The use of electronic platforms in teaching and professional development

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Contents

INTRODUCTION

Today in the digital era, we are witnessing a total transformation of educational spaces, heavily affected by phenomenal development and spread of technology. The integration of digital technologies in education has become a significant shift in education. The monograph is focused on the integration of Learning Management Systems (LMS) such as BBB (Big Blue Button) Lumi and Google Classroom, it also explored how technology is a tool that can be enhanced to improve learning outcomes the curriculum and teaching practices. It discusses these changes in the context of traditional educational methodologies and reviews specific ways that student response tools are making a difference in today's learning environments.

At a time when we are going through the age of digital revolution, it has become paramount for educational institutions globally to leverage technological advances. In this monograph, we hightlight the promise of educational platforms to disrupt teaching and learning as well as explore related avenues where digitisation will matter more. Through the crucial inflection point with digital education, this volume offers a bridge between theory and practice across policy makers of its stakeholders in educational innovation.

While the history of technological change in education is nothing new, many have argued that we are currently living through a period where both the scale and pace at which these technologies are being adopted represent different challenges (and opportunities) than those from previous generations. Educational practices have typically been slow to change over the course of history. Nevertheless, the rise of internet and later digital has definitely forced a re-thinking about how education can be delivered/ received. This monograph contextualises the modern digital change inside this history and focuses at values of continuity and change in educational evolution.

Learning management systems have played a crucial role in allowing synchronous and asynchronous learning - the rock bed of this change. Tools like

BBB, Lumi and Google Classroom possess the ability to both deliver course content, administer assessments; even conduct discussions virtually in any global location. They are not only platforms, they operate as ecosystems capable to create a flexible space for learning free of the restrictions time and place except digitally.

One of the major advantages digital platforms provide is; it makes education available. In this monograph, the author describes about educational platforms and how they provide equal opportunities for people of different regions, economic status or social level to get a good quality education. Another corner stone of digital education is flexibility where students have the opportunity to learn at their own time pace and refer back, engage with course material when it suits them jungle. This is essential for non-traditional learners - employed or those living remotely, who either cannot participate in a brick and mortar classroom setting.

However, transitioning to digital learning is not without issues. It delves into such essential issues as the digital divide: that cleft between those who have some access to modern information and communication technology. Moreover, digital platforms have the potential to strengthen learning thus necessitating large-scale changes in instructional practices and pedagogical approaches. Educators not only need to learn how to use these technologies, but they also must develop the skillsets necessary to incorporate them when teaching in order that learning outcomes are maximised.

This research monograph also focuses on pedagogical implications of digital technologies. The article talks about the application of LMS platforms in representing constructivist learning theories because these types see learners as knowledge constructors and their activity creates mental representations. It covers remote and online learning contexts, offering practical advice for lecturers on how to design digitally mediated learning experiences that are designed more engagingly and collegiately.

This monograph concludes with recommendations for educators and institutions looking to leverage digital technologies. It means that educators will need additional digital-literacy skills, and therefore ongoing professional development. It also suggests changes to policy at the institutional and governmental level, in order for infrastructure and instruction are adapted appropriately for a successful digital education.

This monograph provides a synthesis of the major changes taking place, as educators and designers increasingly begin to realise that education can be seen in its entirety through digital technologies. Thoroughly questioning the utopianism and dystopia of three worlds, BBB, Lumi or Google Classroom? It reflects fairly both an optimistic perspective on digital education as well as a balance to be maintained. The insights shared here will be invaluable as we make progress toward the development of responsive, effective and inclusive educational practice drawing on what is best in digital technology to improve learning outcomes. Moreover, this is not only a theoretical question but rather a fundamental one needed in order to make education continues serve the interested target groups who are partly changing what can and cannot be learned, must not longer change career opportunities.

CHAPTER I. HISTORY OF DISTANCE EDUCATION AND DIGITALIZATION OF EDUCATION WITH CURRENT CHALLENGES

§ 1.1. Pedagogical Genesis and Progression of Distance Education

Online education is no longer considered a fad, but rather a need. 6.7 million (32.5 percent) of the 20.6 million higher education students registered in online courses, according to the National Center for Education Statistics. A whopping one- third of higher education students enrolling in an online course fall into this category, which is quite astounding. Online courses are here to stay, and educational institutions are scrambling to keep up with the growing demand for them. The practice of distance education was prevalent in the 1800s, but it really started to develop rapidly in the 1990s. It is by no means a new occurrence, but it is continuing to reach new heights as technological advancements continue to grow.

Due to the fact that the teacher and students are physically separated, correspondence education is considered a form of distance education. According to the definition, it is "a method of providing education for nonresident students, primarily adults, who receive lessons and exercises through the mail, or through some other device, and upon completion of the exercises return the completed materials for analysis, criticism, and grading" (Encyclopedia Britannica, 2012). One of the primary goals of distance education is to provide educational opportunities to those who are underrepresented in traditional educational institutions or who do not have access to such institutions[1]. The first known instance of correspondence education occurred on March 20, 1728, when Caleb Phillips published an advertisement in the Boston Gazette offering shorthand

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[1] Jonasson J. Online distance education a feasible choice in teacher education in Iceland?. - Glasgow: University Strathclyde, 2001. Unpublished master's thesis. https://notendur.hi.is/jonjonas/skrif/mphil/thesis - p.18-22.

lessons to any "Person in the Country desirous to Learn this Art, may be having several Lessons sent Weekly to them, be as perfectly as those who live in Boston"[2].

Many people believe that because there is no evidence of two-way communication, this cannot be recognized as formal distance education by the federal government [11]. While the advertisement does not explicitly state the premise or intent, it does state that shorthand is to be taught through the US Postal Service (PS).

Shorthand was first taught by correspondence in 1840 by Isaac Pitman in Bath, England, who is widely regarded as the father of distance learning. Pitman mailed postcards to students, instructing them to transcribe passages from the Bible into shorthand and return them to him via the postal service for review[3]. The Phonographic Correspondence Society, a precursor to Sir Isaac Pitman's Correspondence College, was established just three years later, in 1843. Twenty-nine years after the Society to Encourage Studies at Home was established in Boston, Massachusetts, Anna Eliot Ticknor founded the Society to Encourage Studies at Home in New York City, which was based on the model of a correspondence school. Illinois Wesleyan College became the first academic institution to offer degree programs "in absentia" less than a year after the first such program was offered[4].

Correspondence education

It had been established by the 1870s and was on the verge of becoming widely available.

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[2] Philipps C. Caleb Philipps teacher of the new method of shorthand. - Boston: The Boston Gazette, 1728

[3] Verduin J. R., Clark T. A. Distance education. - Oxford: Jossey-Bass Publishers, 1991; Western Governors University. About WGU. 2015. https://www.wgu.edu/about.html

[4] Emmerson A. M. A history of the changes in practices of distance education in the United States from 1852–2003. Ed. D. Dissertation. NY. Dissertations & Theses. - New York: Dowling College, 2004. - p. 2. https://www.semanticscholar.org/paper/A-history-of-the-changes-in-practices-of-distance-Emmerson/e09c4aadd97209fc94fe049661a925d03abbe431

The Chautauqua Movement of the 1870s is credited with the inception and acceptance of correspondence education for adults during that time period[5]. When Lewis Miller and John Heyl Vincent announced the movement in New York State in 1874, they were referring to a summer training program for Sunday school teachers. Gradually, the program broadened to include general education and the arts, as well as supplemental readings and studies that could be completed at home or through mail. Around the country, a number of "chautauquas" were established to serve as learning assemblies and seminars. Their summer gatherings were well- known, but they also offered four-year correspondence reading courses, for which participants received certificates of completion. After establishing the Chautauqua Literary and Scientific Circle in Chautauqua, New York, in 1878, John Heyl Vincent established the first adult education program and correspondence school in the country, which is still in operation today[6]. Established in 1883, Chautauqua University pioneered the extension and correlation of education.

From 1892 to 1892, it offered a variety of courses, including summer sessions, until it was forced to close due to a lack of funds [7].

Following in the footsteps of Chautauqua University, William Harper Rainey began offering college-level correspondence courses at the University of Chicago the following year, using the same model[8]. With 3,000 students enrolled in 350 courses with 125 instructors, the correspondence division at the University of Chicago enjoyed considerable success in terms of enrollment[9].

During the late 1800s and early 1900s, the demand for a college degree grew, as did the number of people who could not attend a traditional university

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[5] Harting K., Erthal M. J. History of distance education. 2005. - p. 35–44.

[6] Cincinnati Daily Gazette. Open air gospel. Further notes of the camp meeting session. A notable day in the Chautauqua Assembly. 1878. - p. 7.

[7] Harting K., Erthal M. J. History of distance education. 2005. - p. 35–44.

[8] Scott J. C. The Chatauqua movement: Revolution in popular higher education. 1999. - p. 389–412.

[9] Rumble G. The planning and management of distance education. - London: Croom Helm, 1986.

due to a variety of reasons (financial, geographic, and other obligations)[10]. A new era in correspondence education began with the recognition of the need to provide equal access to educational opportunities for all. There has been an increase in concern about the quality of the education provided by these programs, as a result of the rising demand for and popularity of correspondence education. The National University Extension Association was established in 1915 with the mission of "developing and advancing ideals, methods, and standards in continuing education and university extensions" (National University Extension Association, n. d.). It didn't matter if the goal of correspondence education was to educate students for degrees, update professional knowledge and skills, or train new soldiers; the goal was to provide a high-quality education and allow anyone and everyone to expand their intellect and knowledge.

Radio

Guglielmo Marconi invented the spark transmitter and received the first patent for a radio device in 1894, which marked a significant step forward in the history of distance learning [11] [12]. The use of new communication technologies as a means of reaching more students was not uncommon among distance educators for a short period of time. University of Wisconsin-Extension was established in 1906 as a unit for distance education. Several University of Wisconsin professors started an amateur wireless station in 1919 that became known as WHA, the first federally licensed radio station dedicated solely to educational broadcasting in the United States[13]. Other educational institutions were granted regular broadcast licenses in 1922, but only half of those with such licenses had stations on the air

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[10] Verduin J. R., Clark T. A. Distance education. - Oxford: Jossey-Bass Publishers, 1991; Western Governors University. About WGU 2015. http://www.wgu.edu/about_WGU/overview

[11] Omaha World Herald (1897, June 6). Without wires. A young Italian's alleged remarkable invention. The Omaha World Herald, XXXII (249), - p. 11.

[12] Buckland M., Dye C. M. The development of electronic distance education delivery systems in the United States. Recurring and emerging themes in history and philosophy of education. Paper presented at the Annual Conference of the Midwestern Educational Research Association. - Chicago, 1991. Retrieved from ERIC Clearinghouse microfi ches.

[13] Engel H. A. WHA, Wisconsin's pioneer. Unpublished manuscript. - Madison: Wisconsin State Historical Society, 1936.

at the time of this publication[14]. A total of 176 educational institutions had received broadcast licenses by the end of the twentieth century. Broadcasting for educational purposes is generally considered to have begun in the early 1920s. The transmission of educational material by colleges and universities was quickly superseded by the social broadcasting of sporting events, concerts, dramatic performances, and college lectures[18]. There was no governing law in place to regulate land-based public broadcasting stations, despite the rapid expansion of radio broadcasting. As a result of the Radio Act of 1912, all station operators and transmitting apparatuses for interstate or international transmission were required to be licensed.

The world of business & industry[15]. Since radio transmission was not specifically mentioned in the Radio Act, the proliferation of new radio stations continued until the limited number of radio frequencies available for transmission were exhausted by 1922. As a result, Herbert Hoover, the Secretary of Commerce at the time, was compelled to turn down licensing applications[16]. An appeals court determined in 1923 that Hoover was required to issue broadcast licenses to anyone who applied, resulting in a dramatic increase in the number of radio stations and, as a result, increased interference on broadcasting channels during the 1920s and '30s[17]. The Radio Act of 1927, which attempted to regulate the broadcasting industry and placed decision-making powers in the hands of an independent agency, the Federal Radio Commission, was enacted as a result of this legislation[18].

Because of these radio-related regulatory issues, as well as the economic turmoil that accompanied the beginning of the Great Depression in 1929,

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[14] Wood D. N., Wylie D. G. Educational telecommunications. - Belmont: Wadsworth Publishing Company, 1977.

[15] Department of Commerce, Bureau of Navigation. Radio Communication Laws of the United States. 1914. https://babel.hathitrust.org/cgi/pt?id=msu.31293018008247&view=1up&seq=5

[16] Verduin J. R., Clark T. A. Distance education. - Oxford: Jossey-Bass Publishers, 1991; Western Governors University. About WGU. 2015. http://www.wgu.edu/about_WGU/overview

[17] Hoover v. Intercity Radio CO., 286 F. 1003 (D.C. Cir. 1923) - p. 34-41.

[18] United States Congress. The Radio Act of 1927. Public Law Number 632, February 23, 1927, 69th Congress. 1927. http://www.americanradiohistory.com/

educational institutions and educational radio broadcasting suffered significant consequences. After all was said and done, only 35 out of 176 radio stations in educational institutions had survived at that point in time[19]. A "school of the air" program, which broadcasts daily science, literature, history and music programming, was instituted by some institutions simply to keep their doors open. A pioneering program, Ohio School of Aviation, was established in the fall of 1928 by the Ohio State Department of Education.

It was the first of its kind [20]. Additionally, in 1928, the National Broadcasting Company (NBC) launched the Radio Corporation of America (RCA) Educational Hour, also known as "The Music Appreciation Hour," with the goal of introducing children to the symphony orchestra and other forms of music. The American School of the Air was established by the Columbia Broadcasting System (CBS) in 1930[21]. It was on May 11, 1930, that the Rockefeller Foundation and the Carnegie Foundation joined forces to establish a National Advisory Council for Radio in Education (NACRE) in an effort to promote radio broadcasting as a teaching medium [25]. In addition, the Institute for Education by Radio (IER) in Columbus, Ohio, was established in 1930, and radio was used extensively in the classroom there until the 1970s. The techniques used in educational broadcasting were the focus of the IER's research. A growing need for a national organization in the field became apparent as time went on.

An organization in Washington that would be dedicated to the use of radio for educational broadcasting and that would also serve to coordinate efforts on the part of educational institutions and radio stations The National Committee

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[19] Buckland M., Dye C. M. The development of electronic distance education delivery systems in the United States. Recurring and emerging themes in history and philosophy of education. Paper presented at the Annual Conference of the Midwestern Educational Research Association. - Chicago, 1991. Retrieved from ERIC Clearinghouse microfi ches.

[20] Duff W. A. In Ohio three r's are taught by fourth radio: School of the air pioneers national movement to use microphone in education. - Cleveland: Cleveland Plain Dealer, 1929. - p. 23; Holy T. C. The Ohio School of the Air. 1949. - p. 148–153.

[21] Johnson H. A. American School of Air finds inspiration in its drive to being knowledge. - Cleveland: Cleveland Plain Dealer, 1936. - p. 25; Wood D. N., Wylie D. G. Educational telecommunications. - Belmont: Wadsworth Publishing Company, 1977.

on Education by Radio (NCER) was established on December 30, 1930, and has been in existence ever since.

However, its use in education was more popular in Europe and other countries around the world than in the United States during the 1920s because radio was the new communication technology of the era. Particularly prevalent in countries where radio was more reliable than the postal service or where literacy rates were lower was this phenomenon. As noted by Greville Rumble[22], "In Latin America, radio broadcasting organizations were among the pioneers of distance education, and this is reflected in the structure of many current systems, which place a lesser emphasis on print and individual correspondence tuition, and a greater emphasis on locally organized listening groups". When it comes to educating and informing the general public, radio was, and in some countries continues to be, the best tool available. Although it was inexpensive and quick to implement, the content could be changed at any time and it could reach a large number of people. New technologies enabled the advancement of distance education innovation, which began in the 1700s and has continued to this day. Soon after the invention of radio broadcasting, the ability to "see" an instructor on a television screen, even when viewing it from a distance, was recognized as a wonder.

Television

Even though the vision to use visual technology in education was conceived long before such capability existed, many people were surprised when it did not gain as much traction in education as they had expected once it was put in place[23]. "Books will become obsolete in public schools," Thomas Edison predicted in an interview with Frederick Smith in 1913. A visual instruction method will be used to teach scholars. Every field of human knowledge may be

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[22] Rumble G. The Planning and Management of Distance Education. 1986. - p. 9.

[23] Verduin J. R., Clark T. A. Distance education. - Oxford: Jossey-Bass Publishers, 1991; Western Governors University. About WGU. 2015. http://www.wgu.edu/about_WGU/overview

taught via the use of motion pictures. "Within 10 years, our educational system will have undergone a radical transformation". Furthermore, Edison claimed that

We have been researching and replicating the life of the fly, the mosquito, the silk weaving moth, the brown moth, the gypsy moth, butterflies, scales, and other insects, as well as chemical crystallizations and other phenomena. That motion pictures are valuable in chemistry, physics, and other fields of study is shown decisively by the fact that they make scientific concepts that are difficult to comprehend via textbooks apparent and understandable to children. The following paragraph is from Page 24:

So the development of visual media as a medium for teaching began long before the usage of its aural equivalent (radio) in educational settings was considered.

Despite the fact that the science had been developed as early as the late 1800s, commercial television did not become a part of the public domain until April 9, 1927, when Secretary of Commerce Herbert Hoover and Bell Laboratories conducted the world's first long-distance live video and voice transmission. As Hoover put it, "For the first time in history, we have, in a sense, visual transmission for the first time." According to the Cleveland Plain Dealer[24] "human brilliance has now abolished the hindrance of distance to an unprecedented degree and in a way before unknown"[25].

Although television broadcasting for educational purposes was available as early as 1932, it was not until the University of Iowa in 1937 that the first such usage was pioneered. 1)[26]. In any case, this was merely an experiment to see whether television could be used for educational reasons in the first place. It is defined as "a medium that disseminates programming dedicated to information,

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[24] Cleveland Plain Dealer. Hoover seen and heard 200 miles: Test of television may mean general use of seeming miracle. 1927. - p. 10

[25] Federal Communications Commission. (n. d.). Communications history: Visionary period, 1800s through 1920s. Retrieved from the Federal Communications Commission website, http: //transition.fcc.gov/omd/history/tv/1880-1929.html

[26] Koenig A. E., Hill R. B. The farther vision: Educational television today. - Madison: The University of Wisconsin Press, 1967. - p. 5.

teaching, cultural or public affairs, and entertainment" by the American Society of Information Technology. When audio-visual media was widely used for military training, it was proved that it was effective in teaching. As a result, video was more used in the classroom. It did not, however, result in the widespread use of television for remote learning programs[27].

The University of Iowa, Iowa State University, Kansas State University, the University of Michigan, and American University were among the early adopters of educational television and those who realized the potential of educational television from the beginning. There are still several obstacles to the use of television for distance education, even though technology and the use of video as a teaching medium have progressed. A moratorium on new television licenses was instituted by the Federal Communications Commission (FCC) in 1948 to address interference and allocation difficulties that had arisen as a result of a flood of license applications. However, because they were "not organized as a unified educational body" in 1950, educational institutions were unable to influence the Federal Communications Commission's decision on educational television frequencies. In the following year, the FCC announced that educational television frequencies would be allocated to the University of California system. After much deliberation, the Federal Communications Commission issued its Sixth Report and Order in 1952, which responded to educators' pleas to reserve television channels for the exclusive purpose of education[28]. Following the report's findings, a total of 242 channels were originally reserved, with a total of 632 channels being reserved by 1966. In 1966, one-third of the stations on the air were licensed to state and municipal educational systems, another third to colleges and universities, and a final third to non-profit organizations and other non-governmental groups. According to the recommendations of the Carnegie

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[27] Verduin J. R., Clark T. A. Distance education. - Oxford: Jossey-Bass Publishers, 1991; Western Governors University.

[28] Federal Communications Commission. (Part 2, 1952). Sixth report and order. Broadcasting telecasting. – p. 51-56. Retrieved from: http://www.americanradiohistory.com/Archive- BC/BC-1952/BC-1952-04-14-Pt-II-TV-Freeze-Lift.pdf

Commission on Educational Television, the Public Broadcasting Act of 1967 created the Corporation for Public Broadcasting (CPB) (CPB). In its mission statement, the CPB said that it wanted to "promote the expansion and development of public radio and television broadcasting, as well as the use of such media for instructional, educational, and cultural objectives"[29].

Radio and television in education continued to rise in the late 1960s and early 1970s, but not in the context of distant education, which stagnated throughout this period. In the classroom, educators were use television as a tool to show and explain topics, while families were watching educational television programs at home (i.e. cable television, Public Broadcasting Service, and National Public Radio). However, the usage of television for distant education, in which an instructor and a student engaged asynchronously, has declined in the last several years [38]. Television courses for distant education were badly created at the time, which may have contributed to the low audience at that time. It was common for these televised courses to include teacher simulations.

