Paradigms of Online Learning Process and Development of Conceptual Model: A Systematic Literature Review

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Abstract

The digital revolution and skilled workforce define the advances and evolution of any nation's population. To stay competitive, an education system must cater to the demands of the technological age. The latest technological advancements have improved the quality of modern education. New advances in ICT, the transformation of learning, and a constantly competitive environment are nearly reimagining the academic spectacle. In the last decade, there has been a gap in research on online teaching and learning and very few systematic reviews has been done of this area. This systematic review of literature aims to address this gap by examining 55 research articles on online teaching and learning published in eleven journals in the last two decades. These studies were examined for publication trends and patterns, research themes, research methods, and research settings. While there has been a slight decrease in the number of studies on online learning in 2014 to 2016, it has then continued to increase in 2018, especially after the pandemic. The majority of these studies were quantitative in nature and examined higher education learners. Online learning was categorized into four themes and a framework across Technology, Human, Design and also Course and Evaluation was developed through this study. Several studies have examined online learner's characteristics and learner's engagement, as well as organization-level topics such as technology, content, and management. Research on online learning engagement is mixed, with some showing higher student engagement compared to traditional classrooms, while others note lower engagement due to lack of contact and feedback. Effective online education requires secure technology, experiential learning, teacher preparedness, learner motivation, and robust feedback mechanisms. Future learners, particularly self-directed ones, may prefer online learning. Interactive educational settings, collaborative platforms, and supplemental online programs enhance accessibility but require constructive instruction. Institutions must ensure equal success in online courses and traditional classrooms to meet diverse learner needs and sustain enrollment. By employing rigorous inclusion criteria and a systematic approach, this study offers insights into the various paradigms of online learning. However, there is still a need for additional research on these topics.

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1. Introduction

Online teaching and learning has its own critic (Brooks, 1997) Many individuals have poor perceptions regarding online education (learning) due to its performance, which highlights both the positives and negatives. The field of distance education has historically experienced several problems, including impersonal and unsatisfying relationships (Abuhassna, Yahaya, & Education, 2018) also they studied about the remote learning, online classes or instruction, and learning management systems, on the other hand, make a substantial contribution to the remote learning arena and boost student satisfaction. Learning that was once done face-to-face in schools has evolved into distant learning (Affouneh, Salha, & Khlaif, 2020); Dhawan, 2020; Favale et al., 2020). College education provides the necessary prerequisites for enhancing the quality of existence and resolving issues, which are vital for maintaining the country's economic growth and democratic values. University education has shifted its focus from 'nation - wide learning' to 'worldwide education,' from 'yet another education for few' to a 'long life understanding of everything,' and from 'trainer-centeredness learning to student-centeredness learning. (Chauhan & Research, 2016).

The study has examined 55 articles which were published across two decades, where in most of the articles were written in the pandemic era between 2020 and 2022 as shown in Figure 2.

Learning has progressed from the traditional classroom to distant learning and, more recently, online learning, in which students learn in "invisible classrooms" (Sutherland, Balacheff, & Learning, 1999) . With the growth of technology and the Internet, educational institutions are adjusting their learning methodologies to satisfy customer requests for an ideal learning environment.

- **E-learning** is described as the knowledge transfer using electronic means such as the Internet, in a well-curated study material with the acceptable credential. E-learning is a content-based framework that uses digitization and other curriculum materials to give learners personalized, learner-oriented accessibility, enjoyable,

and participatory learning opportunity that actively encourages knowledge acquisition (Rodrigues, Isotani, & Zarate, 2018)

- **Distance learning**: (Keegan, 1996) suggested that the term distance education is an "umbrella" term, and as such, has terms like correspondence education or correspondence study that may have once been synonymously used, being clearly identified as a potential offspring of distance education. As new technologies emerged, learning seem to have become the emphasis of all areas of need, and powerful words like distant learning were reintroduced to bring out the limits associated with "distance," that is duration and location **(Guilar & Loring, 2008)** .

- **Online learning**: 'education delivered via the internet [2] This is further broken into asynchronous virtual classrooms that do not happen in real-time and synchronized courses in which the instructor and the student engage available at the same time. [3] Allows students to access data via the Internet, engage in virtual chats with an instructor as well as other learners, and submit exercises and take questions online. (Laaser, 2011).

