



RESEARCH PAPER

Learning Outside the Classroom: Reflection on Online Pedagogy in Pakistan

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ABSTRACT

The sudden explosion of Covid-19 created a chaotic situation. The lockdown was considered the immediate action to avoid the pandemic; and provided break for finding its the solution. This lockdown badly affected all sectors of society and nobody knew how long this situation would continue. In education sector, online learning was thought as the panacea. E-learning was not new concept but got more attention during the pandemic. The developed countries were using e-learning as per the demands of globalization. In Pakistan, e-learning got familiarity during this pandemic although some of its modes were under practice by some institutions. Education in Pakistan is traditionally oriented face-to-face learning. This article introduces some of the developments of e-teaching environment, and also the reasons of its use. The related quarters in education did not focus on the emerging trends of online teaching before the start of this pandemic. Hence, the system was lacking infrastructure and resources required to implement online pedagogy. The inclination of teachers, students and policy makers towards the traditional mode of education slowed down the implementation of online system. The unfamiliarity with the online pedagogy and unavailability of experts came out as the restraining factors.

Introduction

E-teaching and learning or online learning is not a new strategy in this modern world. Although, this mode has gained fame in Pakistan during the pandemic of Covid-19. The rapidly occurring changes in society, expectations of the

learners, and state of the art technological developments were the factors that already invited and motivated the academic researchers, educationists and teachers to develop new ways of pedagogy and teaching before the pandemic. A lot of work has been done to develop and promote this mode of teaching and learning in developed countries. However, the upsurge in trend of online teaching has been accelerated due to the pandemic.

This online mode is now providing facilities in every area of educational pursuit ranging from online course development to course delivery and assessment by using latest technologies of information and communication with the combination of exhaustive softwares that not only create virtual interactive classrooms but also offer extensive strategies to involve students in educational activities, keep the record of all activities, provide the forum for discussion and endorse the record of their performances which are used in assessment and grading.

The Covid-19 created a situation in which normal opening of educational institutions could not be possible and forced to discontinue in-person teaching. It is assessed that this uncertainty would continue and nobody is sure when we would be able to get back to normal physical mode of teaching.

Actually, the Covid-19 pandemic has forced us to think and act on this line of adopting online pedagogy otherwise there are so many other reasons that the mode of online pedagogy would have been introduced on an earlier time at large scale. The rapidly growing world as a result of science and technology has changed the context of every aspect of life where the physical connections have been reduced and, sometime, not necessary, e.g., digitalized libraries accessible online from any place, online data bases, e-books-no need of purchasing paperback books, online newspapers, magazines, research journal, video communication in real time, virtual monitoring of on a project at the remote places, and so many other areas that are one click away to approach. In the context of education, the developments in information and communication technologies have been adapted in a way to satisfy not only the needs of students attending the educational institutions physically but also the diversified kinds of persons who cannot be benefitted the facilities directly by attending the institutions in-person due to any reasons like time constraints, location of the institution not easily approachable, difficulty in movement due to disability, financial or age limitation and the so on.

The modern developments, emerging trends and their utilization in the field of education in developed countries enabled them to cope with the drastic conditions created by sudden outbreak of Covid-19 to greater extent. However, in Pakistani context, we just followed what had been advised internationally to avoid the damaging consequences of Covid-19. We had to compromise the education of children because we had no options available to offer alternate system of educating the children. The uncertain and deadly conditions created by Covid-19 are still prevailing even about more than one and half year has been passed. A lot of efforts

in controlling the Covid-19 are made successfully but medical experts and researchers are not in a position to say confidently what would happen in future.

The central theme and its various aspects in this article discuss why we could not do what the many of the countries did to curtail the adverse effects of Covid-19 pandemic situation on education of the children.

Literature Review

Online learning is the latest mode of distance education and gaining rapid popularity (Nagel, 2009) due to its usefulness in varied context that are difficult to address in traditional mode of education. This mode of learning has been increasingly introduced in education since the mid-1990s (Harmon and Jones, 1999). Online education is mode that takes place via the Internet. Online learning refers to the use of the internet that offers the possibility to learn without the barrier of place and time, and adopting the ways to improve teacher-student interaction virtually (Curtain, 2002; Cojocariu et. al., 2014).