In order to hold viewers' interest, the notes should be frequently read aloud. That was no longer true by the mid- to late 1970s. With the introduction of the British Broadcasting Corporation (BBC), a benchmark for American television course makers to follow was established by the BBC[30]. Computers were also being used to give education at the same time, but instructors were not yet ready to accept the new technology, which was adopted at the same time as well.

Internet education

An online education program is defined as a kind of distant education that makes use of computers and the Internet as a delivery method, with at least 80

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[29] Buck J. PTV—It tries harder. - Springfield: Springfield Republican, 1971. - p. 85; United States Congress. The Public Broadcasting Act of 1967. Section 396 [47 U.S.C. 396] Corporation for Public Broadcasting. 1967. http://www.cpb.org/aboutpb/act/

[30] Verduin J. R., Clark T. A. Distance education. - Oxford: Jossey-Bass Publishers, 1991; Western Governors University. About WGU. 2015. http://www.wgu.edu/about_WGU/overview

percent of the course material given over the internet [31]. It was during the 1980s that the use of computers to educate new workers gained traction in the corporate world, as corporations adopted computer-based programs to teach new employees on the job[32]. When the University of Phoenix started utilizing CompuServe, one of the first consumer internet services, in 1989, it marked the beginning of the era of online education programs[33]. The World Wide Web (Web) was launched a few years later, in 1991, and the University of Phoenix was one of the first institutions to provide online education programs on the Internet at that time. However, despite being a for- profit school, the University of Phoenix's shift into the online educational marketplace led numerous respected institutions, as well as non-profit colleges and universities, to follow its lead[34]. The Alfred P. Sloan Foundation (Foundation), a reputable philanthropic, not-for-profit grant-making organization, established the Asynchronous Learning Networks (ALN) in 1992 to investigate educational options for students who were unable to attend regular courses in the traditional classroom.[35] As well as the University of Maryland's for-profit distance education branch, which was regarded to be the only school capable of competing with the rapidly expanding for-profit University of Phoenix, Online shuttered its doors in October 2001[36]. As a result of this growth, enrollment at the University of Phoenix increased from 16,000 to 29,000 students in the same year [37]. 1.6 million postsecondary students were enrolled in online courses by 2002, and six years later, the number had almost

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[31] Allen I. E., Seaman J. Staying the course: Online education in the United States. 2008.
https://files.eric.ed.gov/fulltext/ED529698.pdf; Shelton K., Saltsman G. An administrator's guide to online education. - Greenwich: Information Age Publishing, 2005.

[32] Rudestam K. E., Schoenholtz-Read J. Overview: The coming of age of adult online education. In K. Rudestam & J. Schoenholtz-Read (Eds.), Handbook of online learning: Innovations in higher education and corporate training. 2002. - p. 3–28.

[33] The University of Phoenix. The University of Phoenix history. http://www.distancelearninghq.com/learningresources-universityofphoenix.htm

[34] Carlson S., Carnevale D. Debating the demise of NYUonline. 2001.

[35] Alfred P. Sloan Foundation. Anytime, anyplace, anywhere. https://sloan.org/programs/completed-programs/anytime-anyplace-learning

[36] Carlson S., Carnevale D. Debating the demise of NYUonline. 2001. https://www.chronicle.com/article/debating-the-demise-of-nyuonline/

[37] Allen I. E., Seaman J. Staying the course: Online education in the United States. 2008.
https://files.eric.ed.gov/fulltext/ED529698.pdf

quadrupled to over 3 million [45]. Apart from the University of Phoenix, many other fledgling online educational institutions that were launched during this period could not make it through the first year or two of operation. Many of these programs were started by conventional brick-and-mortar universities and were made available to students over the internet.

Although a variety of issues contributed to the downfall of these online schools, the lack of knowledge of online pedagogy and learning styles, as well as a lack of faculty support for online education, were perhaps the most significant[38] . An entirely new medium for teaching and learning, online education necessitates a new methodology that is distinct from traditional classroom environments[39]. Faculty members were and continue to be a vital element of any university's success, and many faculty members at conventional institutions have resisted the adoption of online education because they are concerned about the quality of education being delivered via this medium[40]. A great many conventional colleges have ventured into the internet marketplace with little or no backing from their professors, putting their online programs at risk of being phased out altogether[41] . Presidents and vice presidents may have dreams, vice presidents may devise plans, deans and department heads may attempt to put those plans into action, but without the backing of faculty members, nothing will happen, according to Bates[42].

Another reason that contributed to the collapse of many online education institutions was the inability of educators to grasp that there are differences between teaching and learning in online and face-to-face environments[43]. In many

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[38] Marcus, S. (2004). Leadership in distance education: Is it a unique type of leadership? A literature review. *Online Journal of Distance learning Administration*. Retrieved from http://www.westga.edu/~distance/ojdla/spring71/marcus71.html

[39] Bernard, R. M., Abrami, P. C., Lou, Y., Borokovski, E., Wade, A., Wozney, L., & Huang, B. (2004). How does distance education compare with classroom instruction? A meta-analysis of the empirical literature. *Review of Educational Research, 74*(3), 379–439.

[40] Shelton K., Saltsman G. An administrator's guide to online education. - Greenwich: Information Age Publishing, 2005.

[41] Carlson S., Carnevale D. Debating the demise of NYUonline. 2001. http://chronicle.com/free/v48 /i16/16a03101.htm

[42] Bok D. Business lessons for education leaders. Harvard Business School, 2003. https://hbswk.hbs.edu/archive/derek-bok-business-lessons-for-education-leaders

[43] Arenson, K. (1998, October 7). N.Y.U sees profi ts in virtual classes. *The New York Times.* Retrieved from http://www.nytimes.com/1998/10/07/nyregion/nyu-sees-profi ts-invirtual-classes.html

cases, educators simply transmitted lecture notes from the conventional classroom to online students, under the idea that this would be sufficient. However, research has shown that a well-designed, documented, and organized online course that encourages active participation with the students is critical for success[44]. Carlson and Carnevale argue that online pedagogy is not the main reason for the initial failure, but rather that a lack of institutional support for the faculty and a lack of leadership with a knowledge of online education were additional factors in the failure to launch the program. It has been reported that the most common complaints from faculty regarding online education are (1) a lack of understanding of this method of teaching, (2) a lack of institutional support, and (3) a fear that the quality of education in the online environment will suffer as a result of this method of teaching.

To summarize, when nonprofit institutions sought to increase profits by entering the online marketplace through the creation of subsidiaries and partnerships in 1998, they did so at the expense of the fundamental principles of educational quality, institutional governance, and project planning, all of which were overlooked. New technological developments, according to Derek Bok [45],

While universities have tremendous power and the capacity to enhance teaching and learning, the credibility and integrity of the institution of higher education will be jeopardized if they continue to seek a profit and commercialize their education. Moreover, he believes that universities must make investments in the development of new technologies and the use of such technologies to enhance the quality of education that we deliver[46].

§ 1.2. Digitalization, its challenges and perspectives

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[44] Dykman C. A., Davis K. C. Online education forum—part three: A quality online educational experience. 2008. - p. 281–289; Gaytan J., McEwen B. C. Effective online instructional and assessment strategies. 2007. - p. 117–132; Palmer S. R., Holt D. M. Examining student satisfaction with wholly online learning. 2008. - p. 101–113.

[45] Bok D. Business lessons for education leaders. Harvard Business School, 2003. https://hbswk.hbs.edu/archive/derek-bok-business-lessons-for-education-leaders

[46] Kentnor H. Distance Education and the Evolution of Online Learning In the United States. 2015.

Technology in education

Since the introduction of television in the 1950s, there has been a lively debate over the appropriate use and integration of educational technology into learning contexts, including classrooms and training settings. When televisions were first introduced into the classroom, they were heralded as a revolutionary piece of equipment. Video streaming, on the other hand, will most certainly have a greater influence on education than television in terms of innovative visual technology [47]. A similar wave of acceptance and controversy has happened with new technical advancements throughout the years, but the usage of computers has sparked the most heated debate and acceptance in recent history. In order to demonstrate the benefits (or downsides) of technology over conventional learning environments, many studies have been conducted, particularly in the case of computer-assisted training in the 1980s and 1990s, the results have been mixed or unfavorable[48]. With the possibility for computers to be connected together through the Internet, the topic has become much more heated than it was before. In an effort to determine whether learning format had a stronger influence on student learning accomplishment, a large number of academics performed studies. Traditional teaching and learning settings that did not include technology were often pitted against schools that did use technology. More recently, Tamim et al. (2011)[49], in their comprehensive meta-analysis, provide persuasive data that integrating computer technology in the classroom has benefits over conventional onsite (face2face) training that does not use technology.

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[47] Ligato L. YouTube is crushing cable TV, according to Google. Huffington Post, 2015. ; Ofcom. TV streaming services overtake pay TV for first time. 2018. https://www.ofcom.org.uk/about-ofcom/latest/media/media-releases/2018/streaming-overtakes-pay-tv

[48] Clark R. E. Reconsidering research on learning from media. 1983. - p. 445–459; Kozma R. B. Learning with media. 1991. - p. 179–211.

[49] Tamim R. M., Bernard R. M., Borokhovski E., Abrami P. C., Schmid R. F. What forty years of research says about the impact of technology on learning: A second-order meta-analysis and validation study. 2011. - p. 4–28.

Since initiatives favoring the integration of technology in classroom settings have received negative reviews in some research circles, the study conducted by Tamim and colleagues is particularly significant. The study aims to establish that there is little or no significant difference in terms of the impact of technology on student achievement[50]. Tamim and her team of researchers conducted a synthesis of the results of 25 different meta-analyses spanning forty years of research measuring the effectiveness of computer technology integration in educational contexts in order to discover the impact of technology on student achievement when compared to educational contexts where technology is not used. According to the findings of a sample of 109,700 people (from 1,055 research included in the final 25 meta- analyses) who participated in formal academic environments such as elementary, secondary, and tertiary courses, technology has more positive impacts than negative ones. Results also show that technology utilized as a support to training has more favorable benefits than technology used for direct education, which is a promising development. The implication of this is that technology is more useful as a tool than as a teacher who can take over for an instructor. This is consistent with other definitions of educational technology, which describe it as "a vast array of modalities, tools, and techniques for learning," rather than as a singular thing. Therefore, its efficacy is determined by how effectively technology assists instructors and students in achieving the targeted educational objectives"[51]. Technology as a tool will be discussed further in the following sections, as it is an important guiding principle even for digital teaching and learning technologies. By doing so, we can avoid the temptation of using technology in educational contexts simply for its own sake, rather than for the benefit of the learner or instructional leader. Educators should be aware that boosting education via digital technology is not

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[50] Twigg C. A. Innovations in online learning: Moving Beyond No Significant Difference. The Pew Learning Program. 2001. https://www.immagic.com/eLibrary/ARCHIVES/GENERAL/RPI_US/R011107T.pdf

[51] Ross S. M., Morrison G. R., Lowther D. L. Educational technology research past and present: Balancing rigor and relevance to impact school learning. 2010. - p. 17–35.

a new occurrence in the field of education. Even if terminology and phrases become widely understood and accepted, or if they are replaced by new ones, this does not necessarily imply that the meaning of what is stated has changed. Technology advances often result in the introduction of new words and jargon. Before considering the impact of digitalization in education, it is necessary to consider the terms that have been used in the past in order to describe the integration of technology leading up to this current descriptor, which are: e-learning, online learning, blended-learning, mobile learning, and so forth. For the purposes of teaching and learning, all of them are considered to be alternate formats or contexts. As we began with ICT enhanced instruction and computers, advances in ICT allow us to consider alternative spaces for education, and the labels or names used to describe these spaces or environments reflect defining characteristics that are frequently technological (use of ICT) and geographical in nature (distance from the location of instruction).

E-learning

Policy makers needed flexible definitions of e-learning in order to effectively manage and lead educational initiatives at regional, regional and national levels. E- learning as a term was quickly adopted by the general public but was not clearly defined. Some definitions were so broad that almost any activity making use of ICT was identified as e-learning.

Online learning

Online learning, which is considered a subset of remote learning (Ally 2008)[52], is often used as a broad word to refer to educational settings that make use of information and communications technology (ICT), computers, and the Internet. As defined by Ally, "online learning is comprised of a number of terms

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[52] Ally M. Foundations of educational theory for online learning. In T. Anderson & F. Elloumi (Eds.), Theory and practice of online learning. - Athabasca: Athabasca University, 2008. https://ustpaul.ca/upload-files/DistanceEducation/FOUNDATIONS_OF_EDUCATIONAL.pdf

that are commonly used to describe it. These terms include e-learning, Internet learning, distributed learning, networked learning, tele-learning, virtual learning, computer- assisted learning, web-based learning, and distance learning."

All of these words suggest that the student is separated from the tutor or teacher, and that the learner is working alone. The student accesses the learning materials via the use of some type of technology (often a computer) that the student interacts with the tutor or instructor and with other learners via the use of technology students with other students, and that some type of assistance is offered to them. The most significant contrasts between conventional face-to-face educational contexts and online learning environments are as follows: online learning, often known as e- learning, is characterized by the absence of constraints such as time and space or geographical distance. It is dependent on how successfully it assists instructors and students in achieving the targeted educational objectives"[53]. Learning technologies may assist in avoiding the temptation of employing technology in educational situations only for the sake of technology, rather than for the benefit of the student or the instructor's purposes. It is important to stress that boosting education via the use of digital technology is not a brand-new occurrence in the field of education. As concepts and phrases become more widely used and understood,

When words are accepted or are replaced by new ones, it does not necessarily follow that what is expressed (in the description) is correct. In terms of substance, this is also a first. With each new technological innovation comes the introduction of new terminology and phrases. The use of jargon has increased. It is necessary to examine the influence of digitalization on education in order to comprehend its significance. It is also crucial to evaluate other phrases that are used to represent technological integration that are leading to up to and including the present description, which includes e-learning, online learning, blended

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[53] Ross S. M., Morrison G. R., Lowther D. L. Educational technology research past and present: Balancing rigor and relevance to impact school learning. – p. 17-35.

learning, and distance learning Learning on the go. All of them are considered alternate formats or venues for educational purposes. As we began with computer-assisted training and improved instruction, technological advancements have continued. The use of information and communications technology (ICT) allows for the consideration of alternate educational venues, as well as alternative labels or titles. The descriptive terms used to characterize these areas or situations reflect distinguishing qualities that are often seen as technical (the use of information and communications technology) and geographical (distance from the location of instruction).

Blended learning

Currently, blended learning (an educational approach that combines online digital media with traditional classroom teaching methods) has gained a great favor. This approach creates a new avenue to improve the pedagogical skills and further professional development of ESL (English as Second Language) teachers Blended learning can help address a number of instructional challenges while creating a more engaging and effective teaching environment using technology. Blended learning was introduced as an antidote to the blue-chip choice between traditional classroom teaching on the one hand and 100% online, self-paced learning, a pattern that evokes George Lucas's futuristic sci-fi vision of education. It aims to blend the best of both worlds; as flexible and convenient as online but a personal, live service like that traditionally delivered face-to-face.

It allows to provide ESL students with personalized, differentiated instruction, which is likely one of the reasons teachers employed blended learning in a classroom. This is where online platforms provide a range of resources, from video to interactive exercises and reading materials for students to access and go through on their own timelines. This personalized methodology minimizes differentiation because differential proficiency levels are handled more easily in connection with

ESL classroom setting, of making sure that every student receives correlative help as to succeed.

In addition, blended learning introduces digital literacy skills that are becoming more significant in a technology-oriented era. ESL teachers can help students by incorporating digital tools in their instruction so that the student becomes more comfortable and proficient with technology, which is a skill required for both academic life as well as many jobs currently available.

A winning blended learning implementation needs to be nurtured and constructed.

1. Defining the learning objectives of course These should then drive the selection of online and face-to-face activities so that every component contributes to those outcomes. Teachers need to know how these two components will fit together and complement one another when creating a blended curriculum. This requires capitalizing on the benefits, and reducing the drawbacks of each form. For instance, some models could be the flipped classroom where students do not have to understand online exercises and therefore engage in more interactive activities because they are provided with theoretical abuses outside face-to-face moments. Combining face-to-face sessions with online teaching, also known as a hybrid learning model.

Figure 1.1 Comparing Blended Learning Models

Model	Description	Benefits
Flipped Classroom	Online pre-class activities, in-class hands-on learning	Enhances interaction, promotes active learning
Hybrid Learning	Alternates between online and face-to-face sessions	Flexibility, regular in-person interactions
Supplemental Online	Online activities supplement face-to-face instruction	Reinforces learning, flexible access

2. Ongoing professional development for implementation of blended learning is also extremely important, particularly around ESL teachers. Schools and more generally in education, there should be continuing professional development opportunities for all school staff like workshops, mentoring experiences as well as group work with other teachers. Creating communities of practice will provide a more nurturing atmosphere in which like-minded teachers can exchange experiences and resources, as well improve upon their competencies.

It must receive basic training on blended learning including theoretical underpinnings, advantages and practical exploration. This would involve providing practical training to teachers in the use of different technological toolkit and platforms along with how to design a blended curriculum. For example: Workshops, Online courses and Mentoring.

Advanced professional development is equally important. Examples of these could be workshops around a given theme, peer-collaboration opportunities, communities or practice or conferences. Offering technological support, like help desks and resource libraries, can also assist teachers in adapting to digital tools.

Blended learning has the potential to revamp ESL teachers' pedagogy as well as their professional development. This provides teachers with the ability to take on innovative, more student-centered approaches using technology and online tools that can benefit both students learn better as well experience a higher degree of job satisfaction.

The flipped classroom model proves to be an effective approach. Students complete online activities like watching videos or reading articles there. It enables to use the face-to-face time for interactions and hands-on activities, like group-based discussions as well as project work. While not what I am doing last, this latter model specifically works well in the ESL classroom (for added language practice outside of class and more authentic interactions inside the classroom)

Figure 1.2 Professional Development Activities for ESL Teachers

Activity	Description	Benefits
Workshops	Practical sessions on blended learning strategies	Hands-on experience, immediate application
Online Courses	Flexible, self-paced learning on various topics	Convenience, depth of knowledge
Mentoring and Coaching	Pairing with experienced mentors	Personalized support, practical advice
Professional Learning Communities (PLCs)	Structured groups focusing on specific topics	Collaboration, shared best practices

3. Online communication and collaboration tools in blended learning environments also provide a space for students to meet, discuss, share ideas ad work together. ESL teachers could craft ready-made projects where students must collaborate virtually and offline to achieve certain tasks or come up with solutions. Make Language Real is a series of projects designed to foster genuine communication and collaboration.

As an accompaniment, blended learning encourages the use of formative assessments to track progress and give students feedback when needed. Quizzes, polls or discussion boards can help educators monitor their students comprehension level and provide them with additional support. Finally, teachers may use this ongoing assessment placed to improve instruction and apply interventions they have available for struggling learners.

For ESL, teachers also get a lot of professional development when they do blended learning programs. Blended learning fosters the life-long pattern of continuous education and reflection, which allows teachers to grow in practice by gaining new skills within teaching and staying up-to-date with all advances that occur so frequently. Blended learning environments encourage educators to network and share knowledge about their practices, which can foster a sense of professional community and support.

Figure 1.3 Benefits of Blended Learning for ESL Teachers

Benefit	Description
Enhanced Digital Literacy	Improved skills in using technology and digital tools
Innovative Teaching Methods	Adoption of student-centered and interactive approaches
Continuous Professional Development	Ongoing learning and skill enhancement
Collaborative Networks	Building professional communities and support systems

Blended Learning in Case Studies

Case studies Case Studies are examples of blended learning at work and provide the most instructive information about what you can achieve with a BL program. Blended Learning can be designed to meet diverse contexts from higher education unique case studies

A flipped classroom in an adult ESL program Case Study 1

To foster better language proficiency and engagement in an adult ESL program, we turned to the flipped classroom model. These included students completing some online demonstration/tutorial activities, and working through a series of interactive exercises prior to coming into face-to-face classes. This practice came with the benefit of being able to do fun and engaging activities in class - like group discussions, real-world problem-solving tasks, role-play simulations to name a few.

The results were significant. In communication, students made significant strides in language learning. More engaged and motivated, that is more active language use in class, resulted from frequent interaction on a practical level. Teachers also expressed more satisfaction in relation to their practices and observed more dynamic, efficient teacher-student interaction.

Flipped Classroom Model in Adult ESL Program

Example 2: Online PD for ESL Teachers

A school district that launched an online professional development program for its ESL teachers who needed to learn blended learning strategies. The way it worked was that teachers took a series of online courses, webinars and connected via various virtual collaboration platforms to share resources and experiences. It gave teachers the opportunity to take in professional development at their convenience and on a schedule that worked for them.

The impact was profound. Teachers reported vast improvements in their skills and ability to incorporate technology into lessons. At the same time, the initiative created a community for teachers to support and learn from one another. In sum, the online professional development program increased teachers' level of self-efficacy and perceived competence in using blended learning strategies.

