

# Critical issues of online learning management in higher educational institutions in a developing country context: examples from Ghana

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## Abstract

**Purpose** – Online learning has come to stay in a technologically advancing world with increasing populations. The search for ways to make online learning more efficient and effective in some developing countries continues as the accompanying issues in developing country contexts abound. This paper explores the issues that underlie online learning management in a developing country context, focusing on the Moodle, Sakai and Zoom platforms used in some selected public universities in Ghana.

**Design/methodology/approach** – The study relied on the qualitative approach to data collection and a descriptive design for analysis. Using the social constructivism theory, the paper discussed the critical issues students, and to a lesser extent, instructors encounter in their engagement on these platforms for academic learning.

**Findings** – The study found that the inefficient use of these platforms is due to several factors including the high cost of data, poor perception of the quality of online learning compared to traditional in-person contacts, poor attitude of students, low participation in online learning, lack of computers and poor internet connectivity among others.

**Research limitations/implications** – It is important to mention that this study was limited to some selected public universities in Ghana. Data could have been collected from a wider sample including other Ghanaian tertiary institutions or some other developing countries. The similarity of study outcomes in other developing countries, however, suggests that similar results would have been obtained in an international sample.

**Practical implications** – Despite the robustness of the Learning Management systems in place, the evidence suggests that their utilisation is far less than optimal. However, with relevant policies and the provision of needed technical support, training, provision of equipment like computers for use by both students and instructors and efficient internet connectivity, the LMS platforms could be more efficient for online learning.

**Originality/value** – The authors conducted this research using original data from interviews in the selected public universities in Ghana. The data was meant to inform the discussion on some of the critical issues that underlie online learning in a developing country context. Although the study relied on data from selected public universities in a single country, its outcomes reflect fundamental issues of online learning in a developing country context which find relevance in available study outcomes.

**Keywords** Online learning management, Higher educational institutions, Developing country, Ghana

**Paper type** Research paper

## Introduction

Online teaching and learning have been integral to higher education delivery globally (Ali, 2020; Ayu, 2020). Online learning refers to using new multimedia technologies and the Internet to afford learning opportunities for many students in different locations. Its implementation eases pressure on the already overstretched facilities and services through distant exchanges, virtual learning and collaboration (Ali, 2020; Castro and Tumibay, 2021;



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Dumford and Miller, 2018; Sarker *et al.*, 2019). In more advanced countries, online learning plays a significant part in academic learning and lesson delivery in many of their higher education institutions (Bregar *et al.*, 2022; Renu, 2021). Online learning platforms in the developed world are generally both efficient and effective due to well-designed and maintained systems and programmes that promote and enhance online learning (Batdi *et al.*, 2023; Jena *et al.*, 2021; Singh *et al.*, 2021).

This mode of delivery of higher education has recently become more popular in higher education institutions in most developing countries but not without some challenges (Barrot *et al.*, 2021; Lemay *et al.*, 2021; Mukhtar *et al.*, 2020). The reason for embracing online learning is in part, to widen educational possibilities and opportunities for many people, but also to make up for the extraneous factors including the lack of facilities to accommodate high student numbers, that hamper access to higher education for many qualified people (Sharma and Alvi, 2021; Eltahir, 2019). Globally, there emerged a refocus on the development and use of e-learning infrastructure for educational delivery during the Covid and immediate post Covid era (Aulakh *et al.*, 2023; Qiao *et al.*, 2021; Sharma and Alvi, 2021; Thaba-Nkadimene, 2020). These online systems have been maintained and further upgraded in some higher educational institutions as a model for enhancing teaching and learning convenience and for accommodating larger student enrolment. In developing countries, however, while some higher educational institutions have made decent progress in the development, deployment and use of online infrastructure to support learning and lesson delivery since the Covid period, others are still struggling with online learning technologies both in their appreciation and effective deployment and use of online systems for efficient educational training (Adekanmbi *et al.*, 2021; Kamysbayeva *et al.*, 2021; Khan *et al.*, 2022; Nuseir *et al.*, 2021; Zarei and Mohammadi, 2022). The effort to introduce computers and network higher educational institutions in developing countries for online learning is still ongoing (Mathrani *et al.*, 2022; Panigrahi *et al.*, 2018; Owen *et al.*, 2020; Wang *et al.*, 2023). However, the use of the Internet and computers remains rudimentary in most parts of Africa and student participation in online learning is far from satisfactory (Jamil and Muschert, 2023; Rafique *et al.*, 2023).

In Ghana, for example, public universities have responded positively to the need for the deployment of online learning tools including Learning Management Systems (LMS) such as Moodle and Sakai among others, to ensure that learning continues progressively (Addo *et al.*, 2022; Adarkwah, 2021). However, there are challenges to their effective deployment (Botchwey, 2024; Adekanmbi *et al.*, 2021; Aboagye *et al.*, 2021; Sarpong *et al.*, 2021). Online learning does not provide the opportunity to have face-to-face interaction with the instructor which is very significant for establishing a bond between the student and the instructor (Gherheş, Stoian, Fărcaşiu and Stanici, 2021; Sjølie *et al.*, 2022). Some of the challenges include the absence of computers for students and sometimes skilled and experienced teachers, the high cost of internet data, hardware issues, and internet connectivity problems that frequently disrupt course delivery among others (Tabiri *et al.*, 2022; Zarei and Mohammadi, 2022). There is no gainsaying that online learning has come to stay to complement traditional in-person teaching and learning in higher academic institutions globally (Ayu, 2020; Castro and Tumibay, 2021). There is an emerging rethink and refocus on the importance of the development of online learning in some developing countries (Hove and Dube, 2021; Nyambuya *et al.*, 2021; Tumwesige, 2020; Yıldırım *et al.*, 2021). While some higher academic institutions are beginning to realise the imperative for a better focus on online learning, especially post-COVID-19, some have taken the initial steps, yet also, others have made significant progress in the investment in online learning infrastructure including periodic training of faculty, staff and students on how to effectively utilise online learning to achieve academic career goals (Akhter *et al.*, 2022; Ndibalema, 2022; Palvia *et al.*, 2018). This reveals a gap in online learning in most

developing countries and Ghana specifically, due to the non-availability of Palviarobust online learning infrastructure, weak technical skills and support systems for effective online deployment, inadequate training of instructors and students and non-availability of computer devices for use to make online learning more effective in developing countries (Abdulmajeed *et al.*, 2020; Zarei and Mohammadi, 2022). This study, therefore, becomes important in several ways; (1) It seeks to explain the challenges of students in selected public universities in Ghana in their use of the Learning Management systems (LMS), (2) How these challenges affect the quality of education in a developing country context and (3) Presents the way forward to improving online learning in a developing country context. In the main, the study seeks to address the following issues: (1) Why are the LMS Platforms; Moodle, Sakai and Zoom not being efficiently utilised to learn in the selected Universities in Ghana? (2) What are the germane issues in online learning in these Universities? (3) What are the prospects for online learning in a developing country context?

The rest of the sections focus on a literature review that supports the issues under consideration, the methods including sampling procedures and data analysis methods, the presentation of the results, the discussion and implications for practice and policy, limitations of the study and direction for future research and conclusion.

## Literature review

Online learning has become increasingly relevant in higher educational institutions after COVID-19, particularly due to the advancement of technology and the need to broaden access to higher education for the ever-increasing demand because of population increases around the world. The selected Universities are some of the public universities in Ghana that have embraced online learning in academic service delivery. The objective of this literature review is to explore and highlight the issues, challenges and prospects of online learning from a diverse perspective for proper contextualisation of the study.

### *General perspectives of online learning*

There have been several studies conducted on online learning and the prospects and challenges associated with it (Müller and Mildenerger, 2021; Zhang *et al.*, 2022; Dhawan, 2020). Lin *et al.* (2017) looked at the effects of online learning on learning motivation and learning outcomes. The findings of their study showed that online learning presents more positive effects on learning motivation than traditional teaching and utilizes the advantages of online learning to develop practicable teaching strategies for teaching effectiveness. Rasheed *et al.* (2020) examined the challenges in the online component of blended learning and student experiences. The purpose of their study was to measure the factors that affect the use of online learning and its effects on students based on three variables. These variables include time, technology, and workload. Apart from the unwillingness of teachers to include technology in face-to-face teaching, they also found that the challenge of educational institutions lies in the provision of suitable technology for online learning. Blundell *et al.* (2016) investigated online learning in schools, arguing that the transformation of teacher practice and online learning remains unrealised, attributing it to a range of challenges associated with intrinsic and extrinsic influences argued not to be well conceptualised. The study concluded that the integration of online technologies in teaching and learning globally to transform schooling has not been widely realised. Teo and Divakar (2021) explore the gaps between traditional learning and mobile learning. The study concluded that students should be encouraged to adopt collaborative problem-solving learning styles while emphasizing the need to provide access to electronic materials to make online learning more effective.

*The underpinnings for online learning*

Online learning offers several benefits to students. This includes flexibility in learning, convenience, access to a wide range of resources, and the ability to collaborate with peers and instructors (Almahasees *et al.*, 2021; Paudel, 2021). Online learning also provides students with the opportunity to engage in active academic work, which can enhance their critical thinking and problem-solving skills (Wediyantoro *et al.*, 2020). Several studies have examined the benefits of online learning in universities around the world. For example, a study by Alqahtani and Rajkhan (2020) found that online learning had a positive impact on student's academic performance and their overall satisfaction with the learning experience. The underpinnings for online learning can be seen in various ways. First, it allows for flexibility in terms of scheduling and location. Students can access course materials, participate in discussions and take part in lectures from any location, at any time, if they have an internet connection. This flexibility is particularly important for students who often have other commitments such as work and family responsibilities. Furthermore, a meta-analysis of 99 studies by Means and Neisler (2021) found that online learning had a significantly positive effect on students' achievement in comparison to traditional classroom instruction. Second, online learning is believed to have promoted student engagement and active learning. According to a study by Namestovski and Kovari (2022) students learning online spend more time engaging in course materials than their face-to-face counterparts. This is because online courses often incorporate interactive activities such as quizzes, discussions, and multimedia that encourage active learning. Online learning also provides access to a wider range of learning resources. Online courses often provide students with access to virtual libraries, databases, and other educational materials that they may not have access to otherwise. This is particularly beneficial for students who need to conduct extensive research for their thesis and dissertations.