- **Blended learning**: The hybrid style of engagement that mixes in-person face-to-face interactions with virtual interaction [4] While hybrid learning is a composite paradigm, either the face-to-face or online components may take priority.

As shown in the figure 2, online learning was categorized into four themes and a framework across Technology, Human, Design and also Course and Evaluation was developed through this study.

College students' perceptions on the usage, implementation, and approval of essential online education under COVID-19 stay-at-home orders. Students, instructors, and educational facilities should not be misled by the notion that online learning is synonymous with emergency online learning. Face-to-face education is supported by an entire ecosystem (learning centres, extracurricular events, archives, and so on). (Patricia Aguilera-Hermida, 2020) . In

India, higher ed refers to study schemes well beyond the high school level that lead to a bachelor's or maybe a diploma. Indian higher education like in many other nations has a university aspect and a non-university aspect. Degrees are awarded by private institutions, universities that are deemed, and universities of great importance, whereas diplomas or accreditations are offered by other non-university establishments. India's higher education system is currently undergoing a significant transition in terms of improved accessibility. With technology changing at such a fast pace, new methods of acquiring and sharing knowledge and information are now being created and applied to higher education. Given all of these shifts, higher education institutions must discover ways to enhance the quality of web-based learning to optimize learning, including efficiently and successfully synchronizing modern technologies with course material and guidance.

In (Berge & Mrozowski, 2001) research, they have classified each article about (Sherry, 1995) in which, ten research challenges in distance education themes: redefining roles of both educators and learners, technologies used, design issues, strategies for encouraging studying, characteristics of learners, and assistance, problems concerning functioning procedures and management access and equity, and costs and benefits are segregated and studied. Distance learning in higher education is not a new occurrence in the global field of education, but it may be unfamiliar to students, instructors, and parents in elementary and secondary school. Indeed, it has grown in favour of a novel means of boosting research and learning audiences during the COVID-19 epidemic and using the network and information technology to construct a learning system, specifically the remote educational system or online education as an online education paradigm (Singh & Thurman, 2019) .

(Kusmaryono, Maharani, & Rusdiantoro, 2020) specifies that Online learning systems can promote student involvement and engagement, impacting students' levels of optimism and pessimism during distance learning or learning online.

The area of e-learning is still dealing with the misunderstanding caused by the overuse of the phrase. We discovered that institutions and researchers are adjusting and strengthening their grasp of online learning trends. Scholars are seeking to alleviate uncertainty and reflect on the field's ongoing progress by mentioning the ambiguity in the definitions(Singh & Thurman, 2019) .

On the 30th of January, 2019, India announced the very first case of COVID-19, which originated in Wuhan, China. The rapid increase in instances prompted the Government of India to impose a state-wide lockdown on March 24th, resulting in the shutdown of educational institutions(J. Yang et al., 2022) .

The COVID-19 epidemic has had a dramatic impact on practically everything and anything from several viewpoints. This has had a specific impact on how people used to live, learn, and work, resulting in what has become "the new normal" throughout the unusual times. This new trend of studying online is related to the idea of learning and working remotely and gaining widespread appeal(Chiodini & 2020) .

The shift from in-person to online classrooms virtually overnight as a result of the COVID-19 epidemic and social distance limits provided an enormous obstacle to the educational system. This shift may be abrupt and uncomfortable, and it may linger for a bit, but the quality will not suffer. Online classes that are comparable to the level of instruction students get in a traditional in-person session must be provided (Ozfidan, Fayez, & Ismail, 2021) .

The need of the hour forced higher education institutions to abandon traditional instructional methods in favour of online platforms such as Zoom, Jitsi, Microsoft Team, and WebEx. Teachers were able to keep teaching after the epidemic by using videoconferencing methods (digital videoconferencing [DVC], interactive videoconferencing [IVC], and online videoconferencing). The emphasis on the educational/learning process has switched from passive teacher-centred learning to active learning-centred teaching/student-centred learning (Avasthi, Sharma, Kaur, & Kalra, 2021) .

The efficacy of online teaching is based on teachers' online teaching skills, students' readiness to listen carefully and absorb focus, and the standard

of the curriculum presented during online teaching(Asiry, 2017) .