Case Study 3: The Impact of Hybrid Learning in a High School ESL Program

At a high school ESL program, they switched to hybrid learning model. The decision was to have students in classes three days per week and online activities two other days. These online activities featured multimedia resources, interactive exercises and formative assessments to consolidate the face-to-face taught content. During the face-to-face sessions, we did things that were near impossible to do online - group discussions, presentations and work on projects.

With the hybrid learning model, students could access material on their own time in conjunction with support from teachers. It worked, and student doing better - more proficient language levels, more engagement. Teachers also expressed that the process of teaching as a whole is much more rewarding and easier with this tool.

High School ESL Program Hybrid Learning Model
Challenges and Concerns

Blended learning has many advantages but there are also challenges and considerations to take into account when implementing it. Making certain everyone has a computer or the tools needed to access class remains vital. Schools have to come up with solutions for digital equity by giving students resources and help if they struggle getting the technology.

Some of the teachers are not well prepared to implement blended learning. But all urgent plans have to include the hard part: initial and ongoing meaningful professional learning on developing digital literacy skills for staff, complete with instructional strategies. Back up schools with proper, professional development programs and on-going teacher support.

It is also hard to make a blended curriculum that aligns effectively. Instructors need to think carefully about how online should be married with face-to-face so that the blend makes sense and is driven by learning practices. Creating student interest in a blended learning experience can be rather difficult, and must rely on creativity as well as personal knowledge of the person you are teaching.

Table 5 Challenges and Solutions in Blended Learning

Challenge	Solution
Access to Technology	Provide resources and support to students
Teacher Preparedness	Comprehensive training and ongoing professional development
Curriculum Design	Careful planning and integration of online and face-to-face components
Student Engagement	Interactive and engaging activities tailored to students' needs

Blended learning holds great promise for supporting ESL teachers and revolutionising their instruction. It offers (and combines) ON-LINE & LIVE instructions, so it is flexible; convenient and can also make the instruction personalized Fosters active learning, improves student engagement and helps develop digital literacy

Blended learning has the potential of transforming ESL teaching for learners while assisters them get best out. It needs careful preparation and nuanced understanding in concept with layering approach to integrate technology, design curricula using adaptive software, teacher training. Professional development and support should be available to ensure the success of blended learning. Blended learning provides a hopeful approach to improve ESL instruction and support the professional growth of these teachers, though there are challenges that need addressing as well.

Challenges in digitalization of education

Schmidt and Tang[54] claim that there is a significant problem with dropout rates in online or elearning settings that are distance-based, and this is a problem that has been for some time. Although this cannot be attributed to a single factor, Schmidt[55] summarizes the research and provides an overview of potential contributing factors such as a lack of face2face contact with the instructor and fellow students, a lack of meta-cognitive skills, a lack of self-discipline, and a lack of motivation, as well as being unprepared, untrained, and therefore overwhelmed with the amount of information and requirements of online learning environments[56]. The "lack of high-quality online learning material, as

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[54] Schmidt J.T., Tang M. Digitalization in education: Challenges, trends and transformative potential. Führen und Managen in der digitalen Transformation. 2020. - p. 287–312.

[55] Schmidt J. T. Preparing students for success in blended learning environments: Future oriented motivation and self regulation. E-Dissertation, Ludwig-Maximilians-Universität München: Fakultät für Psychologie und Pädagogik. 2007. https://www.semanticscholar.org/paper/Preparing-Students-for-Success-in-Blended-Learning-Schmidt/73e30c4abe6ef23f9bb52795be4350809c608116

[56] Berge Z. L. Active, interactive, and reflective learning. 2002. - p. 181–190; Kerr M. S., Rynearson K., Kerr M. C. Student characteristics for online learning success. 2006. - p. 91–105; Peters O. Digital learning environments: New possibilities and opportunities. 2000. https://www.researchgate.net/publication/26455154_Digital_Learning_Environments_New_Possibilities_and_Opportunities

well as the provision of training and support to instructors and trainers in conjunction with organizational changes in educational institutions" are other possible explanations[57].

When it comes to face-to-face and online learning settings, Schmidt[58] highlights common issues that affect both face-to-face and online learning environments differently in terms of interaction, control, flexibility, and control. When it comes to learning settings, interaction takes place at many different levels, including interactions between instructors and students as well as interactions among students among themselves. It is critical for a learning environment to have the ability to provide chances for engagement while also having the capability to do so. Functionality is less crucial in face-to-face situations than it is in technologically enhanced ones. However, with the evolution of video and streaming technologies, live contact and communication is now available even in online situations, when before this was only possible in traditional settings. From an administrative standpoint, flexibility relates to the way in which education is delivered (including scheduling and pacing of the learning tasks within a classroom or institution). The term "flexibility" refers to the ability to be flexible with both time and learning support: time spent in the classroom teaching, generating learning tools, and preparing curriculum.

When it comes to how the mix of learning activities is achieved, students are seldom given the freedom and control that they deserve. Although this is a significant task, the authors present a number of different degrees of difficulty, including time and location (which refers to the benefits of doing simultaneous and sequential activities through online technology), and the levels of route and

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; Stark R., Mandl H. Web-based learning in the field of empiricanl research methods (Research Report No. 59). - Munich: Ludwig Maximilians Universitдt, Institute for Educational Psychology, 2003.

[57] Debande O. ICTs and the development of eLearning in Europe: The role of the public and private sectors. 2004. - p. 191–208.

[58] Schmidt J. T. Preparing students for success in blended learning environments: Future oriented motivation and self regulation. E-Dissertation, Ludwig-Maximilians-Universität München: Fakultät für Psychologie und Pädagogik, 2007. https://www.semanticscholar.org/paper/Preparing-Students-for-Success-in-Blended-Learning-Schmidt/73e30c4abe6ef23f9bb52795be4350809c608116

pace (relating to the order or sequence of content exploration and the speed at which this exploration occurs).

Secondly, it is necessary to consider promoting social interaction: Social interaction is generally facilitated through initial face-to-face meetings, and the challenge is how to extend and maintain interaction over an enlarged psychological and communication space (referred to as transactional distance, where social interaction becomes more difficult as the transactional distance increases), which includes both group and two-way interactions.

Thirdly, personalization and monitoring of students' learning progress are commonly organized through online instructional activities, but it is more important to encourage the use and development of self-regulation skills (including organization, discipline, time management, technology use, and self-efficacy to control students' own learning processes) in order for students to be more successful in their learning.

Activities and implementation

When it comes to instructional activities that foster an affective learning climate, little attention is paid. However, this is critical because online environments lack the spontaneous authenticity of face-to-face environments, which can lead to learner isolation, a decrease in motivation, and even drop-out. To encourage favorable attitudes toward the course and teacher, it is necessary to take steps to ensure that learners feel protected, welcomed, and appreciated throughout their time in the course.

As previously said, the digitalization of education and the following digital transformation of education present a number of difficulties that must be addressed at the same time on a number of different levels within education. However, the growth of digital technology has created a new basic issue that has repercussions across the whole system. If the use of digital technologies in teaching and learning is to be sustained, it is necessary to have an innate

understanding of and fluency with them. In a world where digital technology is integrated into all parts of the educational system, and where these technologies continue to be dynamic and constantly evolving, it is necessary to incorporate digital literacy in the educational system. When it comes to digital literacy, the decision on how it will be achieved is difficult. Will it be taught as an extra-curricular, add-on competence (which would require parents and students to choose whether to participate or not), will it be integrated into the curriculum offerings, or will it be automatically acquired through learning by doing and regular use?

These essential choices may have a significant impact on the execution of digitization plans, as shown by worldwide instances. According to Seow and colleagues (2019)[59], examples from several nations that are presently attempting different approaches to digital liability are provided.

Literacy in education is being improved through the integration of computational thinking skills: England is credited with being the first country to integrate computational thinking into the k-12 curriculum; Finland has integrated learning objectives relating to computational thinking, programming, and problem- solving skills in real-world contexts into a new national curriculum at the primary and lower secondary levels; Japan is planning to make computer programming compulsory at the primary level by 2020; and the United States is promoting computational thinking in education through the integration of computational thinking skills.

Germany's new digital strategy (BMBF 2019)[60], which includes education, targets all levels of education (see Fig. 16.2) with programs and activities aimed at the development of digital competence. The following are some examples: In this context, "digital literacy" refers to the capacity to actively choose, analyze,

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[59] Seow P., Looi C., How M., Wadhwa B., Wu L. Educational policy and implementation of computational thinking and programming: Case study of Singapore. In S. C. Kong & H. Abelson (Eds.). - Singapore: Springer, 2019. - p. 345–362.

[60] BMBF. Digitale Zukunft: Lernen. Forschen. Wissen. Die Digitalstrategie des BMBF. Bundesministerium fьr Bildung und Forschung. 2019. https://www.bmbf.de/upload_filestore/pub/BMBF_Digitalstrategie.pdf.

and utilize media, information, and other resources for your own work and communication processes, as well as to create and distribute your own digital material to others. Digital systems, algorithms, and programming are fundamental concepts covered in this class ("coding"). It is essential that digital literacy be taught as a conceptual component of general education and is integrated into a complete ethical and value education. In the digital era, knowledge is critical for doing self- determined action." The author writes on page 18 that:

In most European countries, digital literacy (including media literacy and digital competence) is taught alongside regular educational offerings, sometimes as part of the curriculum, sometimes as part of extra-curricular activities and other forms of additional training and course offerings, and sometimes as part of the curriculum. The rate of technological development and the resulting increased industry involvement (including the push and pull factors of industry as efforts to realize a match between new job profiles and appropriate skill levels of fresh graduates from programs and training increase), as well as the adoption of technologies by society in general, have an impact on how education evolves and develops. Although having technology and access to it does not ensure fluency or aptitude for successful application, educational institutions must make judgments about how to actualize, execute, and support the acquisition and development of digital literacy in order for it to be effectively implemented.

Teaching and learning settings that have been improved by digital technology are referred to as digital learning environments (DLE). The requirement for new and enhanced learning management system (LMS) technologies will continue to exist in the foreseeable future. While many LMS tools and services are available as open- source solutions, Blackboard and Canvas are two of the most popular fee-based options. Open educational resources (OER) are a movement that advocates for the democratization of educational materials by providing free access to them. The growing popularity of MOOCs – massive

open online courses – as a learning format is an example of open educational resources (OER).

Pedagogy is often regarded as the sole feasible method for ensuring the success of MOOC operations. When we say flipped learning, we are referring to the inversion of traditional learning settings, where homework is accomplished at school and classwork is completed at home. The flipped classroom method moves the burden from the post-class to the pre-class period, necessitating the development of new strategies for assuring student involvement and participation. Equity and access are two important considerations that must be taken into account at the administrative level. Other studies (Ottestad and Gudmundsdottir 2018)[61] point to the necessity for teacher and instructor development, stating that fluency, literacy, and skill with the selected technology are all required for effective instruction.

Assessment

The advantages of digital technology for effective assessment of learning and success are many, but they are not always fully realized. A current trend in educational assessment is the "constructive alignment" method[62], which uses constructivist learning theory to support learner responsibility and engagement by aligning teaching and assessment activities for an optimal instructional design that fulfills three principles: (1) clear statement of curriculum or unit objectives in terms of content-specific levels of understanding that imply appropriate performances; (2) teaching methods require structural alignment; and

(3) assessment methods require structural alignment. According to Biggs, the learning goals and expectations for how to achieve them must be clearly conveyed (for example, via the use of criteria reference).

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[61] Ottestad G., Gudmundsdottir G. B. Information and Communication technology policy in primary and secondary education in Europe. In J. Voogt et al. (Hrsg.), Handbook of information technology in primary and secondary education. Springer International Publishing, 2018. - p. 1-21.

[62] Biggs J. Enhancing teaching through constructive alignment. 1996. - p. 347–364.

Digital technology offers many exciting opportunities to improve and extend assessment procedures in education, allowing educators to evaluate learners on the level of knowledge and skills they have acquired, as well as the state of their dispositions and attitudes, over the course of a learning period. According to a study conducted by Timmis, Broadfoot, Sutherland, and Oldfield (2016)[63], technology enhanced assessment is defined as any use of digital technologies for the aim of improving formal or informal educational assessment for both formative and summative reasons. Current developments in assessment mostly rely on digital technology for data management and school improvement programs for assessing and benchmarking school performance, with the exception of certain traditional methods. In their study, they have discovered that very little innovation takes place at the individual (micro) learner level in order to improve learning success and procedures. Existing assessment tools or formats that use technology, such as e- portfolios (documentation of individually created multi-modal artifacts), crowd- sourcing (such as electronic voting systems), online badges (an alternative accreditation system in online and virtual environments), and social media communication (such as blogs and wikis) are forms of assessment with technology, but they are not progressing in a way that puts control of assessment in the hands of the learner.

There are advantages and disadvantages to using data-driven assessment in education. As an assessment tool, learning analytics, which is the collecting and processing of huge educational data sets, may give an objective and deeper understanding of student development, but it can also be easily distorted and misled. Additionally, there are ethical challenges related with learning analytics and big-data, including permission, data protection, ownership and management of information, all of which are linked with the ethical duties educators have toward children and young people.

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[63] Timmis S., Broadfoot P., Sutherland R., Oldfield A. Rethinking assessment in a digital age: Opportunities, challenges and risks. 2016. - p. 454–476.

Another area in which analytics may be used is in the realm of corporate decision-making. Educational institutions should adopt a more business-like approach to the applications and uses of big data, according to Seres, Pavlicevic, and Tumbas [64], particularly to discover hidden patterns underlying performance in different areas, track admissions, optimize enrolment, manage grants, enhance academic advising, and so on. Their study recognizes the benefits of leveraging Big Data in higher education institutions as a method of gaining competitive advantage, and they demonstrate that this is becoming more achievable via the use of open source platforms and technologies. Higher education institutions can assure a long- term future via the analysis of data collected from students and faculty.

Yet, there is an ongoing development of this and what the future appears to be outstanding. New breakthroughs in Augmented Reality/Virtual Reality technology are taking place in technical domains such as engineering and medical education. Transporting physical laboratory settings or artifacts into a virtual space where learners are no longer separated by barriers of time and space makes learning more interactive, flexible, and cognitively rich. Considering that experts from around the world are encouraged to participate or contribute to share expertise and special applications that are state of the art, this makes learning more interactive, flexible, and cognitively rich overall. A virtual learning environment is worth more than a thousand words when compared to the descriptions found in textbooks[65].

The integration of electronic platforms in English language teaching (ELT) has gained significant attention in recent years. This literature review aims to provide an overview of the existing research and scholarly works related to the

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[64] Seres L., Pavlicevic V., Tumbas P. Digital transformation of higher education: Competing on analytics. Conference proceedings, INTED2018 Conference, 5–7 March 2018, Valencia. 2018.
https://www.researchgate.net/publication/323895016_Digital_Transformation_of_Higher_Education_Competing_on_Analytics

[65] Schmidt J.T., Tang M. Digitalization in education: Challenges, trends and transformative potential. Führen und Managen in der digitalen Transformation. 2020. - p. 287–312.

use of electronic platforms such as ZOOM, Learning Management Systems (LMS), Big Blue Button, Google Classroom and Lumi in ELT. It explores the advantages, challenges, and best practices associated with these platforms, shedding light on their impact on language education.

Advantages of Electronic Platforms in ELT

Numerous studies have highlighted the advantages of integrating electronic platforms in ELT.

LMS platforms have also received attention for their role in ELT. Researchers have emphasized the benefits of structured learning environments, asynchronous learning opportunities, and continuous assessment facilitated by LMS platforms[66]. The ability to customize content and promote collaboration through LMS has been found to foster student engagement and learning outcomes[67] .

Big Blue Button has been recognized for its interactive features and contribution to language instruction. The platform's interactive whiteboard, screen sharing, and chat functionalities have been shown to enhance comprehension, provide authentic language exposure, and promote written interaction. Collaborative activities facilitated by breakout rooms have been found to improve communication and critical thinking skills.

Google Classroom and Lumi, as the adaptive learning and assessment platforms, has demonstrated its strengths in personalized language learning. Research has highlighted the platform's ability to adapt content and provide targeted feedback based on individual learners' needs[68]. The automated

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[66] Pang, Y., & Khor, E. T. (2020). The effectiveness of LMS as an e-learning tool for language proficiency enhancement: A case study in Malaysia. International Journal of Distance Education Technologies, 18(2), 22-37.
[67] Lee, M. H., & Liu, L. S. (2022). The effect of collaborative and interactive synchronous virtual classroom instruction on EFL college students' English speaking performance. Computer Assisted Language Learning, 1-21
[68] *Exploring students' digital informal learning: The roles of digital ... Available at:*
https://www.tandfonline.com/doi/full/10.1080/0144929X.2020.1752800

assessment features and data analytics capabilities have been found to support progress tracking and inform instructional decisions[69].

Challenges and Considerations:

While the advantages of electronic platforms in ELT are evident, there are challenges and considerations to be addressed. Studies have highlighted the need for teacher training and support in utilizing these platforms effectively. Technical issues, such as connectivity problems and audio/video difficulties, have been identified as challenges that can hinder the learning experience (Shao & Crook, 2021)[70]. Privacy and data protection concerns have also been raised, emphasizing the importance of complying with regulations and ensuring the security of student information[71].

To address the challenges associated with electronic platforms in ELT, researchers have proposed best practices and recommendations. Professional development programs and ongoing support for teachers have been emphasized to enhance their technological proficiency and pedagogical skills[72]. Clear communication with students regarding platform usage, expectations, and guidelines has been found to be crucial for a smooth learning experience [73]. Implementing privacy settings, data protection measures, and promoting responsible online behavior have been recommended to ensure the safety of students' digital resources[74].

The reviewed literature demonstrates the growing significance of electronic platforms in ELT and their potential to transform language education. The

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[69] *Research and development of monitoring system and data ... - sage journals*. Available at: https://journals.sagepub.com/doi/full/10.1177/1729881419898017 (Accessed: 05 July 2023).

[70] Shao, M., Hong, J.-C. and Zhao, L. (2022) *Impact of the self-directed learning approach and attitude on online learning ineffectiveness: The mediating roles of internet cognitive fatigue and Flow State*, *Frontiers*. Available at: https://www.frontiersin.org/articles/10.3389/fpubh.2022.927454/full

[71] Sarah I. Hofer, Nicolae Nistor, Christian Scheibenzuber, Online teaching and learning in higher education: Lessons learned in crisis situations, Computers in Human Behavior, Volume 121, 2021

[72] *Hew, K. F. (2021). Teachers' readiness and capacity for online teaching during COVID-19. Journal of Information Technology Education: Research, 20, 267-294.*

[73] Pham, Q.D., Dao, N.N., Nguyen-Thanh, T., Cho, S. and Pham, H.C., 2021. Detachable web-based learning framework to overcome immature ICT infrastructure toward smart education. *IEEE Access*, *9*, pp.34951-34961.

[74] Park, M. and Son, J.B., 2022. Pre-service EFL teachers' readiness in computer-assisted language learning and teaching. *Asia Pacific Journal of Education*, *42*(2), pp.320-334.

advantages of the platforms in facilitating communication, collaboration, personalized learning, and assessment have been highlighted. However, challenges such as technical proficiency, infrastructure, privacy, and data protection need to be addressed. Best practices and recommendations have been proposed to ensure effective integration and maximize the benefits of these platforms.

Conclusion to Chapter One

This last part of this analysis on the history and nature of distance education in general, digitalization specifically with a little more emphasis will lead everyone into concluding about how much both have been relentlessly transforming to fit exactly what society together with its subjects needs. Advances in technology continue to pioneer the evolution of distance education from the early days with correspondence courses, right through to more modern online and blended learning models; which have aimed at reducing access barriers, improving pedagogical practices as well as integrating rapidly developing technologies.

Initially, distance education was simply an implausible idea to widen the access of basic and higher level educational opportunities from urban-based university classrooms. Everything started with the establishment of correspondence courses delivered by post to those people who had been too distant or socially outcasted (for example, Isaac Pitman's proposals in 1840). One of the most revolutionary aspects of this form of education was to democratize and decentralize learning - a fact that is just as true today, with distance education at its very core.

In the 20th century, as radio and television came into wide use, a new format was developed based on those media. By the early 1900s, broadcasts were being used for educational programs to reach a broader audience and this was considered a step in changing distance education delivery. But as explained in the

episode, these created richer digital content delivery controlled with audio and visual which increases student engagement over written word. At the same time, they brought in new challenges of maintaining educational quality and interactivity issues that educators are still facing using newer technologies.

The internet and digital technologies turned distance education into more than just a one-way delivery of content, creating instead an interactive learning experience. This brought about the rise of online learning platforms with their own features for communication, multimedia content delivery and interactive learning. This redefinition of the social and pedagogical roles of educators (more active) and learners (shift from being passive receivers to more empowered agents in their learning), replacing rote education with how to learn, building digital citizenship capacity.

The advent of the MOOC (massive open online course) in 2008 has brought scalability and access back to center stage while enrolling millions more students around the world. We have already seen how education can be disseminated at scale to a worldwide audience, (University of Phoenix) but that should just be the beginning. However, this scale comes with a new set of obstacles - namely maintaining educational quality at volume and personalizing learning on the grandest stage of them all while facilitating parallel access to necessary technological resources.