*Challenges of online learning*

Despite the numerous benefits of online learning, there are also some challenges associated with its implementation. Panigrahi *et al.* (2018) identified issues such as technical difficulties, students' lack of motivation and the need for instructor training as some of the challenges of implementing online learning strategies. The absence of face-to-face interaction can lead to feelings of isolation and disengagement among students. Ahmed and Opoku (2022) point out that students studying online are more likely to drop out of courses than their face-to-face counterparts. Another challenge is the need for technical skills and support for students and instructors. Beyond the need for students to have access to a computer, a stable internet connection and basic computer skills, (Aboagye *et al.*, 2021), the influence of the home environment has been identified as playing a role in student motivation for effective participation in online learning in most developing countries (Dhingra *et al.*, 2021). The challenge for some students not having the necessary technical skills or access to reliable internet connections (Dumbiri and Nwadiani, 2020), especially in some developing countries continues to be a bane to the successful deployment of online learning in many of these countries. In addition, technical difficulties such as server crashes, internet and power outages can disrupt online learning.

The outcome of this review has highlighted several issues, challenges and prospects of online learning from the global-to-sub-regional-to-country-specific perspectives. First, online learning presents students with the opportunity for active online academic work and learning skills and helps them develop independent and critical thinking and problem-solving skills through collaborative learning. Second, apart from the generally underdeveloped nature of online learning infrastructure in most higher institutions in developing countries, the competence of instructors and students for effective utilisation of online learning platforms is still developing. Other issues and benefits include flexibility, active learning and access to a

wider range of resources. However, challenges such as poor motivation, poor student participation, erratic internet connectivity and power outages, inadequate technical skills and support systems for students and instructors alike, and the digital divide or non-availability of personal desktop and/or laptop computers leading to the over-reliance on mobile phones as alternatives by the students, are some of the challenges confronting effective online learning in the developing country contexts. The prospects point to the opportunity for more student enrolment and the willingness to embrace and develop online learning infrastructure no matter how slow and incremental the case may be.

### *Social constructivism: A theoretical perspective*

Social Constructivism was developed to complement the earlier behaviourist and cognitivist theories. The Components of Social Constructivism are social interaction, zone of proximal development, community of practice, scaffolding, cognitive apprenticeship, collaborative learning, reflection and metacognition and knowledge construction (Sivan, 1986). This theory posits that both students and teachers construct their understanding of the world through a series of practical social experiences in which learners learn by doing, collaborating and reflecting with others (Gergen, 2012). Lev Vygotsky, John Dewey, and Jean Piaget focused on online teaching and learning as they described it to be a complex and interactive social phenomenon between teachers and students (Picciano, 2021). To Dewey, the teacher provides the social environment in which the learner can construct with others the knowledge necessary to solve a problem. "Sociocognitive conflict", which is one of the fundamental principles of constructivism, asserts that cognitive conflicts lead to higher levels of reasoning and learning and that such conflict arises out of the dynamics of social exchange when the learner sees contradictions in their existing understanding and what they experience. Constructivists believe that problem-based environments promote peer collaboration and the exchange of ideas, which are major sources of cognitive conflicts (Piaget, 1970). Vygotsky posited that learning is problem-solving and that the social construction of solutions to problems is the basis of the learning process (Pardjono, 2016).

The current study mirrors the online learning experience of students from a developing country context. The promise of the theory to explain the instructional design that enhances collaboration and problem-solving looks more applicable in a well-designed and efficient online educational delivery system that is effectively used. It leaves out the role of the providers and managers of the system which is an integral part of the teaching and learning system or infrastructure that needs to work efficiently to ensure that teaching and learning run smoothly without major hindrances. Nevertheless, the theory has been used in many developing countries for similar studies (Alismaiel *et al.*, 2022; Munuku *et al.*, 2022). The challenge for developing countries is not only inadequate training of both students and instructors or lack of appreciation of the importance of online learning in a fast-growing technological world. Beyond that, the increasing number of students with weak online teaching and learning infrastructure makes online learning less effective, less interactive, less collaborative and less preferable. This study extends the problem-solving inclination and other frontiers of this theory to include all others in the online teaching and learning stream who are responsible for ensuring that it works effectively to deliver sound teaching and learning in a developing country context.

## **Methodology**

### *Research design*

The research employed the descriptive design to explain the experiences of students in their use of online learning systems in a developing country context (Kim *et al.*, 2017; Siedlecki, 2020;

Rizvi and Nabi, 2021). This provided the basis for a careful description and explanation of the views of students on the challenges and issues that confront them in their use of the online learning system at the tertiary level in developing country settings. Personal face-to-face interviews were held with students who have used the LMS Platforms in their studies at any point from levels 100 to 400 of their learning experience of the selected public universities in Ghana. This design offered the opportunity for the participants to freely express themselves by dispassionately responding to issues as much as they could. It also allowed the researcher to probe further with follow-up questions to enrich the data for an in-depth discussion of the issues and challenges that confront students in their use of the LMS for learning (Zadkowska *et al.*, 2022). With the above, therefore, the issues and challenges of student use of the online system were fully discussed in appreciable detail.

#### *Research setting*

The study was conducted in selected Public Universities located in Greater Accra, the capital city of Ghana. The 2021 Population and Housing Census (PHC) puts Greater Accra's population at 5,455,692 with one of the highest inter-censal growth rates of 2.9, and with 91.7 of its total population living in urban centres (PHC, 2021). Accra is among Africa's largest cities in a region undergoing one of the continent's fastest rates of urbanization and is home to five of Ghana's public universities (GTEC, 2024). Rapid immigration, both from the countryside and from other West African countries (Schans *et al.*, 2018; Farrell, 2017; Owusu and Oteng-Ababio, 2015), coupled with inadequate and overwhelmed facilities have increased pressure on public facilities including the demand for increased enrolment for thousands of applicants in higher educational institutions in Ghana (Anarfi *et al.*, 2020; Danso *et al.*, 2021). This phenomenon, which is characteristic of most developing countries, is expected to continue. Given the city's role within Ghana, it can only be projected that Accra will see continued growth well into the future with implications for all sectors and spheres of the country including education.

#### *Data collection and sampling strategy*

Participants were purposively sampled (Campbell *et al.*, 2020) from all undergraduate students of Levels 100 to 400 of the selected public universities in Ghana. The sampling strategy was purposive to the extent that respondents would have had some experiences with the use of the LMS and those identified as such were randomly selected because they are a homogenous sample within the selected institution. In all, thirty-six (36) students were sampled and interviewed in-person or face-to-face (DEWI, 2021; Muthanna, 2019; Pagliarin *et al.*, 2023), twelve (12) from each institution and three (3) across all levels (Boddy, 2016). Data reached saturation (Braun and Clarke, 2021) at various stages in the institutions (9th, 7th, and 8th) where views no longer varied significantly, but the rest were still interviewed to make sure that all experiences and students who needed more time to make up their minds to be interviewed were given the opportunity. The students interviewed were enrolled on the LMS platforms and had first-hand experiences of their advantages and challenges for learning and examination. They also took part in lectures via Zoom. The questions asked were similar and couched around the issues and challenges of students on the use of the online system for learning and what can be done to reduce the challenges and improve student participation and performances. A semi-structured interview guide was used to conduct the interviews (Kallio *et al.*, 2016). Open-ended questions were used in which respondents were required to demonstrate their understanding of the issues and challenges with the use of the LMS and Zoom platforms for learning and lesson delivery. As a result, participants were allowed to express themselves freely during the interviews. Follow-up questions were asked where

necessary, but leading questions were avoided as much as possible. All interviews were conducted with participants on the University campuses. Each interview lasted between 30 and 40 min (Maxwell *et al.*, 2022; Okediran *et al.*, 2020). However, towards the end of the interviews, interactions lasted 10–25 min when there were no longer new issues and challenges raised. The interview time and venue were scheduled for the convenience of the participants (DeJonckheere and Vaughn, 2019). All interviews were audio recorded and later transcribed verbatim, coded and then quoted accordingly in the results section of this study. Table 1 shows a distribution of the sample and its characteristics.

### Data analysis

Thematic analysis was used for this study. This is a method of analysing qualitative data that involves reading through a set of data and looking for patterns in the meaning of the data to find themes (Clarke and Braun, 2017; Terry *et al.*, 2017). It allows for a wider analysis of all pertinent data (Snowden and Atkinson, 2012). Transcripts were read several times to gain a full sense of the participant's understanding of the issues (Castleberry and Nolen, 2018; Peterson, 2019). These transcripts were then coded by reading through line by line and assigning a word or phrase that accurately captured the essence of the data (Trainor and Bundon, 2021). Questions such as "What are the perceptions of students on the effectiveness of the LMS Platforms for learning"? "What are some of the challenges in the use of the LMS platforms for learning"? and "How can the LMS platforms be made more effective for learning"? were asked. Through this process, some of the codes generated such as poor internet connectivity, high cost of data, lack of computers, and ineffective student participation among others were grouped under challenges while some such as multitasking opportunities and the convenient nature of the online learning, were grouped as benefits or advantages. Similar codes were grouped, re-grouped and refined to generate themes which were meaningful as issues and challenges of the use of the LMS platforms. It is considered that responses on issues and challenges of the use of the LMS platforms for learning and lesson delivery were reported during interviews conducted under prescribed research ethics and faithfully represented the true reflections of the respondents. This process allowed for the identification and categorisation of themes for the analysis (Crowe *et al.*, 2015; Green *et al.*, 2007). To ensure that the study accurately depicts the views of respondents and therefore dealing with issues of subjectivity and author biases, the views were recorded and transcribed verbatim and quoted where necessary in the results section while the discussion was anchored on the data and supported with relevant literature.