2. Methodology

The Systematic Literature Review (SLR) method is used in this study. "A systematic literature review is a carefully designed assessment that uses a methodical and precise approach to detect, choose, and constructively assess the findings of the research investigations included in the review"(Rother, 2007) . The study examined literature on the various aspects of online learning which were conducted across different parts of the world and share a similar notion about the term "Online Learning". The review is focussed on the literature post-2006. We have collected the relevant studies from Google Scholar and EBSCO by using the following keywords; Online Learning, Online Education, and Online Learning Environments. We developed a conceptual model based on the various paradigms of online learning and have identified research gaps and future research areas.

2.1. Eligibility Criteria

Prisma (Preferred Reporting Items for Systematic Review and Meta-Analysis) Framework has been used for the screening process. We identified 55 relevant studies from ABDC and SCOPUS-listed journals. The investigation was initiated with 210 papers as mentioned in Figure 3. Further, 47 articles were excluded at the abstract level and 163 articles were investigated. 117 Articles with full text availability were studied and were segregated into two categories of being included or excluded. We rejected or accepted all publications at the initial level considering the subsequent criteria. Studies are sought to focus on both the pre-and post-Covid-19 Pandemic eras of online learning.

2.1.1. Exclusion Criteria

Those studies that did not contain any of the keywords given;

- Any studies that were not in English;
- The studies which were not complete text;

- Conference papers, Editorial, and Book Chapters;
- Any studies that were discovered to be duplicated.

2.1.2. Inclusion Criteria

- Any research that includes any of the given keywords;
- Research in English
- Complete versions of papers
- Review articles.

After reviewing the articles, we removed all papers unrelated to the investigation at the second level, and we obtained 55 relevant research articles as mentioned in the prisma framework in Figure 3.

2.2. Research Questions

The research questions seek to investigate a current lack of clarity in a domain of concern and indicate the need for more inquiry. An effective Research Question aids in the development of a focused provable study and the creation of an argument that is logical (Ratan, Anand, & Ratan, 2019) .
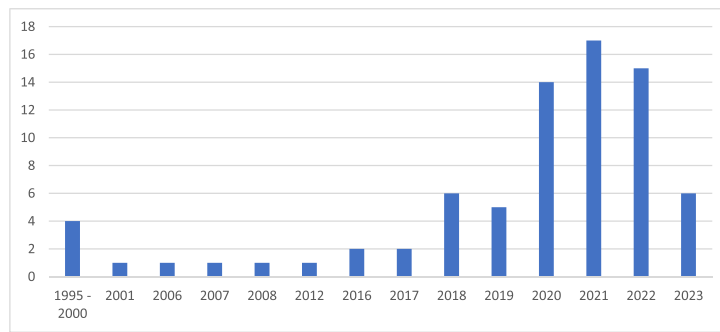
The research questions framed for this study are:

RQ1: How is Technology affecting the online learning process?

RQ2: How are Human Factors affecting the online learning process?