The digital education landscape, a field where today various challenges confront with critical importance to resolve. This starts with the requirement of preserving and strengthening higher quality academic offers. With universities continuing to move their content online, educators are turning towards blended learning models and the like as these frameworks can be implemented into any subject matter or region of the world. This entails designing holistic accreditation mechanisms that bring digital education within its purview.

Second: the digital divide looms large. As technology has advanced, not everyone can log in to the web with confidence (and a computer). The gap not

only determines their capacity to enroll in educational programs but will compromise effectively educating low-tech access students who may be left behind. To overcome this, the governments along with institutions and technology providers need to work together in harmony be it any level of infrastructure or economic situation; so that digital education is easily accessible by all.

Another challenge is around student engagement and retention in online programs. Students can also feel less connected and even lazy by only having bare, online minimum interactions compared to the open face-to-face approach to communication. Supporting student engagement and success in online learning environments requires a nuanced collection of strategies, with developing compelling content, creating a community-based atmosphere through interaction/discussion capabilities (and preferably video), and ensuring students receive responses from instructors when they post questions or request feedback all being critical approaches.

Looking to the future, upcoming technologies - such as artificial intelligence; virtual and augmented reality; advanced data analytics- have been heralded for unlocking even larger possibilities of distance education. AI has helped in personalized learning and adaptive paths tailored to every student individually. VR and AR are effective tools that offer interactive hands-on learning; What virtual reality & augmented provide to you is an engaging environment where simulations can be made of things like surgery or how machinery operates without having the risk being associated with a negative occurrence (such as death / injuries)

In addition, data analytics can be leveraged to analyze learning behaviors and outcomes that in turn lead to informed decisions on curriculum modifications, teaching pedagogies or additional student support services. This approach uses data to help educators recognize students that are most at-risk and intervene earlier with the strategies offered to improve their situations.

The evolution of distance education from correspondence courses to online and blended learning environments is a testament to the dynamism and resilience of an industry that inherently thrives on leveraging advancements in technology as well as capturing changing societal trends. Yet the mission at its core, to bring inclusive education experience for anyone and everytime still remains. Read More: Through the Digital Transformation from ODL to TQT The learner is at CenterAs we journey through all these digital transformations learning in higher education I believe that need of an hour is a pedagogy which needs of future, where technology mediated not for sake but really adding values and treasure experience. The on-going nature of this evolutionary process necessitates ongoing research, innovation and stakeholder dialogue to ensure that distance education continues the promise as a potent means of individual and social betterment.

CHAPTER 2. THE TRANSFORMATIVE ROLE OF ELECTRONIC PLATFORMS IN ENGLISH LANGUAGE TEACHING: AN IN-DEPTH EXAMINATION

§ 2.1 The Role of Electronic Platforms in ELT

For the past few years, in English Language Teaching (ELT) routine, the exploitation of e-platforms has been considerably increased. These platforms have changed traditional learning and trying to make the new provisions more useful for the learners and educators. In this chapter we hope to investigate the complex role electronic platforms play in ELT, and to consider their benefits, challenges and implications on educational practice more broadly. Our aim is to survey current research and real-world examples in order to offer a broad view of how these platforms are influencing the future of language education.

Another important effect of the use of digital platforms in ELT is the access and flexibility that they afford. In traditional classroom settings, students are limited by time (class hours) and space (classroom), and this can restrict learning

for some students. But electronic platforms do not live within those constraints; they offer access to a plethora of resources on demand from anywhere. For example, Duolingo, and Rosetta Stone are some of the platforms which enable English learners to practice English in their own comfort and from all the type of locations. This flexibility is particularly useful for non-traditional students (i. e., full-time working adults or residents of underserved, rural areas). This flexibility is consistent with research by Johnson and Aragon[75] indicating that is caters to an array of learning needs and schedules, improving student retention and completion rates. Such as the scenario of a single mother in the rural region who has to work which leaves her little choice but to study into the late hours of the night when her children are already asleep. With the likes of Duolingo, she actually has the way to take lessons and practice English when time permits, so that language learning is something that falls inside her busy life rather than outside of it.

Additionally, online platforms work wonders for interactive learning and engagement. What is true is that traditional teaching material is without question effective (after all, it has had centuries to stand the test of time), but because traditional lessons can be as dry as a bone at times, young students have difficulty engaging with it. Unlike print materials, electronic platforms include visual/audio learning such as videos, animations, or interactive quizzes for a more lively, engaging learning environment. Take for example the inclusion of gamified aspects in online platforms such as Kahoot! Students are also known to be more motivated and engaged while using Quizlet. As Mayer[76] argue that multimedia learning helps students retain and understand more because it addresses different learning style, and different content form to maintain students' attention. Think of a classroom where the students are using Kahoot! to review vocabulary. The competitive nature of the game, along with instant feedback, makes it a fun

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[75] Johnson, S.D. and Aragon, S.R., 2003. An instructional strategy framework for online learning environments. New Directions for Adult and Continuing Education, 2003(100)
[76] Mayer, R.E., 2009. Multimedia learning. 2nd ed. Cambridge: Cambridge University Press

learning activity which also forces the students to become more involved in the experience and it increases their vocabulary memory.

Electronic platforms also help in improving personalization of the learning and engagement Classrooms in schools follow typically a uniform size and there is no one way which can fit every student. On the other hand, adaptive learning technologies can customize the range of educational content for students based on their individual learning pace and style. For instance, Edmodo and Blackboard uses algorithms to analyze student performance and maps that to personalized feedback and dedicated resource. This approach reduces the likelihood of knowledge shortfalls being overlooked so that support can be provided to every student for that individual to be successful. Personalized learning, as identified in Kulik and Kulik[77] also provides specific instruction leading to meaningfully improved educational results. Some students who are weaker with grammar may be given more exercises on grammar as well as exercises and tutorials specifically with respect to their weaker areas, while students with stronger vocabulary may be given more difficult exercises regarding vocabulary.

Electronic platforms also facilitate collaborative learning. A traditional classroom provides time for group discussions and work, but it can be bound by time and space. Synchronous work is more challenging for students in far-flung corners of the world, sink the tools available (like Zoom) provide for creating a private, dedicated space anyway (other students will log in from elsewhere, but the family back home needs to be outside the line of sight and within earshot...a tricky combination). Students interact synchronously and asynchronously with each other via online forums, chat rooms and other collaborative tools, such as Google Doc or Slack, reinforcing the sense of a learning community In Garrison and Anderson[78] terms these kinds of collaborative learning environments have a

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[77] Kulik, J.A. and Kulik, C.L.C., 1991. Effectiveness of computer-based instruction: An updated analysis. Computers in Human Behavior, 7(1-2), pp. 75-94.
[78] Garrison, D. R., & Vaughan, N. D. (2008). "Blended learning in higher education: Framework, principles, and guidelines." John Wiley & Sons.

beneficial impact and create a learning environment that increases the learner's overall learning experience; this is due to building critical-thinking skills, problem-solving skills as well as the exchange of knowledge. Students in separate countries could for instance work on a project together through Google Docs, sharing insights into their cultural background and applying the English they learn in a real-world setting.

Moreover, electronic platforms tend to be cheaper than conventional educational methods. Physical materials are costly, and so are the travel and classroom maintenance costs, particularly in organizations that have limited resources. They are able to curtail these costs by providing digital assets which can be recycled as well as updated and redistributed by using electronic platforms. For instance, open educational resources (OER) like those provided by services such as Khan Academy and Coursera deliver top-tier educational materials for free or on the cheap. According to Stacey[79] the use of OER may produce economies of scale and thus cost reductions for students and education providers, ultimately lowering the cost of education for everybody. By going digital, an institution eliminates a considerable amount of printing and distribution costs, and students get the resources for free, or at a much more reduced cost, than if they were print.

Blended learning, a combination of face-to-face and online approaches, has shown successful application in ELT. The practice of blended learning employs the techniques of both modes into one, lending to an individual-oriented, temporary comprehensive model For example, a hybrid course might have students come to class to engage in activities or discuss with other students in person, and then complete assignments and other readings through the online course. It lets instructors more effectively use class time for activities that require face-to-face engagement and gives students the opportunity to review materials

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[79] Stacey, P., 2010. The economics of open educational resources. Educational Technology, 50(6)

and practice skills on their own time. A remedy is found with blended learning as it associates teaching as a medium to exchange entirely the entire learning approach with Graham's study which pointed out that improved student outcomes could be achieved using blended learning as it offers multiple forms of engagement capitala and aids reinforcement of learning via multiple channels. There was a language school in Germany, which incorporated online modules in their classroom sessions, and they found that students were more satisfied and learning outcomes had improved.

While this carries a number of benefits, the use of electronic platforms in ELT also raises some challenges and caveats. The most prominent problem is faced here is technical issues and digital divide. The primacy of a decent technological infrastructure is also an issue concerning e-platforms, as the effectiveness of the afore-described platforms falls strictly based on the status of an accurate internet access and a brand-new kit. However, not all these resources are available to everyone, especially students in low-income or rural areas. The "digital divide" it creates can worsen existing academic disparities, leaving students who lack the necessary technology at a further disadvantage. Warschauer, points out that these disparities should be addressed to ensure that such advantages are enjoyed by all students. A student in a rural location may struggle to partake in online classes due to poor internet connectivity and may not be able to access digital resources, putting them at a disadvantage compared to an urban counterpart with reliable internet.

Moreover, quality and credibility of online resources are also difficult to guarantee. There is a lot of information on the internet, not all of it accurate or reliable. There is a risk that students will find material of a quality too low or even false, and this can both hinder their learning and lead to false beliefs, so perhaps this is not the best way after all. That is why it is so important for educators to ensure that they examine, evaluate, and deliberately choose and include the

resources they use. Means et al. Garavand et al.[80] mention the importance of the serious supervision of the quality control and provision of appropriate tools and educational standards for the provision of training products online. For instance, a teacher can offer to approve video sites on Edmodo, which the students then post to, or a teacher might post vetted resources and/or assignments on Edmodo so that students can visit the site and get the most accurate and pertinent information.

The training and support of teachers are important factors for integrating electronic platforms effectively. The use of these platforms is effective unless the teacher is already at the level of being able to carry it out and incorporate it into teaching. Teachers need appropriate training and continuing professional development in order to use electronic platforms efficiently. Among other things, Lawless and Pellegrino[81] claim that professional development programs need to focus on technical and pedagogical aspects to enable teachers to fully exploit electronic platforms. Examples include how to create compelling multimedia presentation or use Big Data tools to monitor students' achievements - all concepts taught in professional development workshops.

Also, keeping students motivated and disciplined is not easy when learning from at home. Online learning often lacks the structure and accountability of the traditional classroom, leaving students less motivated and engaged. There is evidence to show that good time management skills and self-regulation are key to achieving successful educational outcomes in online higher education[82] and that educators should guide and support students to acquire these essential skills. For instance, an online course might offer lessons on tasks like time management

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[80] Houshang Garavand , Maryam Abdollahi Moghadam, saeideh sabzian - The effect of online educational, social and cognitive presence on academic satisfaction with mediation of loneliness in gifted female students of the second high school 2020

[81] Lawless, K.A. and Pellegrino, J.W., 2007. Professional development in integrating technology into teaching and learning: Knowns, unknowns, and ways to pursue better questions and answers. Review of Educational Research, 77(4)

[82] Artino, A.R., 2008. Understanding online learning satisfaction in the military: A structural equation model. Educational Psychology, 28(7), pp. 757-774.

and goal setting that can also help students address the challenge of how to be successful in a less formal setting.

Another factor that is just as critical is privacy and security concerns Security is obviously an imperative where student data is concerned (and ensuring students are responsible internet users). Schools and educators should consider the laws related to privacy and protective strategies of personal information an effective one. According to West[83], privacy policies and security protocols are critical to protecting student data and preserving confidence in e-learning products. A school might, for instance, use a secure learning management system (LMS) like Blackboard, where there are privacy protections in place and in keeping with data protection regulations.

Thus, due to these pros and cons, there are multiple objectives addressed by this monograph. Its first episode, with content from Mark Pegrum, aims to Investigate how electronic platforms are currently being used in ELT. As you look through the current studies as well as specific cases, you can understand the status of these platforms in the language education community. Jones[84], for example, explored different types of electronic platforms and how those are being implemented and integrated in ELT (which forms a part of his situational analysis), including both positive and negative features. It also showed a case study of a language school in Spain, where the introduction of electronic platforms led to an increase in student participation and an improvement in language skills - these are simply examples of how one can benefit from such tools if they are thought out in advance.

Secondly, elaborate on the advantages and disadvantages of electronic platforms in ELT. Through the above advantages and challenges, we aspire to provide a discerning picture of the potential and limitations of these platforms in

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[83] West, S.M., 2012. Privacy and security in online learning environments. Journal of Educational Technology Systems, 41(2)

[84] Jones, L., 2019. Current trends in electronic platforms for ELT. International Journal of Language Teaching, 15(4)

language education. Smith[85] provides a comprehensive literature review and urges greater precaution, particularly weighing pros versus cons when deciding to utilize electronic platforms. For example, digital platforms can increase engagement and accessibility, though require expensive technology and training that may be prohibitively costly for certain institutions.

It also aims at recommending ways to effectively use electronic platforms in ELT. Finally, the aim of this chapter is to propose concrete suggestions for educators and policymakers, providing them with guidelines on how to operationalize these tools effectively in language education. Brown[86] argues that instructor training, curation standards, and student supports can improve the value of digital platforms. For example, a holistic training program for teachers which combines technical and pedagogical training, can help ensure good preparedness for those with access to these tools.

In summary, the monograph outlines some areas of future research to develop the use of electronic platforms in ELT. We sought to identify gaps in existing research and areas for further study, in the hopes that researchers will continue to refine these tools over time. Looking to the future, Williams[87] pinpoints a range of other research areas that he would like to have seen covered in this special issue; for example, what impact electronic platforms are having long term on language proficiency and the rise of adaptive learning technologies. In this context, for example, an interesting line of research that can be carried out in future is to examine the utility of employing Artificial Intelligent (AI) to offer feedback and discourse to language learners thereby revolutionizing method in which language teaching is to be undertaken.

Blended learning, combining traditional face-to-face instruction with online learning, has emerged as an effective method in ELT. Blended learning

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[85] Smith, R., 2020. Balancing the benefits and drawbacks of electronic platforms in ELT. Language Learning & Technology, 24(3)

[86] Brown, H.D., 2021. Recommendations for integrating technology in language teaching. Journal of ELT Practices, 32(2)

[87] Williams, J., 2022. Future research directions for electronic platforms in ELT. Journal of Applied Linguistics, 39(1)

combines features from both modalities, creating a more adaptable, personalized way to learn. An example of a blended learning model would be when students physically attend classes to participate in interactive activities and discussions and work on assignments and access resources online. Students are then free to review and practice at their own pace online, coming to class for far more productive use of class time in activities that require interaction. Graham[88] research suggested that blended learning can contribute improving student outcomes, it offers more ways of active participation, and it solidify the learning process by using multiple communication routes. As a case in point, a language school in Germany effectively combined online modules and in-person classroom sessions, leading to better student satisfaction and increased language abilities.

While there are many benefits to using electronic platforms in ELT, there are also challenges and things to consider. Another big problem is technical problems and digital divide. There are many advantages to electronic platforms but these require reliable connectivity, so they may be more effective if they are designed with this in mind. Although, the same cannot be said for all the students, especially those living in poor, and remote regions. Such a digital divide may exacerbate present educational inequalities, with students no longer being able to keep up with others if they lack the proper tools. Warschauer[89] highlights the need to end these disparities so that every student may enjoy the benefits of electronic platforms As an example, a child in a rural area that has no means to connect to Zoom or digital resources online is put at a disadvantage compared to his peer in the cities with predictable internet connection.

Ensuring online resources are of high quality and credibly is another difficulty. The internet is full of information, some of it true, and some of it untrue. The students risk encountering substandard or inaccurate materials, which

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[88] Graham, C.R., 2006. Blended learning systems: Definition, current trends, and future directions. In: C.J. Bonk and C.R. Graham, eds. The Handbook of Blended Learning: Global Perspectives, Local Designs. San Francisco: Pfeiffer

[89] Warschauer, M., 2003. Technology and social inclusion: Rethinking the digital divide. Cambridge, MA: MIT Press.

results in learning barriers and misconceptions. Educators often search for proper free resources to use in their classrooms. Means et al. This emphasis underscores the necessity for quality control measures that are established to ensure online learning materials are of high standards and conform to criteria established in an educational environment. An educator could use a platform such as Edmodo to disseminate to vetted resources and assignments to students - so they know where to go for help and can trust that they're reading verified and correct information.

The training of teachers, along with the teachers support is also an essential component of successful use of electronic platforms. The success in this regard also depends on some of the necessary degree Use of technology is in the hands of the teachers and better proficiency of my digital teaching. Teachers who are not properly trained or supported with professional development will likely find it difficult to use digital tools in a way that benefits their teaching. Lawless & Pellegrino[90] state the need for professional development programs that include technical skills along with issues of pedagogy to ensure that teachers use the electronic platforms to their full potential when they teach using it. Examples include professional development workshops that train educators in how to create multimedia-rich presentation or to utilize data analytics to track educational progress of students.

It is difficult to keep students motivated and on task using an online learning environment. Online learning does not have the structure and accountability of a traditional classroom and can result in less motivation and engagement. Artino[91], for example, found that self-regulation and time management are necessary skills to be successful in online learning so educators might benefit in providing support and guidance on how to work with these skills. As one example, an online course might include modules on time management

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[90] Lawless, K.A. and Pellegrino, J.W., 2007. Professional development in integrating technology into teaching and learning: Knowns, unknowns, and ways to pursue better questions and answers. Review of Educational Research, 77(4)

[91] Artino, A.R., 2008. Understanding online learning satisfaction in the military: A structural equation model. Educational Psychology, 28(7), pp. 757-774.

and goal setting to help students prepare for studying in a less-structured environment.

Another essential item to be aware of are privacy and security features. It is a must to remain vigilant in protecting student data and creating a safe online learning space. Educators and schools have to comply with privacy laws and protect personal data. The need for strong privacy policies and security measures to protect students and preserve faith in electronic platforms is emphasized by West[92]. For instance, a school could employ a safe learning management system like Blackboard LMS, which comes with privacy protections and respects data protection regulation.

Among these opportunities and challenges, this monograph has multiple objectives. Firstly, to explore the current practices of using electronic platforms in ELT. To better understand how language learning is realized through them, the paper reviews articles and case studies. Take for example, a thorough investigation of a number of electronic platforms and their uses in ELT appears in Jones[93], which reveals successful applications along with areas that could use refinement. The e-mail is still a global communication medium, but the e-learning platform has tightened its grip on that medium with all the power of an invasive species: for instance, in a study of a language school in Spain that integrated an electronic platform in its curriculum, there were substantial improvements in both the interest of the students and their level of proficiency in the language practiced, which testifies to the potential of these tools when effectively used.

Second, this monograph aims to determine the e-platform pros and swindles in ELT. The purpose of this post is to take into consideration the advantages as well as the challenges discussed so far in order to see a more clear picture of the impact of these platforms on language education. Smith[94] critically

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[92] West, S.M., 2012. Privacy and security in online learning environments. Journal of Educational Technology Systems, 41(2)

[93] Jones, L., 2019. Current trends in electronic platforms for ELT. International Journal of Language Teaching, 15(4)

[94] Smith, R., 2020. Balancing the benefits and drawbacks of electronic platforms in ELT. Language Learning & Technology, 24(3)

reviewed the literature, suggesting that the potential costs and benefits of electronic platforms should be weighed before deciding to use this medium. Some of these may be the need for electronic platforms that can improve engagement and accessibility, but they are costly in technology and training and, hence, place a burden on the implementation by many institutions.

Finally, this paper seeks to make some general suggestions for successful integration of such electronic platforms into ELT. Finally, to inform educators and policymakers, practical suggestions for the effective integration of these tools into language education will be provided. Electronic platforms can be more effective if teacher training, quality control, and student support are blended, according to Brown[95]. This could be related to the creation of a complete training program for teachers, both in terms of technical aspects and pedagogical strategies, so that educators are highly trained to apply these tools in their teaching.

This monograph concludes with suggestions for research that could extend the application of electronic platforms into ELT further. We highlight existing research gaps to inform further research and development to continue improving these tools. Williams[96] highlights opportunities for future work arising from the accelerated deployment of electronic platforms, in which continued work on the games already in use and newer work on adaptive technologies. One could be that, going forward, studies could test the bounds of what artificial intelligence (AI) could do in terms of giving language learners feedback and support on a personalized basis thus paving the way for the future delivery of this technology in language education.