The online communication or virtual conferencing may be either synchronous or asynchronous (Grant & Cheon, 2007). The synchronous communication takes place if the messages are exchanged or interaction between the receiver and the transmitter, both are present at the same time, in real time. Examples are phone call, video conference, chat group, etc. Asynchronous communication is flexible in both time and location (Greenberg, 2004; Wilkinson & Hemby, 2000).

The online conferencing may be based on number of access points, i.e., point-to-point and multi-point. Only two computers or other devices are connected on either end in point-to-point conferencing while number of connected computers with one another may be two or more in multiple conferencing. There are some other modes of online conferencing like room systems, roll-about carts, and desktop videoconferencing used in distance education (Carvalho, 2000). The room system is a stationary design equipped with devices for video conferencing while roll-about design can easily be rolled on a cart that can be moved from one place to another. Desktop video conferencing is a form of teleconferencing through the desktop computer that contains all the required hardware and software components necessary for online synchronous communication.

In virtual classroom, synchronous communication is established via the technical facilities provided by the synchronous software (Palloff & Pratt, 2013). Virtual classroom softwares are used to conduct the teaching-learning process remotely while trying to maintain the features of traditional classroom environment like interaction between teacher and students, view presentations or any other lesson materials, and conduct assessment. There are a number of virtual classroom softwares like Zoom, google meet, Microsoft teams, Webex Meetings, Schoology, Blackboard, Big Blue Button, etc ("Best Virtual Classroom Software", n.d.). Online course providers use virtual classroom softwares either to offer virtual classroom environment or to deliver their lessons.

Online course providers offer courses termed as massive open online courses or MOOCs through virtual classroom setting or use this platform to deliver their lessons. The enrolled Students are required, in an online course, to complete a series of lessons and other activities; and are assessed to reflect their mastery (Poritz& Rees, 2016). Some of the online course providers include LinkedIn Learning, HubSpot Academy, Pluralsight Skills, Udemy, a Cloud Guru, Infosec Skills, Khan Academy, etc("Best Online Course Providers," n.d.)

Virtual classroom facility is generally integrated with the Learning Management System (LMS). Learning Management Systems are the complete solution that provide multifarious facilities to the teachers in managing educational activities related to the coursework online (Foreman, 2017). The resources usually available in any LMS are the platforms to share the course material, conduct discussion, submit assignments, perform assessment and other facilities for integrating various types of contents like lectures, multimedia files and reading materials (Piña, 2010). It is also a strong media of establishing communication with students, parents, administrators through different means such as direct messages, mobile notification, chat and discussion forum. LMSs is also enable to work in concert with other education software, for example, student information systems (SIS).

Student Information System individually or integrated with LMS is an online platform to store, retrieve and track all the information related to students' educational progress such as grades, attendance record, and other curricular activities. SIS products are used by teachers, administrators, parents, students and guide and counselors. Some SIS software are Power School SIS, Skyward, Student Management Suite, Gradelink, Infinite Campus, QuickSchools and many more ("Best Student Information Systems (SIS)," n.d.).

Assessment and evaluation are the vital aspects of teaching-learning process and it provides the benchmark and proof of the level of achievement or success. Online pedagogy includes this aspect and experts have developed assessment softwares that enable us to develop, and administer assessment tools in a digital manner. With the help of these online assessment platforms, the teachers can write questions, save these for future use and grade the test automatically just after a student get these completed. These platforms not only can undertake traditional tests but also offer other ways of assessing the students' mastery by collecting live responses from students or through e-portfolio to be completed by the students. Assessment software products can either be used as independent tools or integrated with learning management systems. Some online assessment softwares are Kahoot!, Canvas, Blackboard, Schoology, SMART Learning Suite, Tovuti LMS, etc.

The review of literature provides just evidences that the tremendous developments had been done in the area of online pedagogy before the breakout of the pandemic of Covid-19. However, the developments have been expedited during the spread of Covid-19.

Material and Methods

The nature of study of this article is descriptive analysis used to explore and explain various aspects of the problem under investigation. It includes discussion with the colleagues and the teachers involved in online teaching during pandemic, observation, personal experience and the discussion with IT experts involved in organizing online platform for collecting the information based on which the analysis of various factors of online teaching in the context of Pakistan is made. The data is presented as an analytical synopsis developed out of discussion, personal experience and observation.