RQ3: How do Course and Evaluation affect the online learning process?
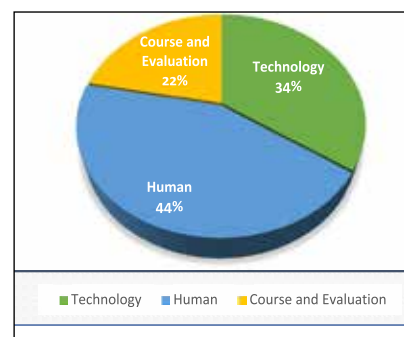
Figure 1: Percentage of articles paradigm wise
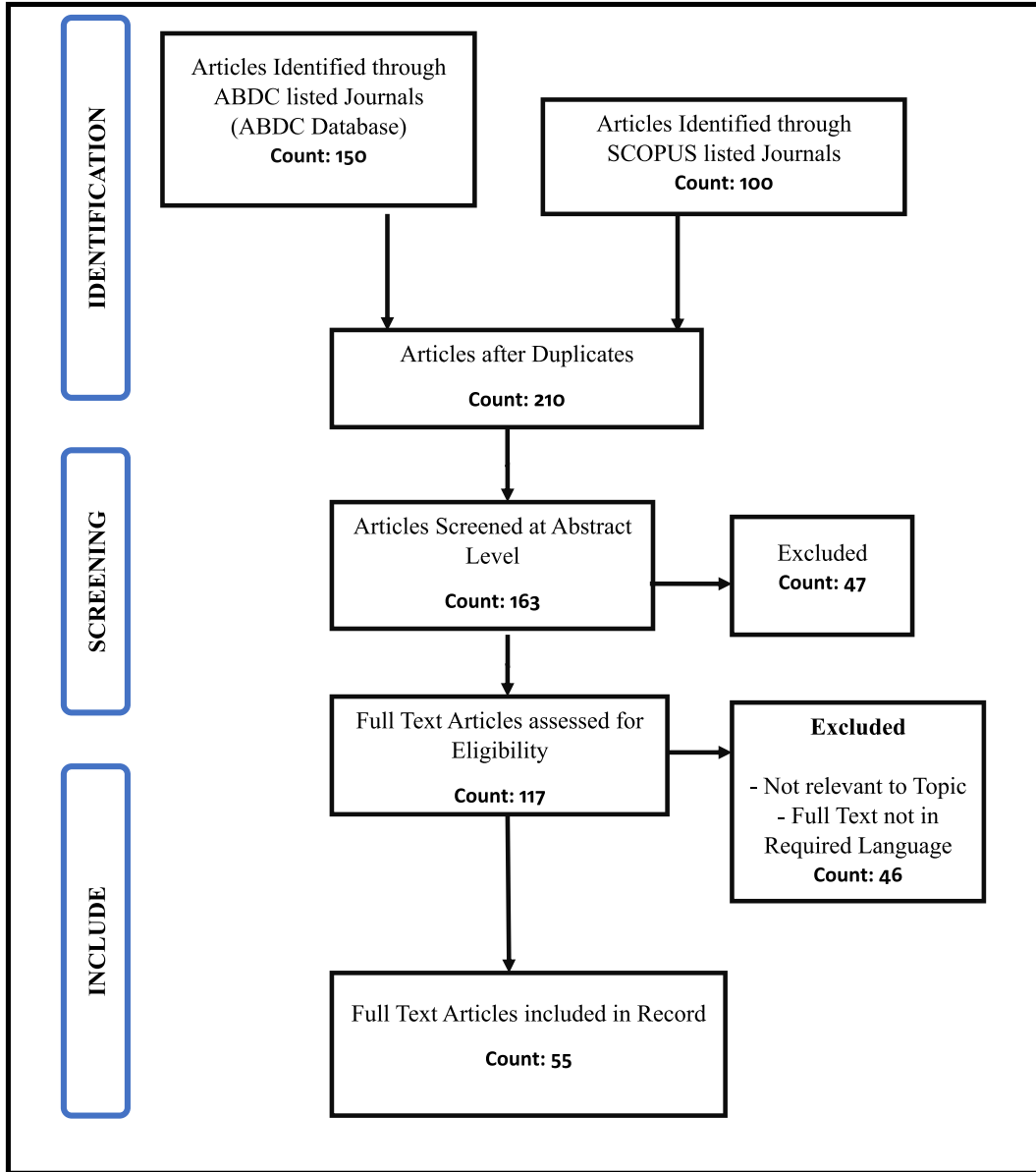
Figure 2 : No. of Selected Articles Year wise

Title	Rating	No. of Papers
Academy of Management Learning and Education	A*	3
British Journal of Educational Technology	A	5
Accounting Education	A	1
Studies in Higher Education	A	5
Active Learning in Higher Education	B	2
Journal of Management Education	B	1
The International Journal of Information and Learning Technology	C	5
Total		22

Table 1 : Number of papers from ABDC Listed journals

Title	Cite Score	No. of Papers
Interactive Learning Environments	11	4
Online Learning Journal	7.4	17
Knowledge Management and E-Learning	4.5	4
E-Learning and Digital Media	4.3	8
Total		33

Table 2: Number of papers from Scopus indexed journals

PRISMA FRAMEWORK

IDENTIFICATION

Articles Identified through
ABDC listed Journals
(ABDC Database)
Count: 150

Articles Identified through
SCOPUS listed Journals
Count: 100

Articles after Duplicates
Count: 210

SCREENING

Articles Screened at Abstract
Level
Count: 163

Excluded
Count: 47

Full Text Articles assessed for
Eligibility
Count: 117

Excluded

- Not relevant to Topic
- Full Text not in
Required Language
Count: 46

INCLUDE

Full Text Articles included in Record
Count: 55

Figure 3: Prisma Framework for paper selection for this study

3.   Results

PARADIGM FACTORS AFFECTING THE ONLINE LEARNING PROCESS

Instructors' and students' experiences and perspectives on online education are crucial to understanding the different factors that can affect it, moreover, resources, accessibility to technology, satisfaction and quality of the content are the major ingredients to fetch a better online learning environment for teachers as well as learners (Weldon, Ma PhD, Ho, & Li, 2021). The study has contributions from various countries and different notions, thus there were themes made to segregate the parameters that influence the ongoing process of online learning.