To sum up, to say that the electronic platforms support ELT is valid, but the nature of the role they operate is quite rich and diversified. With these new platforms comes a multitude of benefits such as increased accessibility and

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[95] Brown, H.D., 2021. Recommendations for integrating technology in language teaching. Journal of ELT Practices, 32(2)

[96] Williams, J., 2022. Future research directions for electronic platforms in ELT. Journal of Applied Linguistics, 39(1)

flexibility, interactive and personalized learning, collaborative opportunities, and more cost-effective. But they also carry a number of complications -- technical difficulties, quality control, professional development for teachers, student engagement, and privacy issues. This monograph is dedicated to the goal of understanding the potential of these tools to impact language education, both in terms of the use of electronic platforms at present, the strengths and weaknesses associated with these products, the potential for implementing electronic platforms effectively, and future research pathways to gain a more complete understanding of these processes. The potential of electronic platforms to revolutionize ELT is great, provided it is debated upon and researched further to help it realize its full potential with its accompanied countertendencies.

§ 2.2 Learning Management Systems (LMS) in ELT

The pedagogical landscape has been revolutionized with the infusion of technology in education. Some of the major breakthroughs here include the use of Learning Management Systems (LMS) - which are essentially content delivery, tracking, and management platforms. Within English Language Teaching (ELT), LMS platforms have proven extremely useful, including Moodle, Blackboard, and Canvas. These systems are equipped with features that improve and facilitate teaching and learning.

LMS provide an interactive and customizable platform that allows multiple instructional strategies, improved assessment processes, and personalized learner experiences, They empower educators to develop and provide content, track and assess student participation and performance. K-12 Schools, Higher Education institutions and Corporate training settings have all made use of LMSs due to their flexibility and scalability[97].

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[97] Fattah, S. F. E. S. A. (2019). The Effectiveness of Adopting Learning Management System Tools to Enhance Formative Assessment in Teaching English for Saudi University Students. Available at: https://consensus.app/papers/effectiveness-adopting-learning-management-system-tools-fattah/ae2d33c090955fe29c4af97e59d9ab88/?utm_source=chatgpt

Improved accessibility is one of the most prominent benefits of LMS platforms. These systems enable the students to have access to the course materials overnight making the learning possible and on self pace. This is especially helpful for language learners who need more time to use and re-examine the contents. This means that they quickly have access to course lectures, readings, assignments, and other resources whenever needed, thus ensuring the efficient continuity of learning.

Another important benefit of the LMS platforms is interactive learning. This feature set includes quizzes, discussion boards, and multimedia resources, which help keep students invested in their courses and make learning more engaging. These tools support engagement and active learning as students practice and hone new language skills. Discussion forums, for instance, allow students to join in course-related conversations, bettering their comprehension and promoting application...

The LMS platforms available facilitate personalized learning. These features enable educators to customize the course by editing course content and structure in line with learning objectives as well as the need of our students. The options for customization range from the use of multimedia to the use of interactive activities and formative assessment to cater to different learning styles. This customization is key for every language learner, regardless of their level of proficiency. For example, more advanced learners can be more challenged while beginners would stay at a lower intensity.

LMS platforms require effective evaluation and feedback. They allow for quick evaluation through automating quizzes and assignments and delivering instantaneous replies. For learners, this instant gratification is crucial, as it enables them to correct mistakes and progress. LMS platforms can assist formative assessment, which ensures that student performance is monitored and used to change instructional approaches. The data educators pieced together can be used to create tables and graphs for real-time assessment.

But the successful adoption of LMS on ELT does not take place without problems. Technical difficulties, slow internet speed, and lack of understanding of LMS functionalities can harm the desired use. This can be solved by giving proper training to both teachers and students and providing good technical support. Making sure that every user is comfortable using the platform and have what they need to start using the LMS goes a long way in making a good use of LMS. Weekly technical audits and utilize the Google Tag Assistant

Also, engaging students on an online platform can be difficult. Solutions may involve relying on interactive materials, the introduction of multimedia content, and inspiring autonomy via group participation by means of discussion forums, group activities etc. Meaningful interactions with students' successful interaction with students using high quality instructional design and a rich toolkit of teaching methods to interest and motivate students. Engaging features are polls and live Q&A sessions, scheduled meetups with the team, and frequent check-ins with regular updates of the app on more channels.

The quality of content is another main point. All LMS content needs to be of premium quality, structured well, targeted and holds the reader's attention. Materials should be created by educators to best suit the learning outcomes and needs of the students. To make the learning experience interesting, it is necessary to utilise different types of contents such as videos, infographics, interactive activities etc.

The following are some statistical data and visual (rather a graphical) representation to understand the effect of LMS on ELT. The following charts and figures illustrate some of the most important dimensions of LMS deployment and learning gains for language education.

Figure 2.1 Student Engagement and Performance

A comparison of student engagement and performance on an LMS integrated English language course The data presents a dramatic betterment in

classroom engagement and academic accomplishment, validating the fact that LMS platforms are highly beneficial towards improving education. Metrics such as participation in discussion forums, completion rates for quizzes, and average grades before and after LMS implementation.
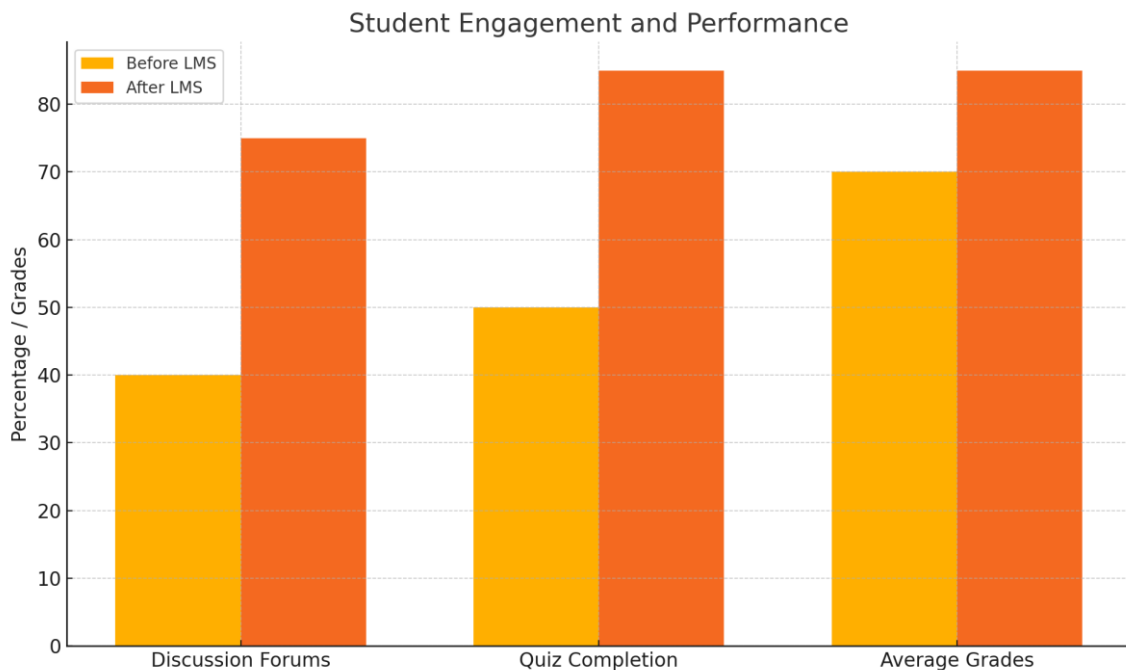

Figure 2.1 Comparative Analysis

This charts provides a comparison between the student satisfaction and learning outcomes using traditional teaching approaches and LMS-based teaching approaches. These numbers show that students using LMS platforms experience higher satisfaction rates and grow further in their studies than students that have not integrated technology as part of language learning. The analysis reviews feedback from students in regards to materials, interactivity, overall learning experience.
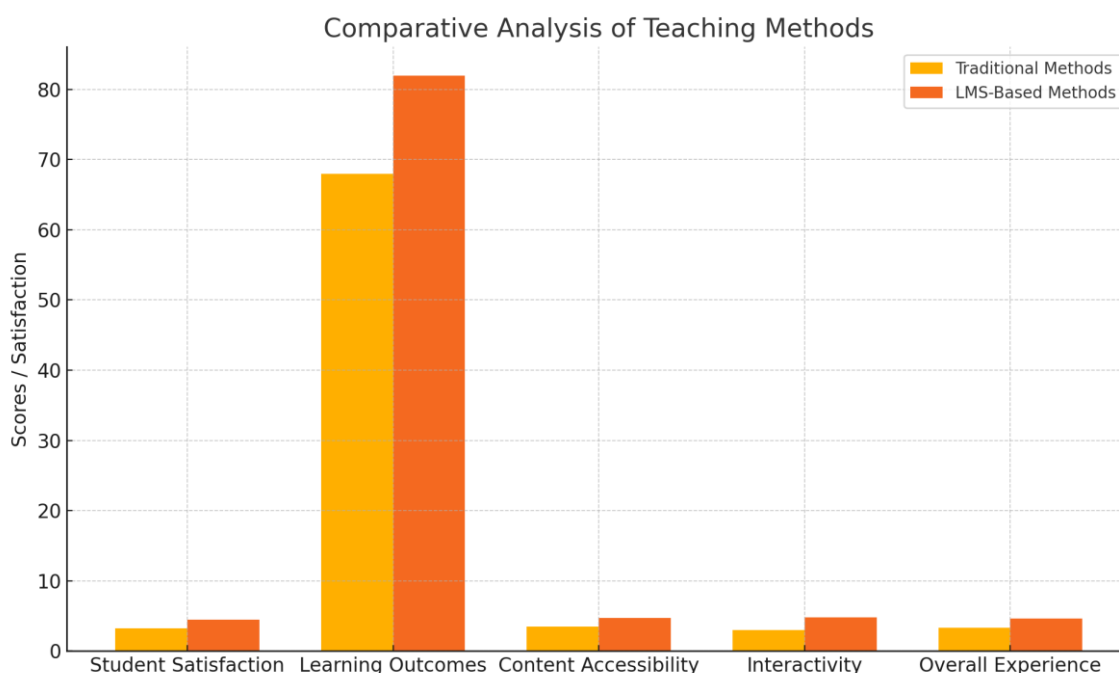
As well as these graphics, images and art can be used to help blow up these concepts and add even more context. Often, graphical representation aids in the easiest way to tell how students can connect to LMS, types of interactive activities that can be included and how personalized learning paths work thus a few examples like students working with LMS platforms through images, snaps of interactive activities and visuals of personalized learning paths are more beneficial for demonstrating practical application and benefits of LMS in ELT.

The use of LMS in ELT not only enriches the teaching and learning process but also enables the learners to hone the 21st-century life skills. In modern times, these platforms encourage digital literacy, self-directed learning, and the development of collaboration. This type of virtual interactive course would have been impossible a few years ago, but the increasing capabilities of LMS open many opportunities to deploy more engaging educational experiences that will be beneficial not only for those who wish to learn a language but any other academic discipline.

So, Learning Management Systems have brought a paradigm shift in the way English Language Teaching is being done, by creating a flexible, interactive learning environment that is truly personalized. With the support of different

instructional strategies, to successful assessments, to their potential for improving the experience of teaching and learning, they offer so much to the educators today that they cannot be missed. With solutions in place to the challenges LMS faces challenges and other best practices adopted, educators can increase the exploitation of LMS and enhance language teaching quality.

§ 2.3 Enhancing ELT with BIG BLUE BUTTON

Big Blue Button (BBB) is an open-source web conferencing system primarily used for online learning. Real-Time Audio, Video, Slides, Chat, and Screen Sharing Foregrounding breakout rooms, polls, and a multi-user whiteboard, it will be the perfect platform for interactive and collaborative learning spaces. Finally, BBB has been successfully integrated in Educational environments, especially in English Language Teaching (EL) as web-based learning to make the learning process more efficient[98].

Big Blue Button (BBB) is of the tools which makes it easier for you to carry out interactive teaching which will certainly supports some instructional strategies in ELT. The platform has nice breakout rooms that make very effective collaborative learning. They provide the opportunity for students to work in smaller groups and have individualized and targeted discussions. Such rooms are optimal for activities such as discussions, role-playing, and group projects, which are necessary to develop language skills in a community of learners[99].

BBB also has a multi-user whiteboard. It allows teachers and students to write, draw, and highlight on the documents together in real-time. It is a great tool for grammar exercises, vocabulary development, and even collaborative writing as feedback can be provided so quickly thereafter. The interactive whiteboard

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[98] Hartawan, I., & Subawa, I. P. (2021). ANALISIS KINERJA SERVER ELEARNING UNTUK PEMBELAJARAN SYNCHRONOUS BERBASIS BIG BLUE BUTTON DALAM MENDUKUNG PEMBELAJARAN DI MASA COVID-19. Available at: https://consensus.app/papers/analisis-kinerja-server-elearning-untuk-pembelajaran-hartawan/651d3afe6288531ca356d5038687f750/?utm_source=chatgpt

[99] Schmied, J. (2021). Remote online teaching in modern languages in Germany: responses according to audiences and teaching objectives. Available at: https://consensus.app/papers/remote-online-teaching-languages-germany-responses-schmied/d440cc2cc40b586982aafdd9c65b30ce/?utm_source=chatgpt

allows them to be more attentive, students can easily understand and absorb information easier than lecture-based teaching[100].

This can be in the form of real time polling/quiz sessions which can be performed during live sessions to constantly assess the students grasp and also keep the students engaged. This Type of tools gives the instant feedback and also indicates the areas clarifications if found. Al Hashimi[101] suggested that by embedding polls and quizzes into their lessons, educators can remain interactive and engage with their learners.

Top of this list is probably the importance of collaboration in language learning. Breakout rooms, in conjunction with other collaborative tools, enhance language learning by allowing students to engage in meaningful language-use scenarios. For example, role-playing can create real-life situations such as ordering in a restaurant, asking for directions, a job interview etc. These simulations encourage students to use language in a way that is practical and conversational, and to learn through doing[102].

Collaboration and designing presentation rooms for Group projects, talk sessions on ideas etc. This encourages collaboration, problem solving and real world use of language skills. Students use BBB's collaboration tools to rehearse and hold their presentations, which gives them a feeling of achievement as well as improves their speech.

Peer feedback and q2a are the skills of a good learner. Breakout rooms are useful to get students to review the work each other and provide feedback. This peer review process helps to enable the students to learn from other and hence improve their language skills through collaborative learning. It also prompts

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[100] Wardani, R., & Selfiani, S. (2023). The Students' Perception on the use of Blue button application in Teaching English for Tourism Course in Indonesia Student Micro Credential Program. Available at: https://consensus.app/papers/students-perception-blue-button-application-teaching-wardani/3c57a41b1b3458649245769387f58dfc/?utm_source=chatgpt

[101] Al Hashimi, Z. I. (2020). BIG BLUE BUTTON FOR E-LEARNING: THE EFFECT OF PRIVACY AND SUPPORT QUALITY. Available at: https://consensus.app/papers/blue-button-elearning-effect-privacy-support-quality-hashimi/1d2bbb1d00955645add0a1f036d45286/?utm_source=chatgpt

[102] Hartawan, I., & Subawa, I. P. (2021). ANALISIS KINERJA SERVER ELEARNING UNTUK PEMBELAJARAN SYNCHRONOUS BERBASIS BIG BLUE BUTTON DALAM MENDUKUNG PEMBELAJARAN DI MASA COVID-19. Available at: https://consensus.app/papers/analisis-kinerja-server-elearning-untuk-pembelajaran-hartawan/651d3afe6288531ca356d5038687f750/?utm_source=chatgpt

students to question their work and mention another possible way to improve it
[103].

To be sure, Big Blue Button has lots of advantages, but there are also some problems that we have to solve if we want to use it in the results-oriented case of the ELT. Technical stuff like connectivity issues, inability to adopt platform etc. which can impede use. Juilliard uses a combination of initial and ongoing training and technical support to manage these issues. Ensuring that all participants are comfortable with using the platform and resources needed to participate actively is a critical component of reaping the benefits of BBB[104].

Keeping online students engaged takes creativity and strategy. Use active learning strategies and diverse teaching methods to increase student engagement and participation (where possible, benefit from taking programs with interdisciplinary modules, with resources, and multimedia that are available for online access) It takes careful instructional design and the application of various teaching methods for students to remain interested and motivated, but real engagement can only happen when students actively participate in their learning. Scheduled check-ins, along with an interactive element like polling or Q&A can ensure a high level of audience engagement throughout the livestream. Virtual events and social interaction opportunities can be exploited to build a greater sense of community, providing a more interactive and responsive learning experience as well[105].

Thus, it's very important to have high quality interaction in online classes if you want language learning to be effective. Utilize break out rooms and student collaboration in measured ways to ensure they provide opportunities for rich

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[103] Wardani, R., & Selfiani, S. (2023). The Students' Perception on the use of Blue button application in Teaching English for Tourism Course in Indonesia Student Micro Credential Program. Available at: https://consensus.app/papers/students-perception-blue-button-application-teaching-wardani/3c57a41b1b3458649245769387f58dfc/?utm_source=chatgpt
[104] Muqaibal, N. (2020). The Influence of Security and Technical Quality on Intention to Use Big Blue Button for E-learning. Available at: https://consensus.app/papers/influence-security-technical-quality-intention-blue-muqaibal/16c949deea5350a4beae839c522163df/?utm_source=chatgpt
[105] Al Hashimi, Z. I. (2020). BIG BLUE BUTTON FOR E-LEARNING: THE EFFECT OF PRIVACY AND SUPPORT QUALITY. Available at: https://consensus.app/papers/blue-button-elearning-effect-privacy-support-quality-hashimi/1d2bbb1d00955645add0a1f036d45286/?utm_source=chatgpt

interaction and to also give timely feedback to students. Educators can encourage the learning process of their students, leading students to improve their language skills in a more interactive and collaborative way[106].

There are many case studies which show how Big Blue Button can be effectively used in ELT. In one study which took place in Indonesia, the use of BBB was studied in an English for Tourism course. Students liked the interactivity enabled by BBB, which made the learning resources easier to access and which interacted with students. In another study, written by Wardani & Selfiani[107], they consider the platform to be an educational technology that enables real-time interaction and collaboration which are essential components of language instruction.

Further research, then, was conducted in a study among German university instructors regarding the use of BBB to teach translation theory and technology. It was found that the collaborative tools and the live interaction featured an enhanced learning experience for the students from various backgrounds as well Use of breakout rooms and multi-user whiteboard was successful in promoting active learning and practical skills development[108].

In Oman, a project researched the impact of security and technical quality on the intention to use BBB for e-learning. The research pointed out the necessity to implement tough security policies, as well as improving technical support quality to increase the degree of satisfaction and contribute to the better engagement between users. These factors can be taken care of to make the most of BBB and to enhance the learning experience as a whole[109].

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[106] Schmied, J. (2021). Remote online teaching in modern languages in Germany: responses according to audiences and teaching objectives. Available at: https://consensus.app/papers/remote-online-teaching-languages-germany-responses-schmied/d440cc2cc40b586982aafdd9c65b30ce/?utm_source=chatgpt (Accessed: June 18, 2024).

[107] Wardani, R., & Selfiani, S. (2023). The Students' Perception on the use of Blue button application in Teaching English for Tourism Course in Indonesia Student Micro Credential Program. Available at: https://consensus.app/papers/students-perception-blue-button-application-teaching-wardani/3c57a41b1b34586649245769387f58dfc/?utm_source=chatgpt

[108] Schmied, J. (2021). Remote online teaching in modern languages in Germany: responses according to audiences and teaching objectives. Available at: https://consensus.app/papers/remote-online-teaching-languages-germany-responses-schmied/d440cc2cc40b586982aafdd9c65b30ce/?utm_source=chatgpt

[109] Muqaibal, N. (2020). The Influence of Security and Technical Quality on Intention to Use Big Blue Button for E-learning. Available at: https://consensus.app/papers/influence-security-technical-quality-intention-blue-muqaibal/16c949deea5350a4beae839c522163df/?utm_source=chatgpt

The following example is data and visual for the effect of Big Blue Button on ELT. Below, the tables and figures detailing the most salient dimensions of BBB are showcased in an attempt to add to the body of the knowledge of language learning and its benefits.

Figure 2.3 Student Engagements and Satisfactions

Based on the exercises of the English language course implemented with the use of BBB, student engagement and satisfaction. Importantly, the data shows the vast overall improvements in both engagement and satisfaction as a clear extenuation of BBB's impact on improving the efficacy of learning.