Results and Discussion

The overall education-formal system, network of academies, religious education institutions, examination bodies- is suffered badly in Pakistan during spread of Covid-19. Many measures are taken at different levels to minimize the negative impact of Covid-19 on education but the questions exist whether we reacted and acted in the right ways with respect to the rationale and measures against the pandemic. The situation of education in Pakistan needs to be analyzed before and during the pandemic and what would be the plan of action for future as the Covid-19 has, besides its damaging impact, forced us to think, analyze, plan, build capacities and capabilities of the education system in a more objective and pragmatic way; and also has invited the stakeholders to restructure the thought process and redesign the educational system according to the emerging and future trends in education.

Awareness that it is necessity and not an option anymore

In Pakistan, the education systems are functioning mainly under the tradition mode. Apart from the situation created by Covid-19, the world around us has introduced innovative trends in education to cope with the demands of the changes as a result of revolutionary developments in technologies that has turned the world into a completely different shape. This scenario requires us to explore the new ways in education and prepare ourselves to incorporate these innovations into the thought process and implementation level as well if we want to withstand the rapidly progressing world. At higher level of policy making and implementation, it is indicated that:

“This is needed not only for the short run response to the virus but also the long run response to the disruption that will follow. The objective is not only to cope with the current exigency, however long it lasts, but to harness the energies and passions of our youth to address and overcome the challenges we will face after the crisis has subsided” (Chairman HEC, 2020, para 16).

It is the time in the present history where there left no option but to opt new trends and technologies in education according to our needs and requirements otherwise, we would face disconnection from rest of the world. Volery and Lord

(2000) has pointed out that there is no longer an option other than adopting e-learning technology for universities and becoming the partner of the globalization process.

We see the change in life style at every walk of life. The students are no exceptions. Being a full-time student does not remain an absolute option in most of the cases in present time. The students are in a situation where they have to continue studies along with their job and family affairs and, therefore, need a mode of education that can provide the option to meet their active schedule. The advancement in technology has provided the delivery options at distance education (Butner et al, 1999).

Hybrid campus has emerged as a holistic approach in education by using blended learning. This approach has enabled educational institutions to combat the disruption of any kind in future. This approach of hybrid has made the educational institutions more flexible by offering more options to the demands of the students, expanding the range of programmes, lowering the cost, breaking down the barriers of distance and time, changing the ways of students' support services and inform intervention (Ninnemann et. al., 2020).

The good thing is that these dimensions of emerging trends and needs have been realized and found place in the thought processes of the policy makers and educationists in Pakistan. Now, relevant persons have internalized that online pedagogy has become an obligation to be adopted.

A Glimpse of Guideline for Implementation of Online Learning at Higher Education

In the previous sections, a brief picture of the developments in the ways how online pedagogy is making its way to cope with the changing culture of the teaching learning process due to globalization as a result of innovations in information and communication technologies. Various softwares of synchronous and asynchronous communications have been developed to accommodate the emerging needs of online teaching-learning environment. The development of sophisticated technology and its use is a complex process. The orientation of research and development of persons or society plays an inspiring force to act in the achievement of visionary goals. It is the philosophy and the mindset that determine how you see the world and how it should be. This is the focal point of discussion in the succeeding part.

Around one and half billion students across the world were engaged in one or the other type of online learning during the burst of Covid-19 in March 2020 (UNESCO, 2021). Majority of the students faced a lot of problems the nature of which varies with respect to context of society to which they belong to. For example, children of USA or Developed European countries may have problem with online learning quite different from that of third world or developing countries. This the discussion in Pakistani context.

HEC issued a guideline to the Vice Chancellors of Universities regarding implementation of online classes that consists of following six elements.

- a. University Readiness- availability of resources at operational level
- b. Faculty Readiness- ensure the required training of teachers to teach online.
- c. Course Readiness- availability of all related information about the course on LMS
- d. Library Readiness- make sure the online access of related literature about the course
- e. Technology Readiness- ready for use technology for online classes
- f. Student Readiness- motivation of students to learn how to use online resources and assist them in overcoming their problems (Chairman HEC, 2020).

Actually, the above vision statement should have been disseminated and implemented a quite before the hit of Covid-19 pandemic keeping in view the dimensions of globalization but pandemic forced us to think like this. It requires a time to reach the development and implementation stages after the process of thinking, planning, developing and implementation. It means we are at very early stage of implementation of online pedagogy.