Institution	Sample distribution	Gender		Level (L)	Age bracket			Frequency	
		Male	Female		20–25	26–30	31+	Male	Female
Institution 1	12	4	8	3 each of L1,2,3 and 4	7	4	1		
Institution 2	12	6	6	3 each of L1,2,3 and 4	8	3	1		
Institution 3	12	7	5	3 each of L1,2,3 and 4	6	3	3		
Total Sample	36							17	19
Percentage (100%)								47	53

**Source(s):** Field Data

**Table 1.**  
Sample distribution  
and characteristics

## Results

This section presents the research findings. The purpose of the study was to discuss the effects of online learning on students in developing country contexts focusing on some selected Public Universities in Ghana. Generally, the findings point to frustrations due to the exorbitant cost of internet data, inconsistent and disruptive internet connectivity, and ultimately, poor student participation in online learning. However, online learning on many occasions has proven to be convenient by helping to save time and transportation costs.

### *Challenges in the use of the learning management system and Zoom Platforms for learning*

The views of students on the Learning Management System and Zoom platforms revealed some critical issues. Three themes emerged from the coding: negative perception, ineffective use of the learning management system and Zoom platforms, and negative attitude toward online learning.

*Perceptions.* The findings have revealed that the perceptions expressed by the students towards online learning were due to their experience with the use of the school's LMS and Zoom platforms.

I didn't understand a whole lot during online classes, and I spoke to some of my mates and so far, they don't like the idea of online classes. (PI, Respondent 9)

I'm a serious student but if you ask me about these online classes (chuckled) it's not an interesting thing or an encouraging platform to study as university students. (PI, Respondent 7)

Students have different perceptions; some students think that it's okay, some also think negatively while others also think it is data-consuming. (PI, Respondent 6)

Generally, it was evident that most of the participants shared negative perceptions or experiences with the online learning system due to some factors including poor internet connectivity, difficulty in submitting examination scripts, and technical hitches. The positive side expressed had to do with the convenient nature of online learning.

*Attitude.* The findings also revealed that online learning makes students develop a lazy attitude towards learning. According to these students, the online learning system itself is a lazy approach to learning and makes them lazy.

Online learning makes me very lazy. It makes me lazy because I don't have to move from my bed to be in class. (PI, Respondent 4)

... ok so to be very honest this online learning makes me very lazy, especially this semester. I became very lazy because I find it frustrating. (PI, Respondent 7)

Perception-wise, students think it's a lazy approach. (PI, Respondent 8)

The findings of this study fall in line with [Turner's \(2020\)](#) study in which he suggested that many students lack motivation for online learning.

### *Advantages of the use of the learning management system and Zoom Platforms for learning*

Online learning also presents some advantages for students which was generally acknowledged. Some themes emerged through coding. They include multitasking opportunities and the convenient nature of the online learning system.

*Multitask opportunity.* Some students saw learning through the LMS and Zoom platforms as opportunities for multitasking which helps build their capacity and resilience.

Because I can still have the time to listen to the lecturer and do other stuff, let's say someone who is working part-time to support him or her pay the school fees can have time to work and school at the same time. I do not need to stop working to school. (PI, Respondent 1)

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I think it's very effective in the sense that you can do a lot of things at the same time as compared to face-to-face learning. With face-to-face learning, you would have to listen and make eye contact with the lecturer for him to know that oh you're paying attention. But with the online teaching and learning, you can listen and record the class at the same time for future reference. (PI, Respondent 5)

*Convenience.* The findings also pointed to some convenience in the use of the LMS Platforms.

So, it is convenient because you can be in the house, relax and still be listening to lectures but you can't do that in the lecture room. So, it's convenient for both Lecturers and Students. (PI, Respondent 2)

I think it is convenient. With online learning, I can be in the comfort of my room, or my bed and I can easily access a class and study materials. (PI, Respondent 5)

This was confirmed by the findings of Poole (2000) that students participated in online discussions at the times which are most convenient to them, such as on weekends, and accessed the online course from their home computers, which was the place most convenient to them.

Other Germain Issues affecting the use of the Moodle and Zoom Platforms for Learning in a developing country Context.

Some challenges affect the use of the LMS and Zoom platforms in a developing country context. The themes that emerged through coding include the exorbitant cost of data, poor internet connectivity, difficulty in submitting exam scripts, low-class participation and the frustrating nature of the online learning system generally.

*Exorbitant cost of data.* A major theme that ran through the responses of the participants was the high cost of data in the use of the online system. This has affected students' participation in the online learning system variously. The study found that students were not able to join the online learning platform due to their inability to buy data or their data running out during course delivery.

Ooh okay, I can't say one, but I will say all the online platforms that we use require a lot of data. (PI, Respondent 2)

Data for online learning is too expensive . . . some students can't join classes because they have problems getting data. (PI, Respondent 4)

"Some also think it's data-consuming" and "expensive using online studies platforms". (PI, Respondent 9)

This theme explains that students generally think or believe that the online learning system is costly.

*Poor internet connectivity and lack of personal computers.* This theme suggests that poor internet connectivity is another challenge students encounter during the use of online learning platforms. The study found that poor internet connectivity is one negative effect of online learning of students in these selected public universities in Ghana. According to these participants, poor internet connectivity was a major challenge and made it impossible to join some online classes. They also mentioned the lack of personal computers at home and in school to enable them to effectively participate in online learning.

I would have to wait in the waiting room for a very long time because the Lecturers' internet was not good enough. (PI, Respondent 2)

One challenge has to do with getting data and a stable network. I think that's one thing students complain about, and then I think that's all. (PI, Respondent 4)

Some of us don't have personal computers at home and in school, you can see we do not have computers we can walk in at any time and use for our learning. So, the online learning is very difficult for some of us (PI, Respondent 5)

These participants point to poor internet connectivity and lack of computers as major challenges underlying the online learning system of the University. According to these respondents, the system keeps logging them out intermittently, making them lose out on most of the things taught by their facilitators.

*Low student participation.* Low-class participation was found to be the outcome of poor internet connectivity and a lack of computers. Some of these themes were captured in the following views.

I will log in and the thing will log me out, sometimes the internet will just go off and I will end up missing classes. Sometimes too I don't even participate at all because the network will just go off. (PI, Respondent 3)

Students are so reluctant when it comes to joining classes, they find all sorts of excuses of missing classes. So, I think they find it ineffective. (PI, Respondent 5)

I remember we were writing our interim assessment on the LMS, and the internet went off. The system marked and gave us scores, but we didn't finish the quiz. We were made to write in person to make it up. So, the challenges are real. (Respondent 7)

The issue of poor internet connectivity and a lack of personal and institutional computers partly accounts for students' inability to effectively participate in online learning.

*Prospects for online learning in developing country contexts.* The need for continued improvement in online learning infrastructure in developing countries was found to be critical since informants believed that online learning has come to stay in developing countries as an alternative at best or complementary at least depending on the situation to the traditional in-person approach.

I think that using the LMS and Zoom Platforms, even though some of us have challenges right now when we have data and the internet is working well, is good for us. I can study for my degree while working. I do not need to incur transportation costs and all the inconveniences coming to school. (Respondent 11)

I was sick at some point with an airborne disease. I couldn't come to school. It was a health risk to even try to come to school. But while at home, I was doing my work, downloading the course materials, and submitting my work on the LMS. I cannot do that if I must be on campus for the face-to-face approach. (Respondent 8)

The way technology is moving fast if we have computers and better internet, many more people will enrol on online learning because it is convenient. It is now very difficult to raise money. So, if you can work and school at the same time through online learning, it will be very good for many people and the school will also make money because we will be able to pay our fees. (Respondent 12)

The prospects for online learning are clear for both the institutions of higher learning and students as opportunities for resource mobilisation and convenience are available for both the institutions and students respectively.

### Discussion and implications

Online learning is a practice embraced globally in higher institutions of learning (Mhlanga *et al.*, 2022), affording many people from around the world the opportunity to benefit from higher education more flexibly, reducing the cost of obtaining a degree and allowing students to develop their careers while furthering their education at the same time. It has allowed Universities to enrol many more students (Patra *et al.*, 2024; Castro and Tumibay, 2021) without the need for physical infrastructural expansion to accommodate students in lecture halls. In many developing countries, the infrastructure for effective online learning remains woefully inadequate (Zarei and Mohammadi, 2022; Kundu and Bej, 2021), as the perception of

its effectiveness is still in question. The objective of this study was to discuss the critical issues that underlie online learning in a developing country context, using some selected public universities in Ghana, focusing on the Moodle and Zoom platforms as they remain the dominant online platforms mostly depended upon for online learning and student assessments in these Institutions. The study is guided by the Social Constructivism theory which posits that both teachers and students construct their understanding of the world and describe it as a complex and interactive social phenomenon (Picciano, 2021). In this complex academic interaction, there are challenges and opportunities with critical effects on the ultimate objective of effective academic online learning. The study revealed issues reflexive of developing country contexts including negative perception of the online approach to academic work, poor attitude by students towards online learning, high cost of data, low students' participation in online learning, poor internet connectivity and absence of computers for students. Respondents generally agreed that poor internet connectivity impedes effective learning through the LMS platforms and so many students miss out on online classes. Without access to effective internet connectivity, students lose out on information or lose out on a direct line of communication with schools and teachers (Lynch, 2017). This situation exacerbates the negative perception of students on the effectiveness of online learning (Abbasi *et al.*, 2020). The study's finding that the high cost of data is a demotivator of online learning and technical issues including poor internet connectivity, weak technical skills for effective learning on the LMS and Zoom platforms and lack of technical support are aligned with the theoretical and empirical literature on online learning (Nabila *et al.*, 2021; Aikina and Bolsunovskaya, 2020; Sinha and Bagarukayo, 2019). Perceptions of students that online learning plays second fiddle to the in-person approach (Saleh *et al.*, 2021; Agung *et al.*, 2020; Fahrudin *et al.*, 2022; Martin *et al.*, 2020) partly explained by some of the preceding reasons, including the loss of interpersonal interactions associated with the in-person learning approach were raised as issues affecting the effectiveness of the use of the LMS and Zoom platforms. For example, Hatsu (2020) argued that many facilitators used different online learning tools and platforms, which consume a lot of data and are outside the zero-rated data university online facility. The study is also in line with evidence from the findings of Agormedah *et al.* (2020) that lack of internet access and computers in homes affect the progress of online learning.