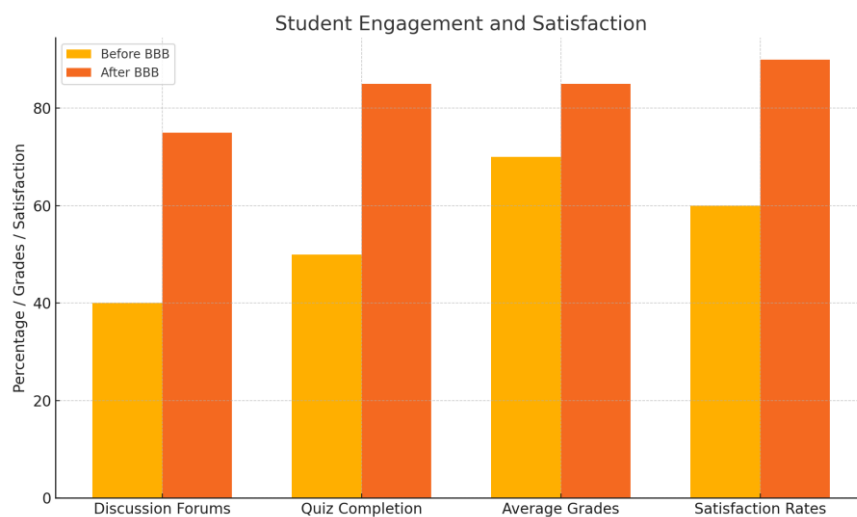**Figure 2.4 Comparative Analysis**

Comparative analysis This analysis presents the comparative study about traditional teaching and BBB-based teaching in student performance and quality interaction. According to the data, students using BBB had higher performing results and better interaction metrics, so it proved the benefits to have a language teaching on the integrated platform in this context.

Comparative Analysis of Teaching Methods
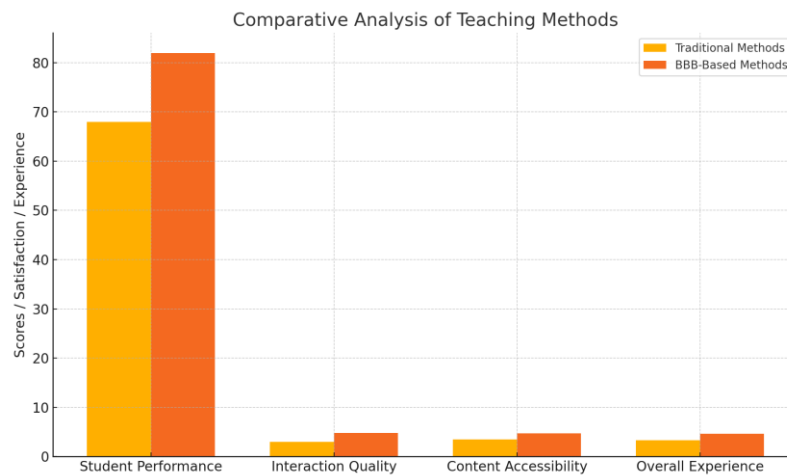
Conclusion to Chapter Two

The escalation of Learning Management Systems (LMS) within English Language Teaching (ELT) has come to be an unprecedented facet amid the transformative tapestry that is educational pedagogy; thus renovating classroom foundations across institutional lines. The process shift from chalk teaching to digital boards has converted the very way education took place from how it is taught, learned and evaluated. Moodle, Blackboard and Canvas etc LMS platforms has not made this shift an easy job however it also increased the teaching learning experience to larger extent. This conclusion attempts to wrap up the insights delineated, carefully examine how LMS have revolutionized ELT along with its pros and cons as we look ahead at a future educational technology canvass. Furthermore, LMS integration to ELT has various benefits catering numerous requirements and needs among learners as well as the educators. The main advantage is that students can access resources all day and at any location since people learn at different rates in various ways. This type of flexibility is especially helpful for students who need to hear or see something 5,6 even ten times before they can understand it and/or produce it correctly. LMS platforms make materials like lectures, readings and assignments constantly accessible features of learning.

There is also an increase in interactive learning through LMS platforms which has improved student engagement even further ELT. Using tools such as the quiz, multimedia resources and discussion board turn passive learning into active and interactive. Quite literally, these features make learning fun but they also make the act of self-taught conversation practice surprisingly new and effective directly after covering vocabulary or points... Instead, online discussion forums can provide a much-needed writing and argumentation practice space for students and multimedia resources can help develop listening skills.

Even more impressive, LMS customization capabilities allow teachers to build classes around the particular needs of their students. More advanced learners can be given harder materials and activities; beginners are encouraged to go slower while being supported. With this level of customization, every student receives the instruction they need to achieve their learning goals, so everyone is engaged in better learning at all levels of proficiency.

Despite the myriad advantages LMS incorporation has to offer for English teaching practices, it is not free from all challenges. LMS platforms have teething problems with technical challenges such as spotty internet access or general digital literacy. These concerns might be more acute in under-resourced educational settings. In the meantime, because online learning is not face to face once we do manage this physical distancing dilemma many of our students will continue as invisible millions and that can perhaps even more significantly impact motivation.

These challenges require extensive interventions for both teachers and students in the form of holistic training on important aspects. To be able to use LMS effectively, one must know its functionalities and more importantly how to incorporate it efficiently with the teaching-learning process. Some of the challenges to good implementation could be reduced by day-to-day technical support and user-friendly resources.

Also, creating a community and engagement within LMS can reduce isolation. Engage with group projects, live discussions and feedback from within the LMS to enable a highly engaged learning environment. These strategies serve not only to boost student engagement but also to model the cooperation and interactivity typical of in-person classrooms.

Looking into the future, as more and more is possible remotely using technology LMSs will play an even greater part in ELT. Finally, by integrating artificial intelligenceand machine learning (AI/ML), the content provided is constantly changing to better fit individual student needs. Further to this, the use of augmented reality (AR) and virtual reality (VR) within LMS platforms could change up how language learning occurs more widely by making language-practice environments that are as rich in content-contextuality, if not richer than traditional real-world tactical settings.

Additionally, the more advanced data analytics becomes, LMS can give teachers even further granular views into student performance to ensure they are directing their instructional strategies as best as possible. By leveraging this data-driven approach, we are able to increase the cost-effectiveness as well as efficacy of language training.

LMS platforms have impacted ELT greatly providing more equal access to learning and making it a less passive process; promoting student-led learning with the learner in control of both pace and focus. The advances would continue to have an impact on LMS in education, yet the challenges were found everywhere. Educators and technologists alike are working together to shape the future of ELT, enabling a more individualized, engaging and efficient educational journey for students around the world. As these winds of change blow, their focus must continually emphasize connecting with technology as a bridge, not serving to be an obstacle in the dynamic landscape that is language education.

CHAPTER 3. ADVANCING DIGITAL PEDAGOGY: THE IMPACT OF LUMI AND GOOGLE CLASSROOM

§ 3.1 Asynchronous Learning in the Digital Age: The Lumi Platform's Role and Impact

The origins of shifting learning from synchronous to asynchronous owes much to the nature of flexibility and self-transition as a development in education delivery & consumption. In this new age where the world is heavily influenced by digital transformations that demand remote and online education, platforms such as Lumi are crucial resources for educators and institutions to effectively meet these shifts. Lumi has been recognized by users for the user-friendly UI, broad functionality and commitment to supporting effective asynchronous teaching & learning interactions.

The aim of this study is to evaluate the usage of Lumi platform in an asynchronous learning environment. This paper analyses the basic features, advantages and challenges of the platform along with its impact on student engagement, collaboration as well as teaching approach. This can provide useful insights into the potentialities and challenges of using an asynchronous learning platform, specifically Lumi within today's educational landscape.

This style of education has become a more plausible way to educate over the past few years, especially with e-learning taking such heavy precedence in our current world. This method can be very versatile and accessible as well. This model allows students to access the course on their own and engage with content - different from conventional synchronous classrooms. This study aims to recapitulate important insights and findings from different sources with respect to asynchronous learning.

The flexibility of asynchronous learning is one major advantage - it lets students take control and organize their time in a much more effective way [110]. Sener and Okur[111] explain that asynchronous learning tailors to the needs of diverse learners who have varying schedules or responsibilities in addition to their academic interests. This adaptability is highly desired in adult education and continuing programs[112].

In a study by Means et al. Bee[113] noted that according to the results from a study of asynchronous learning, students can perform just as well in one environment as another. A study by Bernard and coworkers suggested that[114] shows that traditional face-to-face courses are often met with more attrition and lower rates of student participation than asynchronous online classes.

In addition, according to McKenna and Rees[115], asynchronous learning environments introduce learner autonomy and self-regulation in the learners as well. Khan[116] states students are presented with their learning objectives and have control over the rate at which they learn, in hopes to facilitate an internalization of student responsibility for academic success. Being self-directed, asynchronous learning is much more individually driven which mirrors many of the concepts associated with andragogy making it ideal for adult learners[117].

However, we must also recognize the hurdles of asynchronous learning. Without immediate access to timely touchpoints and quick turn-around time, some students may face challenges[118]. According to Kebritchi et al. In Ferguson

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[110] Simonson, M., et al. (1999). "Distance education: Definition and glossary of terms." Information Age Publishing.

[111] Sener, J., & Okur, B. (2019). "The advantages and disadvantages of asynchronous learning." International Journal of Research in Education and Science, 5(1)

[112] Salmon, G. (2005). "Flying not flapping: A strategic framework for e-learning and pedagogical innovation in higher education institutions." ALT-J, 13(3)

[113] Means, B., Toyama, Y., Murphy, R., Bakia, M. and Jones, K., 2010. Evaluation of evidence-based practices in online learning: A meta-analysis and review of online learning studies. Washington, D.C.: U.S. Department of Education

[114] Bernard, R. M., et al. (2004). "How does distance education compare with classroom instruction? A meta-analysis of the empirical literature." Review of Educational Research, 74(3)

[115] McKenna, S., & Rees, M. (2012). "The dimensions of learner autonomy: A conceptual framework for language learning motivation." Innovation in Language Learning and Teaching, 6(3)

[116] Khan, B. H. (1997). "Web-based instruction: What is it and why is it?" Educational Technology, 35(5)

[117] Knowles, M. S. (1980). "The modern practice of adult education: From pedagogy to andragogy." Cambridge, MA: Cambridge Adult Education.

[118] Stein, D. S., et al. (2016). "Online learning readiness among undergraduate students: Implications for online education." Nursing Education Perspectives, 37(2)

and Houghton[119], there is a suggestion that the absence of face-to-face interaction may lead to an experience of isolation and disconnection from educational community.

Over the past few years, huge advances in technology have changed lifquieas we know it for Internet learning and distance education. According to Means et al. According to Khadda and Mouza, the integration of multimedia beings, discussion boards as well as peer collaboration options in online programs have added a substantial advantage to digital business. Adaptive learning systems and Artificial Intelligence, with its ability to personalise the way content is delivered[120] have enhanced efficiency of asynchronous learning.

Asynchronous learning is a critical part of the design and evolution for modern education to overcome challenges due to the change rapidly forced during COVID-19[121]. Given ongoing debates among institutions and instructors to enrich their online pedagogical practices, it becomes important find out the best ones for a form of learning like asynchronous. This research is critical in the quest to increase student engagement and academic achievement more broadly.

What is Lumi? These features, along with the incredible user experience of using it for end-user buyers and sellers outside those institutions - have driven its massive adoption to help so many educators or Institutions improve executing Asynchronous Education.

Several features which enhance the asynchronous learning experience through Lumi include.

Instructors are able to easily upload course materials in a variety of formats (text, video, and interactive) on the Lumi platform which organizes them automatically. This flexibility makes it ideal for developing educational modules that are dynamic and interactive.

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[119] Kebritchi, M., et al. (2017). "Issues and challenges for teaching successful online courses in higher education: A literature review." Journal of Educational Technology Systems, 46(1), 4-29.
[120] Vygotsky, L. S. (1978). "Mind in society: The development of higher psychological processes." Harvard University Press.
[121] Hodges, C., et al. (2020). "The difference between emergency remote teaching and online learning." EDUCAUSE Review, 27.

Discussion Boards - These boards are significant because they allow important asynchronous discussions, students to ask questions, and can be a collaboration ground for projects. They help create that sense of community in learning even if the students never actually talk to each other at all in real time.

Lumi generates a plethora of evaluation tools like quizzes, assignments and peer assessments that help educators evaluate the progress student have made in their respective courses.

Analytics and Reporting: Teachers are given detailed overviews about student participation, engagement and the progress of their students so that educators can make informed decisions through this customized intervention.

Lumi was built with mobile Portability: Lumi is designed to run on their phone so that students can access course materials, engage in conversations anytime and anywhere.

The user-friendly interface of Lumi adds to this advantage, significantly reducing the amount of learning curve for instructors and students alike in their initial engagement. A good user experience will be improved by easy-to-navigate, intuitive instructions and are widely available resources. The requirement for ease of use is especially highlighted in asynchronous learning contexts, where pupils might not have instant access to teacher support.

There are many benefits that educators, schools and school districts will enjoy thanks to the introduction (and use) of LUMI as a platform for asynchronous learning. These benefits will illustrate the efficiency of the platform in helping modern education.

Ideally this works well for students who can consume course content, asynchronously at their own pace. Having flexibility is a great benefit for those with more than one responsibility such as home family, work and other time commitments. Online platforms enable ease of access which makes education more inclusive and accessible by enabling individual learning at their own convenience.

Lumi encourages students to participate in various forms, through discussion boards and even collaborative projects that can make information interactive albeit the absence of real time interactions. It has been designed specifically to create responsibility among the students and make them self-study. This philosophy prioritises the growth of critical thinking and self-regulated learning[122].

With Lumi being online, there are no geographical boundaries and institutions can reach out to a huge global audience. Having diverse students in the learning environment enriches educational understanding by blending a group of people with different perspectives and experiences.

The platform delivers related analytics and reporting that allows instructors to develop personalized learning paths for each student, so involving students of their training. Educators are also able to targeted interventions through identifying areas in which students may be struggling or observed strengths, and then allocate resources dependent on the need of each learner.

By leveraging Lumi, institutions can also reduce costs. Educational institutions are more on to opting asynchronous learning platforms, cost of infrastructure and logistics rising high with conventional in-campus education.

While Lumi has a number of strengths, using it is not without challenges. It is crucial to acknowledge and overcome these obstacles in order to establish a successful implementation of the platform. Dependable internet access and technological resources can be a significant barrier to many students, especially those in digital deserts or financially underprivileged regions. Educational institutions need to consider and work on technology hurdles, working towards solutions for the digital divide[123].

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[122] Garrison, D.R. and Anderson, T., 2003. E-learning in the 21st century: A framework for research and practice. London: Routledge/Falmer.

[123] Wadhwa, A., & Salzman, H. (2020). "Bridging the digital divide: The impact of classroom technology on equality." Brookings

Asynchronous teaching methods require an instructional shift away from more traditional pedagogies. Educators may need training and support to leverage Lumis features fully for learning.

Use of asynchronous learning approaches also could lead to isolation among students. The absence of face-to-face classes and time lapse between replies can cause students to feel detached from their teachers as well as peers. According to Shea et al. To develop networks in order to overcome this specific difficulty, educators should positively promote the construction of online communities and allow peer engagement by forcing.

It is very important that the standard of education should not jeopardize only because sitting in an asynchronous setting. Higher education institutions need to ensure quality in teaching and learning through redeveloping existing course materials, developing testing strategies that are more robust, and creating feedback loops for continuous improvement.

Asynchronous learning is often seen as antithetical to collaboration. However, platforms such as Lumi are designed to support and improve collaboration between students and tutors in virtual spaces.

Lumi's online discussion forums serve as digital spaces where virtual interactions between students can occur so that they may take part in discourse, exchange knowledge and collaborate on academic projects with each other. For example, Harasim argues that online discussion forums "create a space for students to take part in peer learning and develop critical thinking".

Lumi allows students to be evaluated by their peers and for that assessment feedback. Using collaborative approach not only gives a relief to the teachers but also is conducive for peer learning and developing critical assessment skills[124].

Lumi is an opportunity for students to create virtual workspace, which can be shared periodically or permanently between classmates... especially giving the

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[124] Topping, K. J. (1998). "Peer assessment between students in colleges and universities." Review of Educational Research, 68(3), 249-276.

possibility of asynchronous teamwork in various assignments and projects. Research suggests that performing collaborative assignments contributes to the development of skills such as cooperation, problem solving and communication in similar situations found outside school [125]. Using Lumi requires educators to re-examine their ways of educating and make the necessary changes for this teaching environment that is asynchronous. This passage involves many dimensions of teaching and learning.

Lumi helps with an active learning by given interactive information, also providing communication in forums. Educators can design engaging learning experiences that require students to apply their knowledge which in turn encourages a deeper understanding and the development of problem-solving skills[126].

Asynchronous learning in Lumi, it turns out, is really better suited to the flipped classroom mode of presentation. As Bergmann & Sams[127] indicate, educators can present course content via online delivery systems that would allow class time to be used for discussions and exercises aimed at solving problems.

So, the assessment tools of Lumi make continuous formative evaluation happen. Black and Wiliam[128] explain that teachers can produce more recent data on students' academic achievement, and reflect it in their teaching.

The Lumi model of self-paced allows students to learn according to their needs and interests, impacting the learning environment. Students take on student responsibility for learning by taking control, setting their own goals and seeking necessary resources to achieve them.

Lumi has already been put in place by many educational establishments to support assessed, asynchronous pedagogical practices and foster more engaging

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[125] Means, B., Toyama, Y., Murphy, R., Bakia, M. and Jones, K., 2010. Evaluation of evidence-based practices in online learning: A meta-analysis and review of online learning studies. Washington, D.C.: U.S. Department of Education.

[126] Prince, M. (2004). "Does active learning work? A review of the research." Journal of Engineering Education, 93(3)

[127] Bergmann, J., & Sams, A. (2012). "Flip your classroom: Reach every student in every class every day." International Society for Technology in Education

[128] Black, P., & Wiliam, D. (1998). "Assessment and classroom learning." Assessment in Education, 5(1), 7-74.

learning experiences. This argument is supported with the help of two problem cases and results obtained on platform.

After looking through most other asynchronous learning platforms, Lumi is the best platform for a deep dive because of its elegant interface and versatile toolkit, as well as experience proving efficacy with online education. This process of implementation followed the following key stages. To ease the changeover, Lumi held several professional development workshops for faculty members. Topics in the training session included platform navigation, content creation, assessment tools and best practice for asynchronous teaching. So, the Lumi platform can be used in different ways to enhance Asynchronous learning.

With Lumi, professors can curate and customize course materials to encourage active involvement among students. Multimedia elements, interactive quizzes and movies were used to make the experience more dynamic.

The Lumi discussion forums became virtual classrooms where students were able to engage in the asynchronous conversation that is critical for debate, but almost impossible with 215 students. The academic team took the initiative to encourage them for exploring, challenging and questioning of different topics as well as collaborative project-based activities.

Lumi provided a set of assessment tools that were used to generate several types of examinations, including multiple choice quizzes and assignments or peer assessments. The platform also enabled teachers to provide immediate feedback and track student progress through analytics and reporting.

This means, possibly universities can use Lumi's mobile compatibility so that students everywhere around the world can easily open course materials on their own devices. This feature allows students to perform learning activities in a variety of locations regardless of location.

Here are just some of the positive outcomes that could result from deploying Lumi at university. It can be used to increase student involvement in

course work within online classes as well. Discussion forums helped to simulate in-person peer-to-peer interaction, and dive deeper into the content.

Students are likely to appreciate the flexibility and accessibility of asynchronous learning. This way students are able to conveniently work with course materials within the frame of their career, home and educational commitments.

This is expected to lead a significant increase in the enrollment of international students for online degrees due to Lumi's attractive and readily-accessible platform.

Challenges may emerge from the deployment of Lumi

Among the several challenges faced by a few students included access to technology with internet limitation and shortage of devices. They propose that universities should delve into some possible solutions in order to embark on real action towards narrowing the digital divide.

Continued faculty training and support are needed. It is crucial to read more implementation tips for using Lumi to help instructors fully utilize the platform as well as ensuring that they continue adapting their educational techniques.

Quality Assurance is expressed in the need to have for that includes superior qualifications provides additionally found colleges having a vital quality assurance product, a way related with being sure on-line session often meet proven ideals regarding articles, analysis as well as undergraduate wedding.

We have tried to bring out the transformative potential of such innovative options for higher learning like Lumi through our analysis. It serves an example of how institutions may adapt and succeed in the more agile tumbler educational landscape.

Thus, it can be concluded that the points mentioned above advocate for Lumi platform bringing in asynchronous teaching and learning which shows a development worth integration into modern education. The software's user-friendliness, adaptability and collaborative possibilities make it a powerful tool

for educators as well as educational institutions that are trying to cope with the learning world getting turned on its head. Of course, there are some major challenges to overcome such as technological barriers and changing pedagogical practice but we should not forget the potential for Lumi in engaging students better than anyone could have imagined while increasing collaboration between staff and academics which is set revolutionize how education works.

As we trod through the ever-evolving educational landscape such platforms like Lumi continue to shape asynchronous learning. By means of persistent pioneering and strategic incorporation, the future may see asynchronous education as an essential component mold into current learning resources for all learners worldwide.

§3.2 A Case study of Google Classroom PD Sessions

At the present times, e-learning tools play much significant role because they are actively incorporated to learning process and crops better results for teachers as well students. It leads onto a discussion of the role Google Classroom could play as a platform in teachers' CPD, focused on its capacity to support pedagogical development and establish an environment that should be synonymous with lifelong learning. It explores the possibilities of Google Classroom as a professional development tool, its pros and cons, and what can be done using with this platform. It aspires to demonstrate the excellence in teaching and learning that this wonderful application can supposedly achieve for teachers

Blended learning is the buzz word in educational circles and for good reason over recent years – online resources with teacher instruction. The above literature review focuses on blended learning in online mode, focusing specifically on reliable web resources for enhancing teacher knowledge and skills.