Unfamiliarity with the philosophy and technology of the online pedagogy

Being unfamiliar with the knowledge of using online mode of teaching has a crucial impact in adopting online pedagogy by teachers. The studies conducted by Ocak (2011) and Ching et. al.(2018) indicated some of the main difficulties experienced by university teachers with respect to complex nature of web-based courses and shortcomings in planning and organisation. Many higher education teachers did not intend to use this mode. If they were to use it, they were unfamiliar how to use it effectively (Conard, 2002). The referred studies show the responses of teachers of those educational institution where the online teaching has been implemented in normal pre-pandemic situation.

In Pakistani context, the Covid-19 Pandemic forced to switch to alternate of online teaching. Many faculty members continued to replicate online what they used to execute in their traditional classrooms. This situation put them even in more contradictory situation.

As the education systems in Pakistan is traditionally operated based on face-to-face communication and lectures delivered in front of students. A few institutions are functioning through distance mode but the communication is mainly asynchronous. Teachers of formal educational institutions do not have any exposure to the online pedagogy and no knowledge of its philosophical paradigm.

In spite of the compulsory use of online teaching during the pandemic, majority of the higher education teachers did not intend to use online mode of teaching as they did not have any previous experience of online teaching and found it as a new approach with a quite different requirements for preparing the lessons, delivering it and then assessing the students' understanding. Therefore, the teachers faced a lot of challenges for which they did not have any access to immediate source to resolve their issues. Consequently, they adopted modifies techniques which they found manageable but the proficiency of these techniques left many critical questions.

Faculty are still exploring the concept and nature of online teaching platform and how they can use it to make their lessons effective in order to promote remarkable learning experiences.

Attachment with the traditional system of education (not being future oriented)

It is observed that if a person work in some environment, he develops a sense of attachment to it and feels comfortable by developing compatibility with the features of that environment. Any change in the system requires that persons involved should modify their approaches and skill to cope with the changes. This requires efforts on the part of persons both at mental and physical levels, i.e., change in the thought processes and the development of skills at physical level. Any resistance to this change refers to maintain status quo. Apuke and Lyendo (2018) pointed out that lack of readiness was observed among staff, students and institution. The sudden introduction of online pedagogy created a paradox that called for developing harmony to dispel the paradox.

Psychologist Dr Geert Hofstede developed a cultural dimensions model for understanding cultural dimensions of countries. The model includes six dimensions to distinguish one culture from the other. One of these six dimensions is Long-Versus Short-Term Orientation. This dimension explains the links a society maintain with its past while dealing the present or future times challenges. The low score on this dimension refers to the attachment with time honoured traditions and view societal change with suspicious while high score refers to more pragmatic approach (Hofstede, 2011; Hofstede, 2010). The score of 50 of Pakistan on this dimension do not indicate any preference. This means that if properly motivated, and provided required facilities and resources, the implementation of online pedagogical techniques can be expedited.

Sense of Vulnerability

Another issue of the reluctancy of the faculty members to adopt online teaching platform is their sense of vulnerability while communicating through online. In tradition system, the activities performed in the classroom are not observed and recorded in any form. The teachers remain relaxed in the way of delivering their lectures and academic activities. On the other hand, the performance

of the teachers in the classroom may be observed, recorded and used as a reference. Therefore, teachers do not show their interest in using online teaching especially the synchronous mode.

Unavailability of Relevant resources required to set-up and run the online system.

Every system has its own feasibility requirement in order to establish its functioning. Traditional education system has been running since long and, therefore, managed its resources for effective and smooth performance. The provisions of online teaching and learning are quite different, innovative, and requires a completely distinctive environment, tools and resources.

Education institutions at all levels across the country have remained closed in order to avoid the spread of Covid-19. Now, they are open, may be called semi open. The educational institutions have tried to conduct online teaching. Two problems posed main hurdles against the provision of online teaching facility in Pakistan. One is sustained broad band internet connection and the other is an uninterrupted supply of electricity. The availability of these two fundamental resources could not be ensured even in cities and, therefore, a sizeable majority of students of higher education institutions were unable to use online resources of teaching learning. Higher charges, low speed and connectivity issues of internet enhanced the difficulty level in using online learning resources. Financial constraints of parents due to pandemic have reduced the paying capacity; and addition expenses for online teaching added up to their financial burden.