The effective use of the LMS in these Universities is further derailed by some students' inability to pay their school fees as a requirement for access to the system. The written interim assessment, which constitutes 20% of the total 40% of the overall interim assessment in one of the Universities is usually done using the LMS or in person and this is usually done in the seventh week of the semester. The most effective and efficient way of going around this continuous assessment component is through the LMS, especially when the student numbers are huge, sometimes between 2,000 and 4,000 students. However, due to various reasons often given by students, including unfavourable economic conditions, delayed scholarship disbursements, and loss of guardians/parents, among others, many students are unable to meet the deadlines for payment of school fees to give them access to the LMS to take part in the exams. All these factors render the LMS under-utilised and less effective as an alternative to the in-person approach. The study's findings also revealed that learning through the LMS makes students develop a lazy attitude towards learning. According to these students, the online learning system is a lazy learning approach. This is in tandem with other studies which suggest that online learning could lack the necessary motivation students need for effective learning (Saleh and Alim, 2021; Zaitun *et al.*, 2021; Turner, 2020). It is also explained in the socio-cultural context of Ghana in the developing country context. The perception that online learning plays second fiddle to the traditional in-person learning approach in terms of the quality of delivery, participation and value of certificates partly explains the challenges in the adoption and utilisation of the online

learning approach in Ghana and other developing countries (Agyekum, 2023; Kumi-Yeboah and Amponsah, 2023; Mathrani *et al.*, 2022).

There is a positive side to it as well. This includes flexibility to complete assignments at the time that is most convenient to students, advancement of education while working, reduced cost because students do not need to commute to attend lectures, more free time because of the freedom for students to use their time at will, increased course variety of education options. Students can enrol in the courses they are most interested in, availability of career advancement opportunities because students can continue working while pursuing academic credentials, increased collaboration through virtual group work and meetings, personalised education through participation in online discussions by mostly less assertive students, enhanced time management and online learning convenience (Guzman *et al.*, 2021; Alghamdi *et al.*, 2020; Bringman-Rodenbarger and Hortsch, 2020). The study revealed that students get the opportunity to multi-task during online lectures. They engage in other activities such as working and learning at the same time, studying course materials while working, using social media, and browsing the internet, among others while learning online (Lepp *et al.*, 2019). That may be practically unacceptable during in-person lectures. The challenge with this is that, without the required level of motivation or inspiration either intrinsically or extrinsically, the students are likely to do other things rather than focusing on online learning. While some may describe it as multi-tasking, others are likely to see the use of social media, working and learning at the same time more as a distraction, diversionary and antithesis to effective listening, co-construction and collaboration which are vital to effective online learning. Despite the enormous advantages involved in online learning, the evidence suggests that these advantages are not fully explored and utilised for learning in many developing countries (Dumford and Miller, 2018; Zylfiu and Rasimi, 2020). The prospects for online learning are also binary. Online learning offers opportunities in developing countries to enrol more students generally but more especially those in the working class, adults who would prefer online learning because of family and other reasons. It also offers opportunities for these universities to enrol more students due to limited infrastructure for in-person learning, and the desire to raise more money through student fees for the running of these universities which usually struggle to raise funding from alternative sources. This compels them to rely almost entirely on student fees for their operations. Its flexibility, accessibility, opportunity for a wider selection of programmes by students, and customised learning experience and cost-effectiveness, present online learning in developing countries, which are characterised by the lack of adequate school infrastructure to contain high student enrolment, inadequate public funding for the operations of institutions of higher learning as a viable alternative or complement to the traditional in-person learning approach (Oleksienko *et al.*, 2020; Simamora *et al.*, 2020). Beyond this global prospect, the recognition of online learning by developing countries as a viable source of revenue for funding the operations of these institutions of higher learning is a propellor for a more focus on needed infrastructural development and training to make online learning more feasible, enhancing, and reliable for higher education delivery in developing countries.

### Implications for practice

There are practical and policy implications for the study. First, unfavourable or negative perceptions by students of online learning stand to affect their motivation and involvement in online academic activities. This is partly reflected in their low participation in online lectures and discussions of an academic nature. The confidence of the students whose main lectures are online is also likely to be affected compared to their colleagues on the regular in-person stream. There is also likely to be a push for the test of system rigour and constant upgrade into a world-class standard when their lacklustre attitude and participation in the existing

system. Second, a negative perception, coupled with the high cost of data further exacerbates the challenges of deploying and effectively utilising online platforms, no matter the huge potential and educational and career-enhancing opportunities they may present. Third, institutional bottlenecks on the LMS, such as limiting accessibility to only students who have paid their school fees, leave the system with self-inflicted limitations that do not enhance its optimum usage for educational delivery. These students are unable to access course materials and attempt quizzes that could earn them some marks and help in their preparation for end-of-semester examinations, and this presents another set of challenges for online rigour and equality of opportunity for students. It also presents different challenges for those who mostly engage in online learning due to their course structure and those in different streams of the same academic programme. Fourth, attitudinal issues are sometimes complex and complicated, especially when there are no strict compliance rules and effective monitoring mechanisms to ensure effectiveness. Monitoring student participation in online lectures can be particularly tasking in developing country contexts, and efforts to model behaviour and attitudes for compliance can prove strenuous in terms of time, energy and resources. The outcome of a poor attitude toward online learning is non-participation or ineffective participation in online lectures, refusal to submit assignments and meeting deadlines, among others, with the overall tendency to produce half-baked or poor-quality graduates, which could have a long-term effect on the quality of education in a country.

### **Implications for policy**

Generally, the LMS is a great online platform for sharing course materials and examinations, especially for large numbers of students. The system can accommodate huge numbers and grading with excellent security features. Despite its deployment and use by the selected universities, especially during and post-COVID-19, evidence suggests that there is much more to derive from these online learning systems than is currently the case. To enhance the effective use of the LMS, there is the need for a grand policy to build a less disruptive online infrastructure and internet system on the one hand, while equipping students and instructors with all necessary tools such as computers and usage skills, readily available technical support system including training and participation compliance mechanisms among others, to make the LMS platforms such as the Moodle, Sakai and the Zoom as efficient as possible in terms of their management and use for higher educational online learning anywhere in a developing country context.

### **Limitations and direction for future research**

This study focused on selected public universities in the Greater Accra Region of Ghana. In as much as the selected universities adequately exemplify public universities in Ghana, some public universities are in more deprived regions within the country with more complex circumstances and challenges, including the absence of or critically less developed online infrastructure, non-availability of technical support systems and data affordability challenges for students and the lack of better qualified and experienced online instructors. Its limitation to the city of Accra also denies the work some relevant knowledge of the experiences of universities in other developing countries, especially those of the closer West African neighbours. A comparative study of public and private universities could have also presented knowledge of how some are getting it right while others are not. This provides the basis for future research, which could explore a larger sample to quantitatively analyse online learning comparatively, both involving universities in two or more developing countries or those involving public and private universities within the same country to understand the dynamics and challenges. A closer

look into the public universities located in more deprived communities in a developing country setting can also provide more insight into online learning in developing countries. It also points to the need for a comparative study of online learning management in Ghana with other developing countries to broaden understanding of their peculiar and common challenges in developing country contexts. The online learning management in Ghana could also be compared to brighter examples such as Kenya, the Philippines and Indonesia in terms of enrolment, infrastructural capacity and participation to illuminate the areas that require more management attention and investment for effective online learning in Ghana and other developing countries.

### Conclusion

The study set out to address three major research questions. Question one sought to examine why the LMS platforms are not being efficiently utilised to learn in the selected Universities in Ghana. The students shared their experiences with the use of these online platforms, citing poor internet connectivity, high cost of data, lack of personal computers, poor perception and bad attitude toward online learning, lack of technical support and low student participation in online course delivery among others. The second research question was meant to find out what the germane issues in online learning in these Universities are. Even though students complained about its use, the LMS Platforms continue to provide a viable alternative to in-person learning as one of the best online learning management systems in a Ghanaian University. Its usage convenience, especially for non-regular students, is an advantage to this category of students who are workers and those with special needs and preferences for online learning. It emerged that online learning has created a chance for students to be abreast with online platforms as an added advantage for personal technological development.

The findings revealed that learning through the online system also provided multitasking opportunities. The category of students who are workers can work in the office while participating in lectures to build a career and get a degree at the same time. The third research question sought to uncover the prospects for online learning in a developing country context. These students, especially the working class, students living in very remote places and also married and older students, prefer the LMS Platforms for reasons of cost reduction, convenience for work and family and more enrolment for people who otherwise may not be able to study for the first time or further degrees with the traditional in-person approach. It also offers the Universities the opportunity to mobilise resources through more student enrolment to run the schools in mostly under-resourced Universities in a developing country context since most of these universities rely heavily if not almost entirely on student fees for the running of the universities. Online learning technologies are gradually gaining momentum with modest investment into them by these universities. With time therefore, the infrastructure for online learning is likely to be made more robust and with more investment in internet infrastructure and with the right policies for student participation in the LMS platforms, online learning will take centre stage beyond where it is currently.

