coding procedure [2] to discover various themes from the transcribed audio data. Subsequently, we surveyed 239 students aged between 20 to 25 following non-probabilistic sampling and snowball sampling. Among our 239 participants, 156 reported as males, and 83 reported as females. Among the survey participants, 15.48% were the first year, 20.92% were the second year, 20.5% were the third year, 43.1% were the fourth year undergrad students. The questionnaire of the survey was distributed using Google form and it includes both open-ended and closed-ended questions. The options for close-ended questions in the survey were placed with the help of responses of the interviews since we surveyed after taking the interviews. Accordingly, the survey questions were categorized into themes that were derived from the interviews. From the interviews and survey, we discover the influential factors that motivate them to take help from online platforms for learning, their preferred platforms, challenges they face while using those online platforms.

4 Results

Here, we discuss our findings associated with the themes (Table 1) developed from the interview study and the survey of participant students.

Table 1. List of themes and descriptions associated with the interviews and the survey.

Theme	Description
Influential factors	The influential factors behind taking help from online platforms for learning purposes
Usage Pattern	The online platforms that are more preferable than others for learning purpose and the reasons for this usage
Challenges	The issues students face while they use online platforms with learning
Expectations	The expectations from online platforms with to meet requirements

Table 2. Shows (a) influential factors to take help from online platforms for learning, (b) challenges faced while using learning resources, and (c) challenges faced while using online platforms by the students of the survey (n = 239)

Influential factors to take help from online learning platforms	Survey (%)
Easier to understand	71.5
International standard	29.3
Availability of resources	56.1
Readily accessible	70
Numerous types of resources	51.5
Outcome of the learning resources	33.1
Less self-consciousness	11.7

(a)

Challenges faced while using online learning resources	Survey (%)
Lengthy course-outline	62.3
Lack of proper evaluation	33.5
Hard to navigate to previous sessions	19.7
Non-updated help page	26.4
Less interaction	32.6
Lack of consistent monitoring	13.4
Paid resource	38.9
Trust issues with less familiar resources	22.6
Instructors' accent	8.8

(b)

Challenges faced while using online platforms	Survey (%)
Delay to find suitable learning resource	77.4
Inconsistent ranking of the links of preferred resources	38.89
Not showing important links if the entered keyword is slightly inaccurate	50.2

(c)

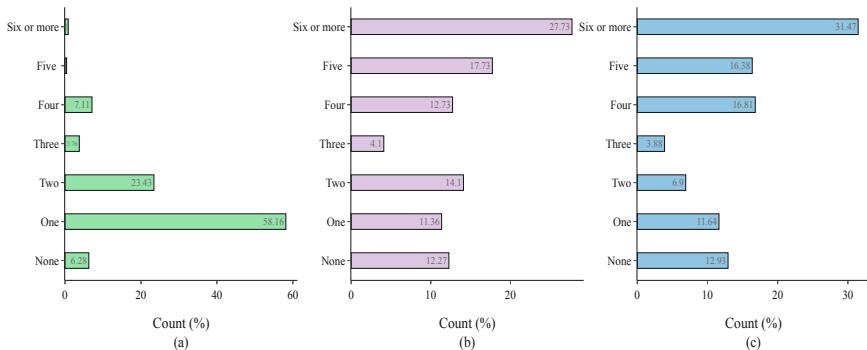


Fig. 1. Shows (a) the number of MOOC platforms, (b) the number of YouTube educational channel, (c) the number of learning websites, students ($n = 239$) follow

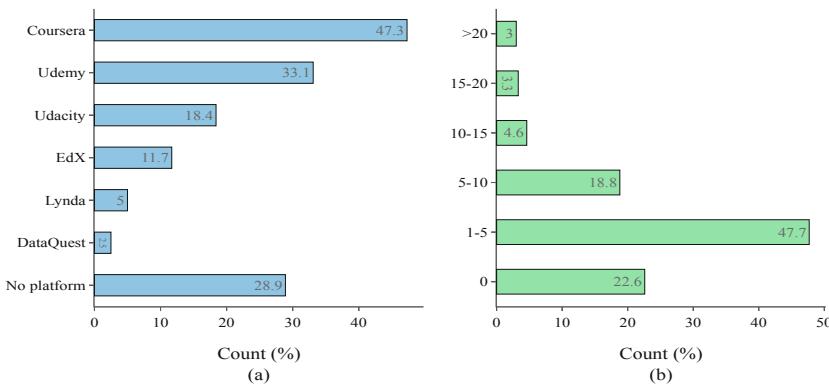


Fig. 2. Shows (a) the most used MOOC platforms by the students ($n = 239$), (b) the number of online courses taken by the students ($n = 239$) through MOOC platforms

4.1 Influential Factors

All interviewed students expressed they take help from online platforms for their learning purposes. From the interviews, it was revealed that several factors influence them to take online help which includes easier understandability than the physical resources, numerous types of resources with the flexibility to choose from them, the standard of the learning resources without any bias, availability of the resources which gives them the flexibility to learn any time, the outcome of the learning resources such as certificate after completion of a course, and less self-consciousness while taking help online. Some participants mentioned they feel comfortable interacting with others virtually rather than physically. Table 2 (a) informs the influencing factors related to the usage of online platforms for learning from our survey results.