Devices with advanced featured are required to establish online connectivity especially the synchronous mode which are not affordable to vast majority of students and educational institutions as well. This situation gets worsen in rural and remote areas. This situation is still prevailing even after one and a half year have been passed. Unfortunately, the educational sector remains deprived of the state ownership and sponsorship in true sense.

Unavailability of infrastructure for training of the users

The educational institutions in Pakistan hurriedly tried to provide online resources to accommodate the gap of physical traditional mode of teaching and online learning. Both teachers and the students were not familiar with the use these tools and techniques. The institutions failed to provide the infrastructure for the training of teachers, students and other personnel involved on how to use these resources. As a result, the benefits to the extent of the level of achievements decided by implementing online teaching could not be achieved. Every person used it according to his understanding and ease. The educational institutions treated the teachers and the students as if they already know how to use the platform of online teaching.

No Feedback Collected

The educational institutions have not introduced any procedure of getting feedback of the faculty and the students regarding their experiences of using the online system of teaching and learning. Almost three semesters have been passed, one way approach of administering the online tools is prevailing. Whatever the IT department thinks suitable is being implemented irrespective of taking into consideration of opinion of teachers and students. Therefore, a lack of coordination is seen- whatever the administration think suitable is notified to be implemented while whatever teachers and students decide to accommodate their needs is adjusted beyond the infrastructure provided. For example, whatsapp is being used as teaching learning tool instead of platform provided by the institution. Whatsapp group of a class is created. Teacher record some audio explanation and post on whatsapp group. The students ask question by posting them on the group. Even related literature and assignments are exchanged through whatsapp group. It does not mean that whatsapp should not be used. It may be used as supporting tool in addition to e-learning platform. Whatsapp does not qualify as an e-learning platform although it may serve to connect with the students in the hallway.

Wish of the Teachers and Students

The on the campus educational activities remained closed almost for the last one and a half year; still, these are semi-opened. As there was no substitute available that could be used to continue the educational activities. The strategies adopted were just the impression that educational process was kept active and managed in an efficient way to minimize the adverse effects of pandemic. In fact, we made the compromises and still doing this. The syllabi were reduced, promoted the students without any assessment process, conducted exams symbolically, maintained their grades, etc. There are justifications in support of these actions as we could do only these managements because system was not prepared for such type of chaos. All the steps taken were at the political and administrative level but not at intellectual, academic and professional level. As a result, both teachers and students enjoyed the situation. If something is done now to put the system to normal track, students start agitating and teachers seem wishing this silently that the status quo may be prolonged.

Unavailability of experts in the field of online pedagogy

Although the online pedagogy is a latest field of studies and requires specialized knowledge and skills to establish and maintain its availability. As it is already discussed that it is not an option now but an obligation to address the new dimensions of teaching-learning in this world of sophisticated technology and paradigm shift of teaching and learning. This aspect should have been addressed at policy level a long time earlier. The well-established and historically reputed higher educational institutions should have offered programmes to produce expert in this field keeping in view its need in the present and coming times. But, they have failed

to lead the time. Even these institutions are not planning in this direction and still focusing on traditional fields of pedagogical studies. Therefore, this field of online pedagogy is lacking experts who can develop, establish and run this mode under its true philosophy and features.

The teaching faculty are facing confusing situation where they hardly find any person who can guide them in resolving their questions related to online teaching. They just search somebody who has some previous experience of using online teaching resources. These are the users and not the expert who have got some experience of using online teaching tools. In the absence of specialized staff in the area of information and communication technology in education, present permanent staff can be trained to meet the immediate need of online pedagogy.

There is a pressing need to produce expert of online pedagogy and higher education institutions and departments of teacher education should focus on this field of pedagogical studies.

Student Assessment and Examinations

The closure of regular educational process in schools, colleges and universities interrupted the learning and assessment of the students around the world. The lockdown of institutions affected the internal assessments process and the cancellation of examinations was done almost around the world. Nobody knew how much the situation of lockdown would prolong. The student could not be retained at the same grade until the resuming of normal situation. So various modes of awarding grades were adopted.