Blended learning comes on the back of shifting pedagogical methods. Garrison and Vaughan[129] emphasized the combined orientation of real-life and virtual learning to a new medium purposefully structured in order to accommodate both constructivist debate as well as team working, which is facilitated through blended however; mainstream online education. Additionally, the Community of Inquiry (CoI) framework also underpins Garrison and Kanuka's model by positing that cognitive presence, social presence and teaching presence support each other in forming a sound foundation for optimal learning online.

Because through educational publication sites like EdSurge and other contemporary federated publications, profitable information on what the best oriented pedagogical designs for digital practice in a blended learning environment have been seeded deeply. Blended learning as identified by Garrison and Vaughan[129] has moved into the forefront for instructional design, providing teachers and instructors to establish interactive student-centered spaces with online resourcing. Through EdSurge and The eLearning Coach, some of the better practice regarding instructional design for blended courses can be illustrated Blogs like this, enable educators to use from practical examples rather than start with a clean sheet.

The use of electronic platforms and course management systems as complements to manage blended learning. Coursera and edX - MOOCs of note Their product lines have been expanded dramatically to cater for those without a college education up through institutional learners. MOOCs can be most effectively used in blended learning settings to provide students with the best quality courses available from top-ranked colleges and universities for credit (if they are not already offered). Now these platforms are at the heart of

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[129] Garrison, D. R., & Vaughan, N. D. (2008). "Blended learning in higher education: Framework, principles, and guidelines." John Wiley & Sons.

conversations around adaptive and personalized learning, as well as high touch educational models.

Sites like Khan Academy have been indispensable in getting the K–12 sector to implement blended learning programs. Horn and Staker[130] state that Khan Academy is type of electronic platform well suited to deliver self-paced, mastery-type instruction because it offers high quality video lectures along with exercises. Teachers therefore can focus classroom assignments on work that requires discussion, analysis or the solving of problems rather than teaching new material. As class lessons are given as homework, every student receives individual learning experiences; the teacher has time to look after each one.

Canvas LMS Community: An informal online space where educators can share success strategies and promote blended learning. They are intent on using the data itself, and drawing learning from inputs across different departments to enhance teaching in higher education. Picciano[131] further suggests the incorporation of an excellent learning management system, as a key benefit for hybrid environments is that it streamlines managing assignments and exams. The more advanced tracking and communication capabilities, as well as assessment features that Canvas or other vendor-specific LMS systems provide are usually beneficial to schools.

When it comes to blended learning situations, communication or teamwork tools are given by Google Educational Resources for the teachers. According to Hickey and Schaaf, in the case of learning from doing and group work," postulation, "the real-time collaboration abilities that accompany this suite are advantageous. It is common knowledge that Mayer[132] advises utilizing both the visual and auditory modes but in a lesson so rudimentary he does not need to explain basic facts.

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[130] Horn, M. B. (2015). Heather Staker. Blended Learning: Promoting Educational Revolution with Subversive Innovation. Machinery Industry Press. (Nie, F. H., & Xu, T. Y. Trans.)

[131] Anthony G. Picciano, 2013. Introduction to Blended Learning: Research Perspectives, Volume 2
[132] Mayer, R.E., 2009. Multimedia learning. 2nd ed. Cambridge: Cambridge University Press.

For teachers who would like to learn more about blending their expertise, they can try LinkedIn Learning. Since LinkedIn Learning does, in fact, have a section for instruction design as well as technology integration and blended learning. According to Mattar et al.,[133] this fulfills the requests made by from education and training professionals for support in this domain of professional development

Twitter is extended with blended learning academics. These consultations about blended learning increased the number of organizations that united scholars with educators in real conversations. But more importantly, the hashtags #EdTech and #BlendedLearning are highways with tidepools of data for research findings on what type of methods are best or where those scarce gems that educators prize come from[134].

This extensive review of the literature provides a clear introduction to multiple digital tools and pathways for educators, instructional designers who are involved in blended learning on virtual platforms. These materials follow sound pedagogy and accepted educational principles, offering reflects best practices giving an informative view of the potentiality for academic research also providing some helpful advice on how to practically apply blended learning strategies successfully.

Recently, however, largely because of technological advancement and a greater emphasis on ongoing teacher training, the learning ecosystem has shifted drastically. Professional development (PD) for teachers has evolved over time to better reflect the dynamics of today's classrooms. A herd of teachers prep and dev have also been lured there by Google Classroom. Google Classroom is probably the best example of technology that has started to pick up traction in teacher education and training. A Modification of Google Classroom - rooted in educational theory to support teachers continue with professional development

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[133] Joao Mattar;Daniela Karine Ramos, 2017. ACTIVE METHODOLOGIES AND DIGITAL TECHNOLOGIES: IN DEFENSE OF A DE-CENTERED PEDAGOGY
[134] Dabbagh, N. and Kitsantas, A. (2012) Personal Learning Environments, Social Media, and Self-Regulated Learning: A Natural Formula for Connecting Formal and Informal Learning. The Internet and Higher Education, 15, 3-8.

Darling-Hammond et al. research has established that high-quality teacher professional development is an active, internal process designed to help a public school educator improve his or her teaching strategies. As noted by Darling-Hammond et al[135]. Google Classroom which fully supports such a process as it creates an organic online space for teachers centred on collaborative learning, resource sharing and reflective practice.

Examples of fully-qualified perspectives that can serve as teacher professional development forms Professional development is offered online and utilizes a 'teacher with technology' format. The teacher or the professor as nothing else than a deliverer of knowledge is also redefined[136]. This makes the implications that these sorts of scenarios might follow to appear as more real than fantasy, especially if you are operating in a virtual teaching landscape which has had an opportunity grow over recent years.

First of all, one of the main benefits to an online PD is how flexible they are. Teachers can blend their professional development with their teaching responsibilities: they decide how fast DDI would progress and when they learn[137]. The key point is, this capability (alarmInstance) will be very helpful for modules where the instructor of that module need to operate on timely manner.

Personalized learning is another significant advantage. Online PD tools and resources likely include many of the tasks included in Figure 1[138]. Teachers should allocate development activities based on their own teaching goals, the instructional environment they work in, and areas of concern. Personalization also means in a related context, that the Professional Development experience is more meaningful and fertile.

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[135] Linda Darling-Hammond, Lisa Flook, Channa Cook-Harvey, Brigid Barron, David Osher, 2019: Implications for educational practice of the science of learning and development

[136] Turner, Susan A. , A Self-Study of Technological Transition: Instructional Impacts of Shifting a Distance Course Delivery System

[137] Fethi A. Inan & Doris U. Bolliger, 2016. Online Instructor Clusters: Implementation Frequency of Instructional Activities

[138] Linda Darling-Hammond, Lisa Flook, Channa Cook-Harvey, Brigid Barron, David Osher, 2019: Implications for educational practice of the science of learning and development

In addition, online PD opens educators to multi-actor networks beyond those provided by a single jurisdiction. A global perspective on this matter could lead to an increase in cooperation, ideas sharing and the influence of international best class methods[133].

By joining in online teacher development sessions, teachers can be saved from attending at actual workshops or conferences. This increases the total number of educators and schools eligible to earn quality professional development credits.

The multimodal learning is also to be applied. As Inan et al. noted a variety of media were employed within the online professional development system, including webinars-online seminars with two-way broadcast capabilities-interactive modules, and discussion boards This method (or multimodal) uses text, images and interactive features to appeal to instructors, as well as accommodates different learning styles.

Online professional development provides a way for teachers to quickly and repeatedly review information at their own time, or as needed. Through this self-paced system, they can understand the content more effectively accounting different levels of prerequisite information.

Recommended by Darling-Hammond et al. According to Reeves et al. One of the advantages to teachers engaging in this self-paced approach is that they are able to gain a full understanding of not only content, but also varying levels at which their students may (or more often than not...may NOT...) be acquainted with said material.

Reflection and application are two of the other irreplaceable benefits. According to Inan et al. Many online professional development programs encourage teachers to reflect on what they have learned and bring new tactics into the classroom as well[139]. This reflective practice helps bridge the theory-practice divide and results in marked opportunities for enhanced instructional strategies.

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[139] Steffen Schaal, Thomas S. Muenz, 2023.How a Digital Educational Game can Promote Learning about Sustainability

According to Hermans, online professional development systems can monitor the development and provide feedback on progress of instructors through data-analytics. Using data driven feedback, teachers are able to articulate their professional development outcomes.

Moreover, teachers are able to revisit this content and consolidate their learning at a more leisurely pace through the use of PD tools and materials which remain available for extended periods[140]. With its flexibility, a teacher can always improve and stay current with new education trends.

Darling-Hammond et al.[141] indicated that the effectiveness of online professional development is scalable and can be provided for large numbers of instructors all at once. It is scalable - making it an efficient choice for professional development needs of the educational institution/school district.

This is why online professional development for educators presents a pocket-friendly, personalized and adaptable solution to continued making-learning their priority. The pedagogical observations of some renowned writers prove that online professional development models appeal to current needs and appetites on the part of a population, which is increasingly experienced in digitization matters; therefore these formats have potential for transferring skills with significant added- value.

Here are some possible activities you can add to Google Classroom for teacher professional development (PD), complete with an extensive example as a model of how the activity is done.

Forums for Discussion

Classroom discourse within Google Classroom could be an organized forum for teachers to share insight and ideas, first-hand knowledge or questions

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[140] Fethi A. Inan & Doris U. Bolliger, 2016. Online Instructor Clusters: Implementation Frequency of Instructional Activities

[141] Linda Darling-Hammond, Lisa Flook, Channa Cook-Harvey, Brigid Barron, David Osher, 2019: Implications for educational practice of the science of learning and development

with respect to some topic of content area or pedagogy. For example: Effective Classroom Management Techniques. Sharing of success stories and management techniques with fellow teachers, defending queries from colleagues regarding expertise. Educators should provide 2 replies to their colleagues memories, as this also promotes cooperative learning.

Peer Analysis

In this activity, a virtual peer observation and reflection in which instructors observe live or recorded [online] student rates for their courses. For example, Teacher A uses recorded instructional video Teacher B has watched the movie and taken notes so that she can give constructive feedback on teacher strategies and student interaction. Next, Teacher A: Responding & Growing

Tests with Audiences and Self-Assessment

In designing this activity, we intend for instructors to review a sample of interactive Google Forms tests or self-assessment programs that they can use in learning about pedagogical concepts or technology tools. A quiz can then be created on the topic "Integrating Technology into your Classroom". The quiz teachers take to evaluate their tech integration skills. Teachers then receive instant feedback on correct and incorrect answers, along with links to additional supplemental learning resources.

Peer-Reviewed Curriculum

Teachers are required to post the lesson plan on Google Docs or Slides and other educators can comment with suggestions. For example: teacher A uploads a lesson-plan on the Web for "Climate Change" Teacher B reads the packet and provides feedback on goals, drills & test. Teacher A Updates Lesson Plan After the input has been considered, Teacher A new version of lesson plan is ready and give out.

Guest Speaker Online Events

Webinars led by education specialists or relevant special guests should be planned for the same subjects. For example, If you are a professional, you can offer to organize an online seminar on "Inclusive Classroom Practices" The instructors can also opt to view the recording live or at their own convenience. That is followed by a round-table in which they share crucial learnings and inclusive teaching practices.

Virtual Book Clubs

Online Professional Development/Pedagogy Books Book Club - Google Classroom This might be a book like "The Power of Inquiry" by Kath Murdoch Teachers take a look at the chapters supplied, have discussions with one another through way of means of posting across-queries to IHSECOE teachers and actual-lifestyles applications. Group members meet electronically to share real-time changes that result from important discoveries within the classroom.

Micro-teaching Events

Micro-teaching sessions are simply brief lessons led in-person or over webcam by a teaching profooter. E.g — Effective Questioning Techniques They were then prompted to comment for ten minutes on different methods. After that, the participants journal about their own strengthens and growth areas after each session.

Cooperative Resource Exchange

A better solution is to have a Google Drive folder for educators, where all your teachers can put in useful materials and lesson plans/worksheets/etc. to work on together (and more). For instance, you can create a folder titled "Teaching Resources". The teachers will categorize the stuff and upload, so other Teachers

who want to teach same topic can have easy access. Notes or suggestions when they use the resources provided.

Problem-solving case studies and scenarios

Teachers receive real-life case studies and face challenging problems related to the adversities in classroom or educational policies One illustrative case, "Addressing Student Engagement in Virtual Learning. Educators then post a discussion thread that breaks down the scenario and provides possible tactics, best practices or solutions. Educators might evaluate and compare various approaches as the next part of this conversation.

Workshops Run by Peers

It could enable teachers to lead workshops on topics that they have expertise in or are passionate about. Teacher A offers a session: "Effective Differentiation Strategies" is an example of one. Teacher B is joined by other colleagues in attending the online workshop. Teacher A also talks participants through practical examples to support better understanding.

Development of a Portfolio

Teachers may be encouraged to present digital portfolios, replete with student work and plans for lessons or best practices. Some collabortors make Google Sites Portfolios for students. Such categories might be student achievements, evidence of lesson effectivity and reflective side notes on how teaching was done. Portfolios are valuable instruments for those in professional development and self-writing.

Projects for Action Research

They can carry out research projects. Therefore, educators delve into certain issues or enhancements in the classroom and share their findings. They

may examine topics such as "The Influence of the Flipped Classroom on Academic Achievement" They collect data and assess it, but use Google Slides or Docs to capture information and draw conclusions. Decision-makers may use study results and generate new ideas from discussing with each other.

Reviews from visiting peers

A process of peer reviewing is a similar activity where teachers share lesson plans, assessments or instructional materials to have them reviewed for feedback. Teachers A and B trade lesson plans Then Teacher B adds feedback in the comments function of Google Docs. This process promotes collaboration and can assist the development of teaching materials[142].

Journals for reflection

They accessed reflective diaries on Google Docs to capture their daily experiences, the challenges they faced and successes. These people block out time in their weekly schedule to write down thoughts in a journal that includes questions like, "What went right this week?" Or "How can I improve?". Th is would be able to aid in self-awareness via peer reviews or conversations.

Video-Based Self-Evaluation

Self-reflection on teaching methods and brief videotaping of classroom segments was required by all teachers. For example, teachers could video ten minutes of class. So, when they watch this film now They Spend Times how can their Teaching method be like or How much students involve and Their Classroom control etc. Therefore, various perspectives can be offered from peer input.

Challenges of Online Learning

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[142] Shakhlo Sadullaeva, Yana Arustamyan, Nilufar Sadullaeva, 2019. Shifting the Assessment Paradigm from Knowledge to Skills: Implementation of New Appraisal Procedures in EFL Classes in Uzbekistan

Deadlines might be assigned within which participants must research cutting edge EdTech tools. Google Classroom Teachers Doodle their way through experiences won and lost. Reward & Recognition can motivate the teachers to participate and get involved

This integration into Google Classroom gives teachers a connected, vibrant and community piece for their professional development efforts. Through this medium, the concept stimulates active learning and reflection so teachers can become more effective at their craft leading to greater learning experiences for students. The following case study will demonstrate how instructors can use Google Classroom for PD.

On its part, the Department of Translation Studies and Comparative Linguistics (National University of Uzbekistan) decided to experiment and took up an unprecedented case study involving twenty English teachers. The Google Classroom lessons were all part of an effort to better teach their students. Being in line with the State Educational Standard of the Republic of Uzbekistan, it was meant to serve as a hub for knowledge helpful not only for taking but also using those lessons. The content was fluid, a melding of diagnostic surveys and exams. It enabled us to correct errors in educational methods and assess the performance of participants. Using Google Classroom, teachers accessed individually tailored lesson plans and resources to schedule their day while inside the classroom with interactions on tasks for independent study courses. These findings empirically support the need for access to PD, ongoing supports and subject program design. This really highlights the power of online teacher training on language education. The purpose is to assess the efficiency and suitability of a mature training scheme in helping adult learners do well in learning English under conditions that are changing at an alarming rate within online education. The experiment deployed a number of interventions to try and reach this goal. It all started with a thorough study of the literature that allowed identifying any established concepts and approaches in accordance with State Educational Standard of Uzbekistan.

For comprehensive English teacher needs, we are basing on the increasingly growing teaching methods' harmonization with upfront online didactic resources available on a global scale since 2020. The first stage of this task is creating properly prepared questionnaires for the following phases. It was possible to develop a questionnaire out of a vast survey of the literature that deeply penetrates English teacher training modules' ultimate aims, inclinations, and practical uses. An interesting solution was the use of the Google Forms platform, thanks to which all students are guaranteed access to the site. Furthermore, being fully informed about students' needs, the above-mentioned techniques and resources were adapted. Students ready-created data-collectors were assigned to understand how important the use of online platforms, including such as Google Classroom, is desirable to implement proactive teaching approaches. The selection of groups was random (Figure 3.1).

Figure 3.1 Students' Profile

| Year	Male Students	Female Students	Total Students
Year 1	15	10	25
Year 2	13	12	25
Year 3	10	15	25
Year 4	11	14	25

From this performance study, levels of performance, and student feedback data, teachers may better direct instructions to meet the needs of different learners, including those with varying levels of difficulty and style of learning, in the face of learners. It comprises real-time feedback systems, consistency in the creation of tailored learning opportunities, and utilizing participation technology — the interactive. Adaptive, culturally responsive, and multimedia learner-

centered elements of instructional media facilitate contextual timely, relevant, and adaptive learning due to the absorption of digital platforms, which improve the supportive, inclusive learning environment would improve academic performance by offering universal material, progress tracking, and real-time implementation of interaction.

The questionnaires and evaluations teachers filled out for us can allow exploring quite a long time in detail how differently teachers generally teach. It is also an important survey in terms of teacher awareness, training and even, probably, drivers of self-motivation. Utilizing a Likert scale, this tool allows for unlimited responses. It is worth mentioning that teachers use the internet and online tools in general often. However, there is a gap found during the questionnaire: a lot of interned resources are used, but they do not always fit the unit in terms of speech, which raises a question about the reliability of the resources. We used Google Classroom for PD training and reveals a significant improvement in students' marks. In our study, a hundred students' performance from different levels was used in our analysis. The average semester mark was originally 70%, making the total mark increase to 80%. In total, 72% of the respondents in the survey assumed that the training session was the most valuable. Also, 53% actively uses it for self-improvement. Hence, popularity among the participants attributes a perceived value for education according to our questionnaire data.

Figure 3.2   **Figure 3.3**

Improvement in Average Semester Marks

Responses from Survey & Interviews
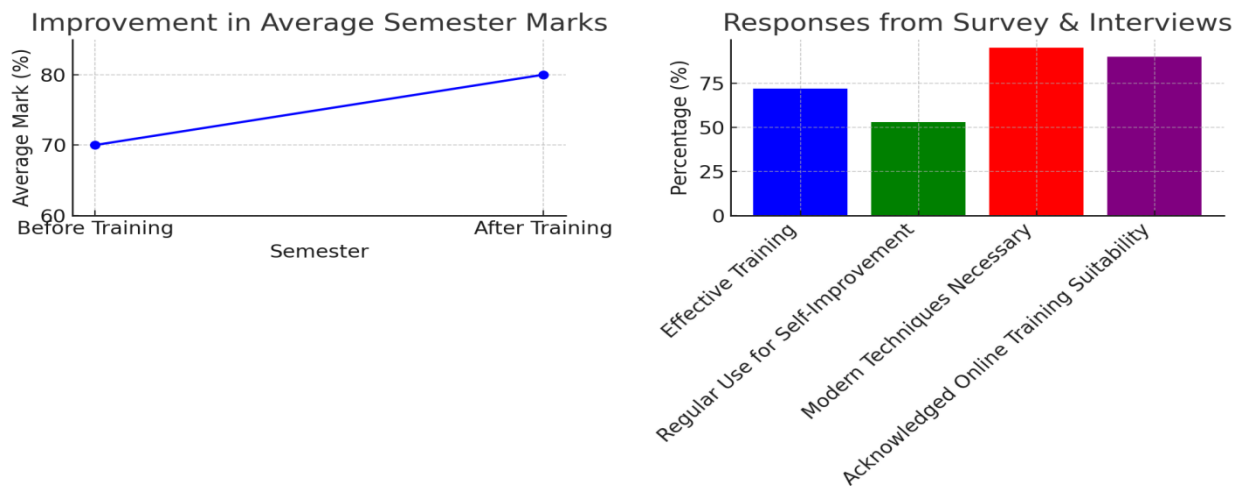
The chart portrays the changes of average semester scores over time. The chart presents an increasingly positive trend of semester scores indicating an increase by 10% from 70%-80% after students 'teachers were in Professional Development (PD) and guidance distributed on Google Classroom. A 10% rise can be safely claimed to imply that Google Classroom is used for PD and guidance to a level that may impact student learning outcomes. After reading and processing the information, the graph gives a significant amount of evidence to anyone that ensures that process can significantly transform students' performance.