4.2 Usage Pattern

All interviewed students mentioned that they are familiar with existing online platforms such as YouTube, Google, MOOC, etc. We also wanted to know if they believe those platforms help them in learning and most of them expressed positive remarks. They also expressed the reasons to prefer a certain online platform for learning purposes over others. Some of them said they prefer where links of numerous platforms are being shown at the same time, which helps them to choose any among them. Some mentioned they prefer platforms where visual explanations are provided. To emphasize the preference for a specific platform over others, P6 shared, "*I often try to find and learn a topic in a short time. YouTube helps a lot in this case*". Almost all of them said they use multiple online platforms while learning a topic because sometimes only one platform does not provide them with their required resources. Accordingly, our surveyed students follow MOOC platforms, YouTube channels, discrete learning websites for learning purposes (Fig. 1). We find out which MOOC platforms students use most and the number of courses taken using MOOCs as well (Fig. 2).

4.3 Challenges

Our interviewed students depict how the existing online solutions sometimes fail to fulfill all their requirements. According to them, limited search results shown in some platforms make them switch between platforms frequently to find the most suitable learning resource. It takes them a lot of time to find the exact required resources. Often some important resources' links are shown bottom in the search results in some online platforms. Some platforms often fail to recognize the keyword if they are entered incorrectly. However, some of them ($n = 6$) mentioned they do not feel any lack in the existing learning resource platforms. Interestingly, the participants who mentioned they do not face any issues with the existing platforms are the first year ($n = 3$) and second-year ($n = 2$) students except one. We discover the challenges our surveyed students come across while using online learning resources and platforms (Table 2 (b) and (c)). Further, our interviewees mention the disadvantages of taking this online help for learning purposes. Some feel since many resources can be found, online plagiarism while doing academic tasks has become common. Many lose interest to dive deep into a certain topic since there are various types of resources available online which make them confused and distracted.

4.4 Expectations

Interviewed students' mentioned their expected characteristics in an online platform, which will assist them to access their required learning resources without any delay. They wanted their required resources' links to be shown above the search results, multiple types of resources being provided at the same time, accessing their required resources without being familiar with so many online platforms, etc. Mainly they wanted to mitigate the challenges they face

while using online platforms. The interviewed students also came up with their expected characteristics in learning resources, which include a short but in-depth explanation, updated help page, easy navigation, communication among the learners, availability of practice module, proper evaluation of the learners, the international standard, updated frequently asked question, free of cost, etc.

5 Discussion

This study provided insights on the role of online platforms for learning purposes by surfacing the challenges of students.

5.1 Influential Factors for Online Learning

We investigated the influential factors related to students' using online platforms for learning which contribute to prior research [6, 11] on the adoption of online learning. Our discovered influential factors can categorize into four categories- a) social factors b) human factors c) system quality d) information quality. Students look for trusted, credible, and familiar online platforms to search for resources. They feel self-conscious while interacting with instructors, peers for learning purposes physically, which is not in the case with virtual interaction. These are social factors. Human factors such as easier understandability, ready accessibility, gaining a certificate affect them as well. System quality factors include showing preferred resources at the beginning of the search results, having an evaluation system, etc. as well. Information quality factors such as high standards, more structured resources with effective information motivate students to take help from online platforms for learning purposes.

5.2 Managing Online Platforms Multiplexity for Effective Learning

Students use online platforms and communication media for learning purposes. However, they are not satisfied as per expectation in terms of their required needs. They feel there is less opportunity to customize a platform. They face delays in finding suitable learning resources using existing online platforms. However, the challenges of engaging with online platforms for learners involve not just one single platform, but a complex online learning ecosystem. Accordingly, we provide evidence of how students perceive the effectiveness of different online platforms for learning: Google was seen effective at showing numerous types of resources at the same time, YouTube was seen as particularly useful for providing learners opportunity to learn in a short time and MOOCs were seen effective at aggregating detailed information about a learning topic. However, using multiple online learning platforms requires time, a relatively stable motivation, collaborations among peers for effective learning. Most learners are constrained in their capacities to be able to manage and fully maximize the power of multiple online learning platforms. These insights extend prior work [3, 7, 9] examining learners' practices in specific types of online platforms for learning.

5.3 Design Implications

Students' expectations suggest that they need interlinking between platforms to reduce delay to find their suitable learning resources and their required learning resources' links should be shown at the beginning in the search results. From these, we can propose a platform where learners can select which type of resources they wish to get so that they do not need to search for a long time to find the perfect resource. We can also propose a personalized search engine for learning resources, where search results links will be shown with appropriate ranking based on students' preferences. These preferences will be derived from students' profiles, preferred resource types, students' most used platforms. Thus, this study extends our thinking of enabling interactions beyond the traditional online platforms and yet to build a specific platform for learning with specific needs that can make learners' searching and navigation easier along with personalization. We find that most students do not prefer native resources and the reasons specified are a scarcity of resources and low standards. Additionally, challenges and design issues specified by the students can help to create future design interventions. The content creators should keep in mind the design issues while creating content for the learners.

6 Conclusion

Online platforms have become important for students to gain knowledge. We conduct an interview study and an online survey to find out the usage pattern, motivating factors behind their interaction with different types of online platforms for learning purposes, and issues they identify while using those. We present several insightful findings from our rigorous user studies. We find that learners use multiple online platforms simultaneously for the effective learning experience. We also discuss design implications to address the concerns of students.

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