One potential option was to use 'predicted grades'. The predicted grades are usually inaccurate. It is studied by Murphy and Wyness (2020) that the predicted grades of high achieving students from disadvantaged background remained lower than those from more advantaged backgrounds. Another option is to use teacher assessment in place of blind examination. A deviation is observed between unblind and blind examination and the direction of biasness is in favour of the group that usually perform better (Rangvid 2015).

Online assessment opted by many higher educational institutions raised many ethical issues along with errors in assessment. The use of online assessment also has many benefits but encounters issues of improper technical infrastructure in developing countries. Both students and teachers are unfamiliar with the technical aspect of online assessment with respect to use of hardware and softwares- unfamiliarity with the online process of assessment; scoring and grading issues; and using the traditional tools via online assessment (Alruwais et. al., 2018)

The online assessment is the most tricky and new area for both teachers and student and, therefore, prone to more errors than usual. There is a need to conduct research to find out ways of online assessment of students that provide more reliable

and valid results and also ensure the valid procedure to avoid subjective influences on scoring and grading.

The available experts are related to hardware and software but they do not have pedagogical orientation.

Online pedagogy is the latest field developed keeping in view the demands of modern society of globalization era. This is multidisciplinary field that include the hardware and software components of information and communication technology along with the pedagogical aspects. In Pakistani context, the available experts are only related to hardware and software components but they do not have the knowledge of pedagogical aspects. On the other hand, the available experts in pedagogy do not have the knowledge of ICT and its use in education. During this pandemic, the available computer experts tried their best to establish online pedagogical environment by installing hardwares and softwares already available in the market. These experts do not have the expertise to develop resources as per needs and nature of the pedagogical requirements. So, the higher educational institution should concentrate on offering programme in this multidisciplinary field of ICT in education so that the graduate, after having mastery, would be able to develop softwares according to our indigenous requirements.

Recommendations

As, this is clear from the discussion and analysis that online teaching is the need of the day that cannot be avoided due to its capacity to accommodate needs of the modern world of technology.

The educational institution, especially the higher education institutions, should do deliberate efforts to introduce the concept and understanding of the online teaching and to mitigate the negative impacts attached with its use. Although, it is the use of sophisticated technology but its use should be supported with the intellectual and logical clarity. This can only be done at institutional level.

More and more seminars and workshops should be conducted to highlight the features of online teaching and facilities it offers to all quarter of its users. A more long-term and real solution is to produce expert who are capable of developing the resources according to local demands. In this way, we can effectively implement the online teaching platforms and have full control on resources and data.

We should be very rationale and optimistic in using online learning. Its use should not be made compulsory but essential in way on logical decision that determines its suitability, i.e., where it is suitable to use online learning, traditional learning or blend of these. The mode of hybrid campuses should be promoted- a blend of traditional and digital teaching-learning environment. In this way, we can get the benefits of both modes of teaching environments.

References

- Alruwais, N., Wills, G., & Wald, M. (2018). Advantages and challenges of using E-assessment. *International Journal of Information and Education Technology*, 8(1), 34-37. <https://doi.org/10.18178/ijiet.2018.8.1.1008>
- Apuke, O. D., & Iyendo, T. O. (2018). University students' usage of the internet resources for research and learning: Forms of access and perceptions of utility. *Heliyon*, 4(12), e01052. <https://doi.org/10.1016/j.heliyon.2018.e01052>
- Best Online Course Providers. (n.d.). G2. <https://www.g2.com/categories/online-course-providers>
- Best Student Information Systems (SIS). (n.d.). G2. <https://www.g2.com/categories/student-information-systems-sis>
- Best Virtual Classroom Software. (n.d.). G2. <https://www.g2.com/categories/virtual-classroom>
- Butner, B.K., Smith, A.B. & Murray, J. (1999). Distance Technology: A National Study of Graduate Higher Education Programs. *Online Journal of Distance Learning Administration*, 2(3).
- Carvalho, S. (2000). Modernizing and Globalizing the Learning Environment: Video-Conferencing in Education. In: Distance Education in Small States, 2000 Conference Proceedings, The University of the West Indies/The Commonwealth of Learning, pp. 299-309
- Chairman HEC. (2020, 4). *Why Online Education?* Higher Education Commission, Pakistan. <https://www.hec.gov.pk/english/HECAnnouncements/Pages/Why-Online-Education.aspx>
- Ching, Y.-H., Hsu, Y.-C., & Baldwin, S. (2018). Becoming an online teacher: an analysis of prospective online instructors' reflections. *Journal of Interactive Learning Research*, 29(2), 145-168. <https://doi.org/10.24059/olj.v22i2.1212>
- Cojocariu, V., Lazar, I., Nedeff, V., & Lazar, G. (2014). SWOT Analysis of E-learning educational services from the perspective of their beneficiaries. *Procedia - Social and Behavioral Sciences*, 116, 1999-2003. <https://doi.org/10.1016/j.sbspro.2014.01.510>
- Conrad, D. (2002). Deep in the heart of learners: Insights into the nature of online community. *Journal of Distance Education*, 17(1).
- Curtain, R. (2002). *Online delivery in the vocational education and training sector: Improving cost effectiveness*. <https://docplayer.net/1038203-Online-delivery-in-the-vocational-education-and-training-sector-improving-cost-effectiveness.html>