It is incredibly difficult to evaluate contemporary teaching styles and e-learning tools. Interview and survey data was thoroughly scrutinized in the case of Google Classroom training strategy. After we were done, the highly effective / somewhat effective survey responses calculated to "72 percent Highly Effective Training". A large amount of teacher growth and development was coded out at the beginning of June.

Nearly half of respondents (53 percent) replied with "very frequently," tipping the scales to what is obviously a dominant factor for most teachers. They clearly rank professional development as a high priority and Professional Learning Community good practices have definitely found their place in the Google Classroom. Almost as high a number of educators note that this requirement for new ways to use the technology is very important - 95% said it

was extremely or somewhat essential, and similar numbers suggest they do not see an endpoint in near-view where all this tech integration and shuffleboard catches up with the modernizing economy. at least teachers are nearly federal when it comes ensuring their students get flexible enough instruction to be able succeed globally...jobs aside, which taken on its face should have everyone flat-out cheering!

Appropriateness Rating = 90%-most agreed that digital training for teachers was appropriate, yet the volume and specifics of teacher qualifiers to this question revealed around logistics/communication details they knew would likely need ironing out. That nuanced answer really reflects the footer — that services like Google Classroom might one day soon be great resources for growth but, as most would likely concur (indifferent if rightfully or dreadfully so), there are far too many gaps in PPATs participation.

In summary, the charts paint a nuanced picture of how platforms like Google Classroom are impacting PD, teaching practice and receptiveness to instruction — one in which teachers clearly welcome continued use of such tools as they seek ways to better teach their students but that might best be encapsulated with this insight: It is all part-and-parcel where new power tools aren't killing desire for professional development so much as enabling it.

Even if the pilot test went well, it is not without drawbacks. The unsteady network hindered various operations (such as during the Google Classroom classes). Moreover, the after-hours academics of the mentors were sophisticated to a certain extent. Comments from Teachers in the Feedback Session

Teacher 1: "The PD room was always quite friendly but slow Internet is never a good thing"

Teacher 2: "I needed to be in bed after teaching all day and couldn't participate late PD sessions. And question, "What can we do with this?

Teacher 3: "This is a special day; we need to take a rest for this event and it should be done once every week."

Therefore, this demonstrates that over time the Google Classroom professional development sessions had succeeded in increasing educators' knowledge and instructional skills. Many also argue that requirements should be phased in, there must be constant hand-holding, and teacher training programs need to tailor education very specifically toward each individual teacher.

Our pattern for upcoming papers is as such; we recommend that in addition to investigating 'what is', we also engage in longitudinal case studies of the extent and kinds of pedagogical change likely triggered by training processes via web-based resources for pre-service language teachers. But we recommend that a full assessment be performed of how well online courses complement traditional pedagogy.

In this situation where the wind and cloud in education are changing, properly using technology for teacher professional development is essential to life or death innovation. We have seen many activities and benefits of online professional development in Google Classrooms.- our hypothesis holds true when looking at all this data. How Stanford University is adapting Google Classroom for teacher professional development illustrates how this platform may provide educators with a more flexible, collective and introspective space. In the end, it reinforces formative views of professional development that are more learner-centered to begin with and result in more accommodating opportunities for improved instructional practices benefiting student learning.

Educators can take meaningful professional development according to their Likes and dislikes, through practicing online professional development activities. Eg. forums, microteaching, peer observation and a variety of webinars from experts On one hand, these assignments will contribute to the development of a continuous self-improvement cycle among teachers; on the other, they emphasize team work and not only entail some introspection but also getting acquainted with evidence-based decision-making.

As digital technology is integrated more and more into the future of education, we are proud to also integrate platforms such as Google Classroom. Ultimately, it will be essential for determining how professional development is developed around the world. Prioritizing adaptability, customization and collaboration as the factors delivering preparedness of students - teachers ready with both expertise and abilities they need to meet rapidly changing demands from learners (and institutions that inform them).

Conclusion to Chapter Three

To sum it up, the exploration of Lumi and Google Classroom that we made in this chapter makes us realize their importance in changing digital pedagogy. This leads to the introduction of these platforms that not just make learning a more interactive and dynamic endeavor but also takes care for various modern learners and educators.

Unique features of Lumi, that give educators the tools needed to upload content in a flexible way and organize it accordingly, like video lecture or reading documentrics. With its discussion tools, assessment methods and real-time analytics it creates an engaging collaborative learning environment that can scale up/down to meet the particular rhythms of each learner. This flexibility is especially important in an age when education needs to be made available for different schedules, learning speeds and access.

In the same way, Google Classroom has become an essential tool for learning processes which smoothened material distribution, strengthened communication and continuous monitoring of students. Incorporation in everyday teaching makes traditional and digital education methods work together, it is integrated to the point where no matter if learning takes place on school premises or off-campus, there will be a little to no disruption of the process.

The value of both platforms have been invaluable in connecting technology to pedagogy. And they are helping to support a learning model that is not only responsive to the needs of students, but one which seeks out technology as an enabler for better educational outcomes. Nonetheless, the move to these digital platforms also presents challenges. Digital pedagogies such as these mean ongoing support and development is necessary, a particular issue where technological accessibility, the digital divide or accurate provision of learning for educators need substantial training.

Whilst educational institutions work their way through the challenges of embedding technology within teaching and learning, our experiences with Lumi App vs Google Classroom clearly have fingers to old sores. These exemplify the possibilities of digital platforms in support and enhancement of educational practice, indicating a future with digital capabilities naturally embedded - effectively required for successful pedagogy as a baseline. That all students may study materials from high quality teachers and sophisticated deliverable via innovative digital channels which highlight contemporary potential for content delivery itself along side learner needs expanded through developments within this new age.

These platforms will only be successful in changing educational experiences if thoughtfully implemented, with supports such as professional development and a campaign to address the challenges around getting technology into more classrooms. The duo of Lumi and Google Classroom are not simply another means by which education is done, but the leading edge to reimagining what it looks like in a digital world.

CONCLUSION

In conclusion, the monograph explored how essential is digital technology in redefining teaching and learning approaches especially when using platforms such as Lumi for dynamic tutorials or Google Classroom which you access your

course from them. More than just tools, these represent a sea change in educational paradigms that provide highly individualized and accessible learning experiences.

Digital platforms, as we have discussed, eliminate traditional geographical boundaries to provide easily accessible learning environments that can cater for the broad range of styles and time-frames required in education today. They offer educational possibilities that now have no geographical and temporal barriers, a necessity for ongoing training in today's fast-changing world. These systems open up the possibility of tailored learning paths and instantaneous feedback which only expands on the educational process by making it more efficient for everyone. Yet, there are substantial obstacles in adopting digital education as well. Main Takeaway: One of the largest barriers that inhibit digital health implementation is the growing divide in access and literacy. Additionally, the very loneliness felt by some students studying in online settings must be dealt with to humanize and realamesify digital learning as much as possible; similar that is to your traditional classroom.

The glue in connecting these technologies and making them work are the educators. The skills to use those tools, but also how these tools fit into the pedagogical strategy and ways in which they can be leveraged. To prepare educators to successfully chart these digital transformations, ongoing professional develop is vital.

Recommendations

- **Investing in Infrastructure**

First and foremost step should be ensuring that every educational institution has high-speed internet access, which means arming our schools districts with the reliable digital infrastructure they need to succeed. This will help to alleviate the digital divide and support all students, teachers that can use online education efficiently.

- **Increasing digital literacy programmes**

Offering robust, multi-level digital literacy programming in all educational settings so that students are well-prepared for the learning opportunities made possible through technology. This approach should likewise apply to adult education and therefore lifelong learning.

- **Enhancing Teacher Training**

Investing in digital pedagogy professional development efforts. This should encompass the practical use of LMS platforms, as well as ideal designs for online and blended learning formats.

- **Facilitating Public-Private Partnerships**

Support partnerships of educational and tech institutions to equip students-teachers with the most recent technologies and training. They can also facilitate internships and capstone experiences for students.

- **Fostering A Strong Online Community**

Design an approach to encourage audience participation, and create a community around your learning (e.g. virtual clubs or online study groups and interactive webinars) so it does not feel like just taking another generic MOOC offering.

- **Controling and Formalizing Online Content**

Specifications and norms to ensure quality of content in online education It will help in keeping the educational standards remain high and confidence on digital learning modality.

- **Awarding for Innovations**

Provide grants and tax incentives to new companies, as well as established firms, that will work on the production of original education technology solutions designed for Uzbek students.

- **Monitoring and Evaluating**

Regularly Get Feedback All stakeholders, including students and teachers to parents need continual monitoring of all digital education initiatives. Employ this data, in order to make changes and enhancements.

Uzbekistan can strengthen its own education infrastructure to harness the potential of digital learning in a more effective way by working on these two dimensions - which will not only be inclusive, but also flexible and aligned with global educational standards. With developments like these, the education system will have a chance to step up its standards and also prepare children for an era which is going digital.

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Appendix 1 Survey Instruments

Comprehensive Survey on the Adoption and Impact of Google Classroom and Lumi in Educational Settings

This survey was conducted to assess the adoption, usage patterns, and impact of Google Classroom and Lumi on teaching practices and professional development. Participants included educators from various levels of education, ranging from primary to higher education institutions. The survey aimed to capture both quantitative and qualitative data to provide a comprehensive overview of the effectiveness of these tools.

1. **Survey Sections**

Section 1: Demographic Information

- **Age Group:** [Under 25, 25-34, 35-44, 45-54, 55+]
- **Gender:** [Male, Female, Non-binary, Prefer not to say]
- **Years of Teaching Experience:** [0-5, 6-10, 11-15, 16-20, 21+]
- **Level of Education Taught:** [Primary, Secondary, Tertiary/Higher Education]
- **Subject Area:** [Open-ended response]
- **Institution Type:** [Public, Private, Charter, Online]

Section 2: Google Classroom Usage

- **Frequency of Use:** [Daily, Weekly, Monthly, Occasionally, Never]
- **Most Used Features:** [Assignments, Grading, Class Stream, Announcements, Google Meet, Other]
- **Perceived Effectiveness:**
    - *Question:* "On a scale from 1 to 5, how effective is Google Classroom in improving your teaching workflow?" [1 = Not effective, 5 = Very effective]
    - *Question:* "How has Google Classroom impacted student engagement in your classes?" [Open-ended response]
- **Challenges Encountered:** [Open-ended response]

Section 3: Lumi Usage

- **Frequency of Use:** [Daily, Weekly, Monthly, Occasionally, Never]

- **Purpose of Use:** [Interactive Content Creation, Professional Development, Student Assessments, Other]
- **Impact on Professional Development:**
  - *Question:* "Rate the extent to which Lumi has contributed to your professional growth." [1 = No impact, 5 = Significant impact]
  - *Question:* "Describe a specific instance where Lumi has enhanced your teaching practice." [Open-ended response]
- **Challenges Encountered:** [Open-ended response]

Section 4: Comparative Impact on Teaching and Professional Development

- **Overall Improvement:** *Question:* "Do you believe that the integration of Google Classroom and Lumi has improved your teaching methods?" [Yes/No - Please elaborate]
- **Recommendations:** *Question:* "Would you recommend these tools to your colleagues? Why or why not?" [Open-ended response]

Appendix 2 Interview Transcripts

Detailed Interview Transcripts with Educators Leveraging Google Classroom and Lumi

This appendix provides verbatim transcripts from in-depth interviews conducted with educators who have extensively used Google Classroom and Lumi. The interviews aimed to delve into the real-world applications, benefits, challenges, and overall experiences of these educators. The interviews were structured to explore specific aspects such as tool integration, pedagogical changes, and professional development outcomes.

1. **Selected Transcripts:**

Interview 1

Background:

Has over 15 years of teaching experience in the sciences. She began using Google Classroom in 2022 and incorporated Lumi into her professional development regimen in 2023.

Discussion Highlights:

- *Google Classroom Adoption:* Dr. Smith discusses how the adoption of Google Classroom transformed her approach to managing coursework, especially during the transition to online learning.
- *Lumi's Role in Professional Development:* She explains how Lumi's interactive features helped her develop new teaching strategies that cater to diverse learning styles.
- *Challenges and Solutions:* Dr. Smith identifies initial resistance from students and parents but notes that comprehensive training sessions alleviated these issues.

Key Excerpts:

- "Google Classroom has not only made my job easier but has also made my students more accountable for their learning."
- "Lumi allowed me to bring a new level of engagement to my professional development, making the learning experience more dynamic and interactive."

Interview 2

- teaches in the field of humanities and has been utilizing Google Classroom since 2018. He started using Lumi in his professional development in 2021, primarily for content creation and student engagement.

Discussion Highlights:

- *Tool Integration:* Mr. Doe shares insights on how he integrated both tools into his courses, emphasizing their complementary nature.
- *Impact on Student Learning:* He provides examples of how Google Classroom's organizational features paired with Lumi's interactive content have significantly improved student outcomes.
- *Professional Growth:* Mr. Doe discusses how Lumi has pushed him to innovate in his teaching practices, resulting in enhanced professional growth.

Key Excerpts:

- "The combination of Google Classroom's organizational power and Lumi's interactivity has revolutionized my teaching approach."
- "Using Lumi for my professional development has made me more confident in adopting new technologies in the classroom."

Appendix 3 Data Analysis

Comprehensive Data Analysis on the Usage and Impact of Google Classroom and Lumi

1. **Quantitative Data Analysis:**

Google Classroom Usage:

- *Chart 1:* Frequency of Google Classroom usage among participants.
    - Description: Bar chart displaying the percentage of respondents using Google Classroom daily, weekly, monthly, etc.
- *Chart 2:* Perceived effectiveness of Google Classroom in improving teaching workflow.
    - Description: Pie chart showing the distribution of effectiveness ratings (1-5 scale) based on survey responses.

Lumi Usage:

- *Chart 3:* Frequency of Lumi usage among participants.
    - Description: Bar chart showing the percentage of respondents using Lumi for various purposes (content creation, professional development, etc.).
- *Chart 4:* Impact of Lumi on professional development.
    - Description: Histogram showing the distribution of impact ratings (1-5 scale) provided by respondents.

Combined Analysis:

- *Chart 5:* Correlation between the use of Google Classroom and Lumi and overall teaching effectiveness.
    - Description: Scatter plot demonstrating the relationship between the frequency of tool usage and the perceived improvement in teaching effectiveness.

- *Chart 6:* Respondent recommendations for the tools' usage in educational settings.
    - Description: Bar chart showing the percentage of respondents who would recommend Google Classroom, Lumi, or both.
    -

Chart 1: Frequency of Google Classroom Usage

Chart 2: Effectiveness of Google Classroom

Chart 3: Frequency of Lumi Usage

Chart 4: Impact of Lumi on Professional Development

Chart 5: Correlation Between Tool Usage and Teaching Effectiveness

Chart 6: Recommendations for Educational Tools Usage
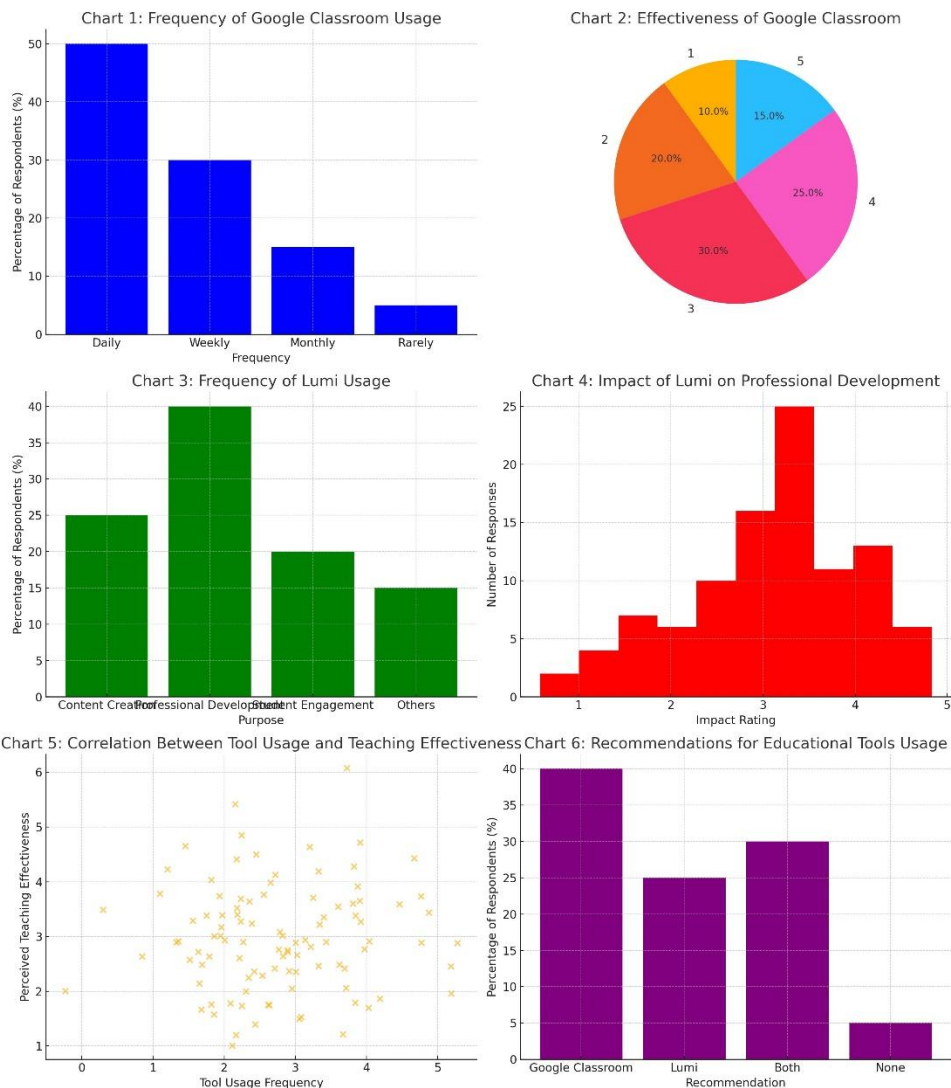
Qualitative Data Analysis:

Thematic Analysis:

- **Theme 1:** Enhanced Classroom Management with Google Classroom
    - Summary: Respondents highlighted Google Classroom's ability to streamline classroom

management tasks, leading to more efficient use of time and improved student accountability.
- **Theme 2:** Professional Growth through Lumi
  - Summary: Many respondents noted that Lumi's interactive tools facilitated significant professional growth, allowing educators to explore new teaching methodologies.
- **Theme 3:** Challenges and Solutions
  - Summary: Common challenges included initial resistance to technology and technical difficulties, which were often mitigated through targeted support and professional development.

Excerpts from Open-Ended Responses:

- "Google Classroom has become an indispensable tool in my teaching arsenal, significantly reducing the time spent on administrative tasks." - [Survey Respondent]
- "Lumi's capabilities have pushed me to rethink how I engage with students, making my lessons more interactive and student-centered." - [Survey Respondent]

Appendix E Technical Guide

Title: Detailed Technical Guide for Effective Use of Google Classroom and Lumi

Google Classroom:

Getting Started:

- **Step 1:** Creating a Class
  - *Instructions:* Detailed step-by-step process to create a class, including screenshots and tips for naming conventions and class settings.
- **Step 2:** Posting Assignments and Grading
  - *Instructions:* How to create, distribute, and grade assignments efficiently. Includes examples of assignment types and how to provide feedback.
- **Step 3:** Managing the Class Stream
  - *Instructions:* Best practices for using the Class Stream for announcements, discussions, and sharing resources. Tips for maintaining student engagement.

Advanced Tips and Tricks:

- **Organizing Classwork:**
  - *Guide:* How to use topics and modules to keep the classwork section well-organized and accessible to students.
- **Integrating Google Tools:**
  - *Guide:* Steps to seamlessly integrate Google Drive, Google Meet, and other Google Workspace tools within Google Classroom.
- **Troubleshooting Common Issues:**

Guide: A list of common technical issues faced by educators and step-by-step solutions to resolve them quickly.

2. **Lumi**

Creating Interactive Content:

Step 1: Designing an Interactive Lesson

Instructions: A detailed guide on using Lumi to create interactive lessons, including video tutorials, templates, and examples of effective content.

Step 2: Customizing Templates

Instructions: How to choose and customize templates in Lumi to suit different educational needs, with tips for enhancing student engagement.

Step 3: Analyzing Student Interaction

Instructions: Guide on using Lumi's analytics tools to track and interpret student interaction with the content, including data visualization techniques.

Best Practices

Engaging Students with Interactivity:

Guide: Strategies for creating content that maximizes student interaction, including tips on pacing, multimedia use, and interactive assessments.

Collaborative Content Development:

Guide: How to collaborate with other educators in creating and sharing Lumi content, fostering a community of practice within your institution.

Ongoing Professional Development:

Guide: Recommendations for using Lumi as a platform for continuous professional development, including creating and participating in professional learning communities (PLCs) and self-paced courses.