### References

- Abbasi, S., Ayoob, T., Malik, A. and Memon, S.I. (2020), "Perceptions of students regarding E-learning during Covid-19 at a private medical college", *Pakistan Journal of Medical Sciences*, Vol. 36 Nos COVID19-S4, pp. S57-S61, doi: [10.12669/pjms.36.covid19-s4.2766](https://doi.org/10.12669/pjms.36.covid19-s4.2766).
- Abdulmajeed, K., Joyner, D.A. and McManus, C. (2020), "Challenges of online learning in Nigeria", *Proceedings of the Seventh ACM Conference on Learning@ Scale*, pp. 417-420.

- Aboagye, E., Yawson, J.A. and Appiah, K.N. (2021), "COVID-19 and E-learning: the challenges of students in tertiary institutions", *Social Education Research*, pp. 1-8, doi: [10.37256/ser.212021422](https://doi.org/10.37256/ser.212021422).
- Adarkwah, M.A. (2021), "I'm not against online teaching, but what about us?: ICT in Ghana post Covid-19", *Education and Information Technologies*, Vol. 26 No. 2, pp. 1665-1685, doi: [10.1007/s10639-020-10331-z](https://doi.org/10.1007/s10639-020-10331-z).
- Addo, P.K., Anane, G.K., Marfo, C. and Adusei, A. (2022), "Institutional approaches to supporting students during the COVID-19 pandemic: a comparative study of two Ghanaian public universities' online learning experiences", *COVID-19 and Education in Africa*, pp. 152-166.
- Adekanmbi, G., Kasozi, J.A., Seabelo, C. and Batisani, C. (2021), "Pre-and post-COVID-19: exploring issues of access in higher education in Botswana and Ghana", *Alliance for African Partnership Perspectives*, Vol. 1 No. 1, pp. 125-135, doi: [10.1353/aap.2021.0015](https://doi.org/10.1353/aap.2021.0015).
- Agormedah, E.K., Henaku, E.A., Ayite, D.M.K. and Ansah, E.A. (2020), "Online learning in higher education during COVID-19 pandemic: a case of Ghana", *Journal of Educational Technology and Online Learning*, Vol. 3 No. 3, pp. 183-210.
- Agung, A.S.N., Surtikanti, M.W. and Quinones, C.A. (2020), "Students' perception of online learning during COVID-19 pandemic: a case study on the English students of STKIP Pamane Talino", *SOSHUM: Jurnal Sosial Dan Humaniora*, Vol. 10 No. 2, pp. 225-235, doi: [10.31940/soshum.v10i2.1316](https://doi.org/10.31940/soshum.v10i2.1316).
- Agyekum, B. (2023), "Challenges of learning environments experienced by distance-learning higher education students in Ghana", *International Review of Education*, Vol. 69 No. 1, pp. 51-72, doi: [10.1007/s11159-023-09991-z](https://doi.org/10.1007/s11159-023-09991-z).
- Ahmed, V. and Opoku, A. (2022), "Technology supported learning and pedagogy in times of crisis: the case of COVID-19 pandemic", *Education and information technologies*, Vol. 27 No. 1, pp. 365-405.
- Aikina, T. and Bolsunovskaya, L. (2020), "Moodle-based learning: Motivating and demotivating factors", *International Journal of Emerging Technologies in Learning (IJET)*, Vol. 15 No. 2, pp. 239-248.
- Akhter, H., Abdul Rahman, A.A., Jafirin, N., Mohammad Saif, A.N., Esha, B.H. and Mostafa, R. (2022), "Investigating the barriers that intensify undergraduates' unwillingness to online learning during COVID-19: a study on public universities in a developing country", *Cogent Education*, Vol. 9 No. 1, 2028342, doi: [10.1080/2331186x.2022.2028342](https://doi.org/10.1080/2331186x.2022.2028342).
- Alghamdi, A., Karpinski, A.C., Lepp, A. and Barkley, J. (2020), "Online and face-to-face classroom multitasking and academic performance: moderated mediation with self-efficacy for self-regulated learning and gender", *Computers in Human Behavior*, Vol. 102, pp. 214-222, doi: [10.1016/j.chb.2019.08.018](https://doi.org/10.1016/j.chb.2019.08.018).
- Ali, W. (2020), "Online and remote learning in higher education institutes: a necessity in light of COVID-19 pandemic", *Higher Education Studies*, Vol. 10 No. 3, pp. 16-25, doi: [10.5539/hes.v10n3p16](https://doi.org/10.5539/hes.v10n3p16).
- Alismaiel, O.A., Cifuentes-Faura, J. and Al-Rahmi, W.M. (2022), "Online learning, mobile learning, and social media technologies: an empirical study on constructivism theory during the COVID-19 pandemic", *Sustainability*, Vol. 14 No. 18, 11134, doi: [10.3390/su141811134](https://doi.org/10.3390/su141811134).
- Almahasees, Z., Mohsen, K. and Amin, M.O. (2021), "Faculty's and students' perceptions of online learning during COVID-19", *Frontiers in Education*, Vol. 6, 638470, doi: [10.3389/educ.2021.638470](https://doi.org/10.3389/educ.2021.638470).
- Alqahtani, A.Y. and Rajkhan, A.A. (2020), "E-learning critical success factors during the COVID-19 pandemic: a comprehensive analysis of e-learning managerial perspectives", *Education Sciences*, Vol. 10 No. 9, p. 216, doi: [10.3390/educsci10090216](https://doi.org/10.3390/educsci10090216).
- Anarfi, K., Hill, R.A. and Shiel, C. (2020), "Highlighting the sustainability implications of urbanisation: a comparative analysis of two urban areas in Ghana", *Land*, Vol. 9 No. 9, p. 300, doi: [10.3390/land9090300](https://doi.org/10.3390/land9090300).

- Aulakh, K., Roul, R.K. and Kaushal, M. (2023), "E-learning enhancement through educational data mining with Covid-19 outbreak period in backdrop: a review", *International Journal of Educational Development*, Vol. 101, 102814, doi: [10.1016/j.ijedudev.2023.102814](https://doi.org/10.1016/j.ijedudev.2023.102814).
- Ayu, M. (2020), "Online learning: leading e-learning at higher education", *The Journal of English Literacy Education: The Teaching and Learning of English As a Foreign Language*, Vol. 7 No. 1, pp. 47-54, doi: [10.36706/jele.v7i1.11515](https://doi.org/10.36706/jele.v7i1.11515).
- Barrot, J.S., Llenares, I.I. and Del Rosario, L.S. (2021), "Students' online learning challenges during the pandemic and how they cope with them: the case of the Philippines", *Education and Information Technologies*, Vol. 26 No. 6, pp. 7321-7338, doi: [10.1007/s10639-021-10589-x](https://doi.org/10.1007/s10639-021-10589-x).
- Batdi, V., Doğan, Y. and Talan, T. (2023), "Effectiveness of online learning: a multi-complementary approach research with responses from the COVID-19 pandemic period", *Interactive Learning Environments*, Vol. 31 No. 7, pp. 4113-4146, doi: [10.1080/10494820.2021.1954035](https://doi.org/10.1080/10494820.2021.1954035).
- Blundell, C., Lee, K.T. and Nykvist, S. (2016), "Digital learning in schools: conceptualizing the challenges and influences on teacher practice", *Journal of Information Technology Education*, Vol. 15, pp. 535-560.
- Boddy, C.R. (2016), "Sample size for qualitative research", *Qualitative Market Research: An International Journal*, Vol. 19 No. 4, pp. 426-432, doi: [10.1108/qmr-06-2016-0053](https://doi.org/10.1108/qmr-06-2016-0053).
- Botchwey, G. (2024), "Online higher education in Ghana through covid-19 and post-covid-19: experiences and perceptions of students and academic staff", in *Online Education during COVID-19 and beyond: Opportunities, Challenges and Outlook*, Springer Nature Switzerland, Cham, pp. 243-261.
- Braun, V. and Clarke, V. (2021), "To saturate or not to saturate? Questioning data saturation as a useful concept for thematic analysis and sample-size rationales", *Qualitative Research in Sport, Exercise and Health*, Vol. 13 No. 2, pp. 201-216, doi: [10.1080/2159676x.2019.1704846](https://doi.org/10.1080/2159676x.2019.1704846).
- Bregar, L., Dominko Baloh, J. and Divjak, M. (2022), "Advancement of online learning at DOBA business school on the basis of the OOFAT model", *Annual Conference of European Distance and E-Learning Network*, Cham, Springer International Publishing, pp. 22-38.
- Bringman-Rodenbarger, L. and Hortsch, M. (2020), "How students choose E-learning resources: the importance of ease, familiarity, and convenience", *Faseb Bioadvances*, Vol. 2 No. 5, pp. 286-295, doi: [10.1096/fba.2019-00094](https://doi.org/10.1096/fba.2019-00094).
- Campbell, S., Greenwood, M., Prior, S., Shearer, T., Walkem, K., Young, S., Bywaters, D. and Walker, K. (2020), "Purposive sampling: complex or simple? Research case examples", *Journal of Research in Nursing*, Vol. 25 No. 8, pp. 652-661, doi: [10.1177/1744987120927206](https://doi.org/10.1177/1744987120927206).
- Castleberry, A. and Nolen, A. (2018), "Thematic analysis of qualitative research data: is it as easy as it sounds?", *Currents in Pharmacy Teaching and Learning*, Vol. 10 No. 6, pp. 807-815, doi: [10.1016/j.cptl.2018.03.019](https://doi.org/10.1016/j.cptl.2018.03.019).
- Castro, M.D.B. and Tumibay, G.M. (2021), "A literature review: efficacy of online learning courses for higher education institution using meta-analysis", *Education and Information Technologies*, Vol. 26 No. 2, pp. 1367-1385, doi: [10.1007/s10639-019-10027-z](https://doi.org/10.1007/s10639-019-10027-z).
- Clarke, V. and Braun, V. (2017), "Thematic analysis", *The Journal of Positive Psychology*, Vol. 12 No. 3, pp. 297-298, doi: [10.1080/17439760.2016.1262613](https://doi.org/10.1080/17439760.2016.1262613).
- Crowe, M., Inder, M. and Porter, R. (2015), "Conducting qualitative research in mental health: thematic and content analyses", *Australian and New Zealand Journal of Psychiatry*, Vol. 49 No. 7, pp. 616-623, doi: [10.1177/0004867415582053](https://doi.org/10.1177/0004867415582053).
- Danso, G.K., Takyi, S.A., Amponsah, O., Yeboah, A.S. and Owusu, R.O. (2021), "Exploring the effects of rapid urbanization on wetlands: insights from the Greater Accra Metropolitan Area, Ghana", *SN Social Sciences*, Vol. 1 No. 8, pp. 1-21, doi: [10.1007/s43545-021-00218-z](https://doi.org/10.1007/s43545-021-00218-z).
- DeJonckheere, M. and Vaughn, L.M. (2019), "Semistructured interviewing in primary care research: a balance of relationship and rigour", *Family Medicine and Community Health*, Vol. 7 No. 2, p. e000057, doi: [10.1136/fmch-2018-000057](https://doi.org/10.1136/fmch-2018-000057).