- Foreman, S. (2017). *The LMS guidebook: Learning management systems demystified*. American Society for Training and Development.
- Grant, Michael M, & Cheon, Jongpil. (2007). The Value of Using Synchronous Conferencing for Instruction and Students. *Journal of Interactive Online Learning*, 6(3), 211-226.
- Greenberg, A. (2004). *Navigating the sea of research on video conferencing-based distance education*. <https://wainhouse.com/files/papers/wr-navseadistedu.pdf>
- Harmon, S. W., & Jones, M. C. (1999). The five levels of Web use in education: Factors to consider in planning online courses. *Educational Technology*, 39(6), 28–31.
- Hofstede, G. (2011). *Dimensionalizing Cultures: The Hofstede Model in Context*. *Online Readings in Psychology and Culture*, 2(1). doi:10.9707/2307-0919.1014
- Hofstede, G., Hofstede, G. J., & Minkov, M. (2010). *Cultures and organizations: Software of the mind* (3rd ed.). McGraw Hill Professional.
- Murphy, R., & Wyness, G. (2020). *Minority report: the impact of predicted grades on university admissions of disadvantaged groups*. *Education Economics*, 1–8.
doi:10.1080/09645292.2020.1761945
- Nagel, D. (2009). Most college students to take classes online by 2014. *Campus technology*. <https://campustechnology.com/articles/2009/10/28/most-college-students-to-take-classes-online-by-2014.aspx>
- Ninnemann, K., Liedtke, B., Heijer, A. D., Gothe, K., Loidl-Reisch, C., Nenonen, S., Nestler, J., Tieva, Å., & Wallenborg, C. (2020). *Hybrid environments for universities*. Waxmann Verlag.
- Ocak, M. A. (2011). Why are faculty members not teaching blended courses? Insights from faculty members. *Computers & Education*, 56(3), 689–699. <https://doi.org/10.1016/j.compedu.2010.10.011>
- Palloff, R. M., & Pratt, K. (2013). *Lessons from the virtual classroom: The realities of online teaching*. John Wiley & Sons.
- Piña, A. A. (2010). An Overview of Learning Management Systems. In Y. Kats (Ed.), *Learning management system technologies and software solutions for online teaching: Tools and applications: Tools and applications*. IGI Global.
- Poritz, J. A., & Rees, J. (2016). *Education is not an app: The future of university teaching in the internet age*. Taylor & Francis.

- Rangvid, B. S. (2015). Systematic differences across evaluation schemes and educational choice. *Economics of Education Review*, 48, 41-55. <https://doi.org/10.1016/j.econedurev.2015.05.003>
- UNESCO. (2021). *UNESCO rallies international organizations, civil society and private sector partners in a broad coalition to ensure #LearningNeverStops*. <https://en.unesco.org/news/unesco-rallies-international-organizations-civil-society-and-private-sector-partners-broad>
- Volery, T., & Lord, D. (2000). *Critical success factors in online education*. *International Journal of Educational Management*, 14(5), 216–223. doi:10.1108/09513540010344731
- Wilkinson, K. L., & Hemby, K. V. (2000). An examination of perceptions of the use of virtual conferences in organizations: The Organizational Systems Research Association (OSRA) and the Association for Business Communication (ABC) members speak out. *Information Technology, Learning, and Performance Journal*, 18(2), 13-23.