- Dewi, I.G.A.A.O. (2021), "Understanding data collection methods in qualitative research: the perspective of interpretive accounting research", *Journal of Tourism Economics and Policy*, Vol. 1 No. 1, pp. 23-34, doi: [10.38142/jtep.v1i1.105](https://doi.org/10.38142/jtep.v1i1.105).
- Dhawan, S. (2020), "Online learning: a panacea in the time of COVID-19 crisis", *Journal of Educational Technology Systems*, Vol. 49 No. 1, pp. 5-22, doi: [10.1177/0047239520934018](https://doi.org/10.1177/0047239520934018).
- Dhingra, S., Pasricha, N., Sthapak, E. and Bhatnagar, R. (2021), "Assessing the role of internal motivation and extrinsic factors on online undergraduate medical teaching in a resource-poor setting during Covid-19 pandemic in north India: an observational study", *Advances in Medical Education and Practice*, Vol. Volume 12, pp. 817-823, doi: [10.2147/amep.s312812](https://doi.org/10.2147/amep.s312812).
- Dumbiri, D.N. and Nwadiani, C.O. (2020), "Challenges facing application of E-learning facilities in vocational and technical education programs in south Nigeria universities", *Asian Journal of Vocational Education and Humanities*, Vol. 1 No. 2, pp. 1-8, doi: [10.53797/ajvah.v1i2.1.2020](https://doi.org/10.53797/ajvah.v1i2.1.2020).
- Dumford, A.D. and Miller, A.L. (2018), "Online learning in higher education: exploring advantages and disadvantages for engagement", *Journal of Computing in Higher Education*, Vol. 30 No. 3, pp. 452-465, doi: [10.1007/s12528-018-9179-z](https://doi.org/10.1007/s12528-018-9179-z).
- Eltahir, M.E. (2019), "E-learning in developing countries: is it a panacea? A case study of Sudan", *IEEE Access*, Vol. 7, pp. 97784-97792, doi: [10.1109/access.2019.2930411](https://doi.org/10.1109/access.2019.2930411).
- Fahrudin, F., Jana, P., Setiawan, J., Rochmat, S., Aman, A. and Yuliantri, R.D.A. (2022), "Student perception of online learning media platform during the COVID-19 pandemic", *Journal of Education Technology*, Vol. 6 No. 1, pp. 126-132, doi: [10.23887/jet.v6i1.42738](https://doi.org/10.23887/jet.v6i1.42738).
- Farrell, K. (2017), "The rapid urban growth triad: a new conceptual framework for examining the urban transition in developing countries", *Sustainability*, Vol. 9 No. 8, p. 1407, doi: [10.3390/su9081407](https://doi.org/10.3390/su9081407).
- Gergen, K.J. (2012), "Social construction and the educational process", *Constructivism in Education*, Routledge, pp. 17-39.
- Ghana Tertiary Education Commission (2024), available at: <https://gtec.edu.gh/institution-category?name=Public%20University>
- Gherheș, V., Stoian, C.E., Fărcașiu, M.A. and Stanici, M. (2021), "E-learning vs. face-to-face learning: analyzing students' preferences and behaviours", *Sustainability*, Vol. 13 No. 8, p. 4381, doi: [10.3390/su13084381](https://doi.org/10.3390/su13084381).
- Green, J., Willis, K., Hughes, E., Small, R., Welch, N., Gibbs, L. and Daly, J. (2007), "Generating best evidence from qualitative research: the role of data analysis", *Australian and New Zealand Journal of Public Health*, Vol. 31 No. 6, pp. 545-550, doi: [10.1111/j.1753-6405.2007.00141.x](https://doi.org/10.1111/j.1753-6405.2007.00141.x).
- Guzman, T., Pirog, M.A. and Jung, H. (2021), "Cost of higher education: for-profit universities and online learning", *The Social Science Journal*, Vol. 58 No. 4, pp. 407-421, doi: [10.1016/j.soscij.2019.03.010](https://doi.org/10.1016/j.soscij.2019.03.010).
- Hatsu, S. and Asamoah, E.S. (2020), "Online teaching, learning and assessment: a primer for tertiary education in Ghana".
- Hove, B. and Dube, B. (2021), "COVID-19 and the entrenchment of a virtual Elite private school: rethinking education policies in Zimbabwe", *Journal of Culture and Values in Education*, Vol. 4 No. 2, pp. 84-94.
- Jamil, S. and Muschert, G. (2023), "The COVID-19 pandemic and E-learning: the digital divide and educational crises in Pakistan's universities", *American Behavioral Scientist*, 00027642231156779, doi: [10.1177/00027642231156779](https://doi.org/10.1177/00027642231156779).
- Jena, B.M., Gupta, S.L. and Mishra, N. (2021), "Effectiveness of online learning and face-to-face teaching pedagogy", *Transforming Higher Education Through Digitalization*, pp. 21-43, doi: [10.1201/9781003132097-2](https://doi.org/10.1201/9781003132097-2).

- Kallio, H., Pietilä, A.M., Johnson, M. and Kangasniemi, M. (2016), "Systematic methodological review: developing a framework for a qualitative semi-structured interview guide", *Journal of Advanced Nursing*, Vol. 72 No. 12, pp. 2954-2965, doi: [10.1111/jan.13031](https://doi.org/10.1111/jan.13031).
- Kamysbayeva, A., Koryakov, A., Garnova, N., Glushkov, S. and Klimenkova, S. (2021), "E-learning challenge studying the COVID-19 pandemic", *International Journal of Educational Management*, Vol. 35 No. 7, pp. 1492-1503, doi: [10.1108/ijem-06-2021-0257](https://doi.org/10.1108/ijem-06-2021-0257).
- Khan, S., Zayed, N.M., Darwish, S., Nitsenko, V., Islam, K.A., Hassan, M.A. and Dubrova, O. (2022), "Pre and present COVID-19 situation: a framework of educational transformation in south asia region", *Emerging Science Journal*, Vol. 7, pp. 81-94, doi: [10.28991/esj-2023-sper-06](https://doi.org/10.28991/esj-2023-sper-06).
- Kim, H., Sefcik, J.S. and Bradway, C. (2017), "Characteristics of qualitative descriptive studies: a systematic review", *Research in Nursing and Health*, Vol. 40 No. 1, pp. 23-42, doi: [10.1002/nur.21768](https://doi.org/10.1002/nur.21768).
- Kumi-Yeboah, A. and Amponsah, S. (2023), "An exploratory study of instructors' perceptions on inclusion of culturally responsive pedagogy in online education", *British Journal of Educational Technology*, Vol. 54 No. 4, pp. 878-897, doi: [10.1111/bjet.13299](https://doi.org/10.1111/bjet.13299).
- Kundu, A. and Bej, T. (2021), "We have efficacy but lack infrastructure: teachers' views on online teaching learning during COVID-19", *Quality Assurance in Education*, Vol. 29 No. 4, pp. 344-372, doi: [10.1108/qae-05-2020-0058](https://doi.org/10.1108/qae-05-2020-0058).
- Lemay, D.J., Bazelaï, P. and Doleck, T. (2021), "Transition to online learning during the COVID-19 pandemic", *Computers in Human Behavior Reports*, Vol. 4, 100130, doi: [10.1016/j.chbr.2021.100130](https://doi.org/10.1016/j.chbr.2021.100130).
- Lepp, A., Barkley, J.E., Karpinski, A.C. and Singh, S. (2019), "College students' multitasking behavior in online versus face-to-face courses", *Sage Open*, Vol. 9 No. 1, 2158244018824505.
- Lin, M.H., Chen, H.C. and Liu, K.S. (2017), "A study of the effects of digital learning on learning motivation and learning outcome", *Eurasia Journal of Mathematics, Science and Technology Education*, Vol. 13 No. 7, pp. 3553-3564, doi: [10.12973/eurasia.2017.00744a](https://doi.org/10.12973/eurasia.2017.00744a).
- Lynch, M. (2017), "The absence of internet at home is a problem for some students", *The Advocate*, Vol. 24 No. 1, doi: [10.4148/2637-4552.1122](https://doi.org/10.4148/2637-4552.1122).
- Martin, F., Stamper, B. and Flowers, C. (2020), "Examining student perception of readiness for online learning: importance and confidence", *Online Learning*, Vol. 24 No. 2, pp. 38-58, doi: [10.24059/olj.v24i2.2053](https://doi.org/10.24059/olj.v24i2.2053).
- Mathrani, A., Sarvesh, T. and Umer, R. (2022), "Digital divide framework: online learning in developing countries during the COVID-19 lockdown", *Globalisation, Societies and Education*, Vol. 20 No. 5, pp. 625-640, doi: [10.1080/14767724.2021.1981253](https://doi.org/10.1080/14767724.2021.1981253).
- Maxwell, C., McCreesh, K., Salsberg, J. and Robinson, K. (2022), "Down to the person, the individual patient themselves: a qualitative study of treatment decision-making for shoulder pain", *Health Expectations*, Vol. 25 No. 3, pp. 1108-1117, doi: [10.1111/hex.13464](https://doi.org/10.1111/hex.13464).
- Means, B. and Neisler, J. (2021), "Teaching and learning in the time of COVID: the student perspective", *Online Learning*, Vol. 25 No. 1, doi: [10.24059/olj.v25i1.2496](https://doi.org/10.24059/olj.v25i1.2496).
- Mhlanga, D., Denhere, V. and Moloï, T. (2022), "COVID-19 and the key digital transformation lessons for higher education institutions in South Africa", *Education Sciences*, Vol. 12 No. 7, p. 464.
- Mukhtar, K., Javed, K., Arooj, M. and Sethi, A. (2020), "Advantages, Limitations and Recommendations for online learning during COVID-19 pandemic era", *Pakistan Journal of Medical Sciences*, Vol. 36 Nos COVID-19-S4, pp. S27-S31, doi: [10.12669/pjms.36.covid19-s4.2785](https://doi.org/10.12669/pjms.36.covid19-s4.2785).
- Müller, C. and Mildnerberger, T. (2021), "Facilitating flexible learning by replacing classroom time with an online learning environment: a systematic review of blended learning in higher education", *Educational Research Review*, Vol. 34, 100394, doi: [10.1016/j.edurev.2021.100394](https://doi.org/10.1016/j.edurev.2021.100394).
- Munuku, A., Ojiambo, J. and Asena, J.M. (2022), "Social constructivism and participative learning beyond the traditional classroom during the COVID-19 pandemic", *Teaching and Learning with*

- Muthanna, A. (2019), "Critical qualitative inquiry and methodological awareness: the effectiveness of face-to-face interviews in changing/enhancing participants' beliefs and practices", *International Journal of Research Studies in Education*, Vol. 8 No. 2, pp. 59-66, doi: [10.5861/ijrse.2019.3027](https://doi.org/10.5861/ijrse.2019.3027).
- Nabila, A., Cahyono, B.Y. and El Khoiri, N. (2021), "Demotivation level and demotivators among EFL students in-home online English learning during the pandemic", *JEELS (Journal of English Education and Linguistics Studies)*, Vol. 8 No. 2, pp. 393-421, doi: [10.30762/jeels.v8i2.3567](https://doi.org/10.30762/jeels.v8i2.3567).
- Namestovski, Ž. and Kovari, A. (2022), "Framework for preparation of engaging online educational materials—a cognitive approach", *Applied Sciences*, Vol. 12 No. 3, p. 1745, doi: [10.3390/app12031745](https://doi.org/10.3390/app12031745).
- Ndibalema, P. (2022), "Constraints of transition to online distance learning in Higher Education Institutions during COVID-19 in developing countries: a systematic review", *E-Learning and Digital Media*, Vol. 19 No. 6, pp. 595-618, doi: [10.1177/20427530221107510](https://doi.org/10.1177/20427530221107510).
- Nuseir, M.T., El-Refae, G.A. and Aljumah, A. (2021), "The e-learning of students and university's brand image (Post COVID-19): how successfully Al-Ain University have embraced the paradigm shift in digital learning", in *The Effect of Coronavirus Disease (COVID-19) on Business Intelligence*, Springer International Publishing, Cham, pp. 171-187.
- Nyambuya, V.P., Nyamaruze, P., Dube, M. and Shumba, K. (2021), "Rethinking education in the age of 'social distancing': a qualitative inquiry on University of KwaZulu-Natal students' responses to online learning in the context of COVID-19", *Journal of African Education*, Vol. 2 No. 1, pp. 107-126, doi: [10.31920/2633-2930/2021/v2n1a5](https://doi.org/10.31920/2633-2930/2021/v2n1a5).
- Okediran, J.O., Ilesanmi, O.S., Fetuga, A.A., Onoh, I., Afolabi, A.A., Ogunbode, O., Olajide, L., Kwaghe, A.V. and Balogun, M.S. (2020), "The experiences of healthcare workers during the COVID-19 crisis in Lagos, Nigeria: a qualitative study", *Germs*, Vol. 10 No. 4, pp. 356-366, doi: [10.18683/germs.2020.1228](https://doi.org/10.18683/germs.2020.1228).
- Oleksienko, L., Sheptytska, L. and Fonariuk, O. (2020), "Online education: challenges and prospects", *Pedagogy and Education Management Review*, No. 2, pp. 60-69, doi: [10.36690/2733-2039-2020-2-60](https://doi.org/10.36690/2733-2039-2020-2-60).
- Owen, S.M., White, G., Palekahelu, D.T., Sumakul, D.T. and Sediyo, E. (2020), "Integrating online learning in schools: issues and ways forward for developing countries", *Journal of Information Technology Education: Research*, Vol. 19 pp. 571-614, doi: [10.28945/4625](https://doi.org/10.28945/4625).
- Owusu, G. and Oteng-Ababio, M. (2015), "Moving unruly contemporary urbanism toward sustainable urban development in Ghana by 2030", *American Behavioral Scientist*, Vol. 59 No. 3, pp. 311-327, doi: [10.1177/0002764214550302](https://doi.org/10.1177/0002764214550302).
- Pagliarin, S., La Mendola, S. and Vis, B. (2023), "The 'qualitative' in qualitative comparative analysis (QCA): research moves, case-intimacy and face-to-face interviews", *Quality and Quantity*, Vol. 57 No. 1, pp. 489-507, doi: [10.1007/s11135-022-01358-0](https://doi.org/10.1007/s11135-022-01358-0).
- Palvia, S., Aeron, P., Gupta, P., Mahapatra, D., Parida, R., Rosner, R. and Sindhi, S. (2018), "Online education: worldwide status, challenges, trends, and implications", *Journal of Global Information Technology Management*, Vol. 21 No. 4, pp. 233-241.
- Panigrahi, R., Srivastava, P.R. and Sharma, D. (2018), "Online learning: adoption, continuance, and learning outcome—a review of literature", *International Journal of Information Management*, Vol. 43, pp. 1-14, doi: [10.1016/j.ijinfomgt.2018.05.005](https://doi.org/10.1016/j.ijinfomgt.2018.05.005).
- Pardjono, P. (2016), "Active learning: the Dewey, Piaget, Vygotsky, and constructivist theory perspectives", *Jurnal Ilmu Pendidikan Universitas Negeri Malang*, Vol. 9 No. 3, 105376.
- Patra, S., Dutta, A.K. and Upadhyay, P. (2024), "MOOCs: determinants of enrolment and completion rate among learners of higher education institutions in India", *Asian Journal of Education and Social Studies*, Vol. 50 No. 4, pp. 200-211, doi: [10.9734/ajess/2024/v50i41323](https://doi.org/10.9734/ajess/2024/v50i41323).

- Paudel, P. (2021), "Online education: benefits, challenges and strategies during and after COVID-19 in higher education", *International Journal on Studies in Education (IJonSE)*, Vol. 3 No. 2, pp. 70-85, doi: [10.46328/ijonse.32](https://doi.org/10.46328/ijonse.32).
- Peterson, J.S. (2019), "Presenting a qualitative study: a reviewer's perspective", *Gifted Child Quarterly*, Vol. 63 No. 3, pp. 147-158, doi: [10.1177/0016986219844789](https://doi.org/10.1177/0016986219844789).
- Piaget, J. (1970), *Piaget's Theory*, Wiley, New York, Vol. 1, pp. 703-732.
- Picciano, A.G. (2021), "Theories and frameworks for online education: seeking an integrated model", *A Guide to Administering Distance Learning*, pp. 79-103, doi: [10.1163/9789004471382\\_005](https://doi.org/10.1163/9789004471382_005).
- Poole, D.M. (2000), "Student participation in a discussion-oriented online course: a case study", *Journal of Research on Computing in Education*, Vol. 33 No. 2, pp. 162-177.
- Population and Housing Census (2024), available at: <https://census2021.statsghana.gov.gh/gssmain/fileUpload/reportthelist/Volume%203%20Highlights.pdf>
- Qiao, P., Zhu, X., Guo, Y., Sun, Y. and Qin, C. (2021), "The development and adoption of online learning in pre-and post-COVID-19: combination of technological system evolution theory and unified theory of acceptance and use of technology", *Journal of Risk and Financial Management*, Vol. 14 No. 4, p. 162, doi: [10.3390/jrfm14040162](https://doi.org/10.3390/jrfm14040162).
- Rafique, H., Ul Islam, Z. and Shamim, A. (2023), "Acceptance of e-learning technology by government school teachers: application of extended technology acceptance model", *Interactive Learning Environments*, pp. 1-19, doi: [10.1080/10494820.2022.2164783](https://doi.org/10.1080/10494820.2022.2164783).
- Rasheed, R.A., Kamsin, A. and Abdullah, N.A. (2020), "Challenges in the online component of blended learning: a systematic review", *Computers and Education*, Vol. 144, 103701, doi: [10.1016/j.compedu.2019.103701](https://doi.org/10.1016/j.compedu.2019.103701).
- Renu, N. (2021), "Technological advancement in the era of COVID-19", *SAGE Open Medicine*, Vol. 9, doi: [10.1177/20503121211000912](https://doi.org/10.1177/20503121211000912).
- Rizvi, Y.S. and Nabi, A. (2021), "Transformation of learning from real to virtual: an exploratory-descriptive analysis of issues and challenges", *Journal of Research in Innovative Teaching and Learning*, Vol. 14 No. 1, pp. 5-17, doi: [10.1108/jrit-10-2020-0052](https://doi.org/10.1108/jrit-10-2020-0052).
- Saleh, M.N.I., Sari, R. and Alim, P. (2021), "University students' perception on the implementation of online learning during the Covid-19", *Nazhruna: Jurnal Pendidikan Islam*, Vol. 4 No. 1, pp. 1-17, doi: [10.31538/nzh.v4i1.1022](https://doi.org/10.31538/nzh.v4i1.1022).
- Sarker, M.F.H., Mahmud, R.A., Islam, M.S. and Islam, M.K. (2019), "Use of e-learning at higher educational institutions in Bangladesh: opportunities and challenges", *Journal of Applied Research in Higher Education*, Vol. 11 No. 2, pp. 210-223, doi: [10.1108/jarhe-06-2018-0099](https://doi.org/10.1108/jarhe-06-2018-0099).
- Sarpong, S.A., Dwomoh, G., Boakye, E.K. and Ofosua-Adjei, I. (2021), "Online teaching and learning under COVID-19 pandemic; perception of university students in Ghana", *European Journal of Interactive Multimedia and Education*, Vol. 3 No. 1, e02203, doi: [10.30935/ejimed/11438](https://doi.org/10.30935/ejimed/11438).
- Schans, D., Mazzucato, V., Schoumaker, B. and Flahaux, M.L. (2018), "Changing patterns of Ghanaian migration", *Migration Between Africa and Europe*, pp. 265-289, doi: [10.1007/978-3-319-69569-3\\_10](https://doi.org/10.1007/978-3-319-69569-3_10).
- Sharma, A. and Alvi, I. (2021), "Evaluating pre and post COVID 19 learning: an empirical study of learners' perception in higher education", *Education and Information Technologies*, Vol. 26 No. 6, pp. 7015-7032, doi: [10.1007/s10639-021-10521-3](https://doi.org/10.1007/s10639-021-10521-3).
- Siedlecki, S.L. (2020), "Understanding descriptive research designs and methods", *Clinical Nurse Specialist*, Vol. 34 No. 1, pp. 8-12, doi: [10.1097/nur.0000000000000493](https://doi.org/10.1097/nur.0000000000000493).
- Simamora, R.M., De Fretes, D., Purba, E.D. and Pasaribu, D. (2020), "Practices, challenges, and prospects of online learning during Covid-19 pandemic in higher education: lecturer perspectives", *Studies in Learning and Teaching*, Vol. 1 No. 3, pp. 185-208, doi: [10.46627/silet.v1i3.45](https://doi.org/10.46627/silet.v1i3.45).

- Singh, P., Sinha, R., Koay, W.L., Teoh, K.B., Nayak, P., Lim, C.H., Dubey, A.K., Das, A., Faturrahman, I. and Aryani, D.N. (2021), "A comparative study on effectiveness of online and offline learning in higher education", *International Journal of Tourism and Hospitality in Asia Pasific (IJTHAP)*, Vol. 4 No. 3, pp. 102-114, doi: [10.32535/ijthap.v4i3.1212](https://doi.org/10.32535/ijthap.v4i3.1212).
- Sinha, E. and Bagarukayo, K. (2019), "Online Education in Emerging Knowledge Economies: exploring factors of motivation, de-motivation and potential facilitators; and studying the effects of demographic variables", *International Journal of Education and Development Using Information and Communication Technology*, Vol. 15 No. 2, pp. 5-30.
- Sivan, E. (1986), "Motivation in social constructivist theory", *Educational Psychologist*, Vol. 21 No. 3, pp. 209-233, doi: [10.1207/s15326985ep2103\\_4](https://doi.org/10.1207/s15326985ep2103_4).
- Sjølie, E., Espenes, T.C. and Buø, R. (2022), "Social interaction and agency in self-organizing student teams during their transition from face-to-face to online learning", *Computers and Education*, Vol. 189, 104580, doi: [10.1016/j.compedu.2022.104580](https://doi.org/10.1016/j.compedu.2022.104580).
- Snowden, A. and Atkinson, J. (2012), "Concurrent analysis: a pragmatic justification", *Nursing Philosophy*, Vol. 13 No. 2, pp. 126-141.
- Tabiri, M.O., Jones-Mensah, I., Fenyi, D.A. and Asunka, S. (2022), "Challenges of online learning of English/French language in higher education in Ghana", *Journal of Language and Linguistic Studies*, Vol. 18 No. 1, pp. 207-222.
- Teo, T.C. and Divakar, A. (2021), "Understanding the concepts of digital learning approaches: an empirical analysis of schools in developing countries", *Journal of Applied Learning and Teaching*, Vol. 4 No. 1, pp. 120-128.
- Terry, G., Hayfield, N., Clarke, V. and Braun, V. (2017), "Thematic analysis", *The SAGE Handbook of Qualitative Research in Psychology*, Vol. 2 Nos 17-37, p. 25.
- Thaba-Nkadimene, K.L. (2020), "COVID-19 and e-learning in higher education", *Journal of African Education*, Vol. 1 No. 2, pp. 5-12.
- Trainor, L.R. and Bundon, A. (2021), "Developing the craft: reflexive accounts of doing reflexive thematic analysis", *Qualitative Research in Sport, Exercise and Health*, Vol. 13 No. 5, pp. 705-726, doi: [10.1080/2159676x.2020.1840423](https://doi.org/10.1080/2159676x.2020.1840423).
- Tumwesige, J. (2020), *COVID-19 Educational Disruption and Response: Rethinking E-Learning in Uganda*, University of Cambridge.
- Wang, C., Ba, S., Hu, X. and Shao, Y. (2023), "Exploring factors limiting participation in an online training program for college teachers from developing countries", *2023 IEEE International Conference on Advanced Learning Technologies (ICALT)*, IEEE, pp. 166-168.
- Turner, D.P. (2020), "Sampling methods in research design. Headache", *The Journal of Head and Face Pain*, Vol. 60 No. 1, pp. 8-12, doi: [10.1111/head.13707](https://doi.org/10.1111/head.13707).
- Wedyantoro, P.L., Lailiyah, M. and Yustisia, K.K. (2020), "Synchronous discussion in online learning: investigating students' critical thinking", *EnJourMe (English Journal of Merdeka): Culture, Language, and Teaching of English*, Vol. 5 No. 2, pp. 196-203, doi: [10.26905/enjourme.v5i2.5205](https://doi.org/10.26905/enjourme.v5i2.5205).
- Yıldırım, S., Bostancı, S.H., Yıldırım, D.Ç. and Erdoğan, F. (2021), "Rethinking mobility of international university students during COVID-19 pandemic", *Higher Education Evaluation and Development*, Vol. 15 No. 2, pp. 98-113, doi: [10.1108/heed-01-2021-0014](https://doi.org/10.1108/heed-01-2021-0014).
- Żadkowska, M., Dowgiałło, B., Gajewska, M., Herzberg-Kurasz, M. and Kostecka, M. (2022), "The sociological confessional: a reflexive process in the transformation from face-to-face to online interview", *International Journal of Qualitative Methods*, Vol. 21, 16094069221084785, doi: [10.1177/16094069221084785](https://doi.org/10.1177/16094069221084785).
- Zaitun, Z., Hadi, M.S. and Harjudanti, P. (2021), "The impact of online learning on the learning motivation of junior high school students", *Bisma The Journal of Counseling*, Vol. 5 No. 1, pp. 56-63, doi: [10.23887/bisma.v5i1.35980](https://doi.org/10.23887/bisma.v5i1.35980).

- Zarei, S. and Mohammadi, S. (2022), "Challenges of higher education related to e-learning in developing countries during COVID-19 spread: a review of the perspectives of students, instructors, policymakers, and ICT experts", *Environmental Science and Pollution Research*, Vol. 29 No. 57, pp. 85562-85568, doi: [10.1007/s11356-021-14647-2](https://doi.org/10.1007/s11356-021-14647-2).
- Zhang, L., Carter Jr, R.A., Qian, X., Yang, S., Rujimora, J. and Wen, S. (2022), "Academia's responses to crisis: a bibliometric analysis of literature on online learning in higher education during COVID-19", *British Journal of Educational Technology*, Vol. 53 No. 3, pp. 620-646, doi: [10.1111/bjet.13191](https://doi.org/10.1111/bjet.13191).
- Zylfiu, D.B.G. and Rasimi, D.A. (2020), "Challenges and advantages of online learning: the case of Kosovo", *International Journal of Management*, Vol. 11 No. 10, doi: [10.34218/ijm.11.12.2020.181](https://doi.org/10.34218/ijm.11.12.2020.181).

### Further reading

- Akinyemi, I.A. and Gbenu, J.B. (2020), "Student enrolment, global utilisation rate and academic performance in public tertiary institutions in Lagos State, Nigeria", *UNIZIK Journal of Educational Management and Policy*, Vol. 4 No. 1, pp. 80-90.
- Ghana Statistical Service (2024), available at: <https://www.statsghana.gov.gh/regionalpopulation.php?population=MTMONTk2MjQzOS4yMDE1&&Greater%20Accra&regid=3>
- Tadesse, S. and Muluye, W. (2020), "The impact of COVID-19 pandemic on education system in developing countries: a review", *Open Journal of Social Sciences*, Vol. 8 No. 10, pp. 159-170, doi: [10.4236/jss.2020.810011](https://doi.org/10.4236/jss.2020.810011).

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