As shown in Figure 1, most of the studies focused on the Human aspect (44 %) and technology (34 %), and few studies enlightened on how the course and evaluation aspect (22 %) overrides the current new normal – "Online Learning".

The findings of the literature review have been summarized into three broad themes:

1. Technology 2. Human   3. Course and Evaluation

3.1. Technology as a Paradigm

Learners' educational encounters and successes in asynchronously online educational settings are facilitated by technological advances, presentations with multimedia, and social networking tools (Kumi-Yeboah, Kim, Sallar, & Kiramba, 2020). Online learning resources have become an indispensable aspect of the higher education experience for learners across all disciplines(Ellis & Bliuc, 2019). Interactive features in online learning environments may be beneficial tools for increasing learning efficacy. Personal ownership of random access to material in interactive video may result in greater learning results and satisfaction among learners (D. Zhang, Zhou, Briggs, & Nunamaker Jr, 2006) . Interaction is a vital part of technology for learning and instructional practice. The rising popularity of sync conferences via video is due partially to the substantial degree of involvement among those who participate(Kumi-Yeboah et al., 2020) . Technical assistance enabling learners and instructors to effectively make use of the facilities, technology, and platforms for learning online is critical to an educational institution's excellent online educational experience. Furthermore, technological assistance should be continually modified and realigned to meet the demands of an institution's teachers and employees(Pedro & Kumar, 2020). The use of social media has quickly become widespread, with a substantial percentage of mankind using it.(Rospigliosi, 2019). Technology such as multimedia serves a vital part in learner participation and engagement in online discourse and the results of that study showed that social media tools aided respondents in creating interactive instructional settings and developing cooperation abilities required for effective computer-supported shared learning (Kumi-Yeboah et al., 2020).

Internet educational programs can adopt a "global + local" strategy that takes into account the local requirements and various global viewpoints in the course material and also validates how well can we teach with the given technology. (Hwang, 2018). EdTech is a rapidly increasing section of the worldwide, private 'educational technology' market. A big trend that began in 2012 was institutions giving free and universal' massive open online programs (MOOCs) via EdTech portals. From approximately 2015, a second big surge of deeper, funded, and validated MOOC-inspired courses and complete online degrees emerged. This collaborative re-imagining and re-packaging of academic institutions have been labelled as a transition towards a 'post-MOOC' future (Thomas & Nedeva, 2018). Another mesmerizing element is experiencing online games in class "which offers a genuine evaluation that promotes numerous modern abilities such as problem-solving critically and creativity. Additional professional development options are one way to help instructors get hands-on training and it acts like the link connecting virtual games & learner knowledge which is a very broad aspect (Hébert, Jenson, & Terzopoulos, 2021). Digital games will not and frankly cannot be integrated into teachers' lesson and unit plans if classrooms do not have access to devices(Hébert et al., 2021). Any massive look at an online educational setting is likely to necessitate a substantially improved technology basis, diverse categories of instructors, an entirely novel array of instructional skills and advancement abilities, more technically proficient staff members, as well a unique instruction environment to advocate that instructors have yet to fully comprehend (Hwang, 2018). As online educational tools become more integrated into the higher education educational environment the calibre of learning for students becomes more affected by their encounters with these freshly introduced resources. Many study paradigms examining the impact of online studying technology on improved results are still yet to specifically identify their function and significance(Ellis & Bliuc, 2019). When using technology in teaching, it is important to guarantee that enough infrastructure for technology and technical assistance are provided inside the learning processes(Batdı, Doğan, & Talan, 2021). It is critical to build programs to encourage the utilization of internet-based resources for perpetual education

that assist with context-specific, biographical, to long-term aspects of learning as well as incorporate learning strategies into community backing (Eynon & Malmberg, 2021). The unconventional programs that need students to do practical tasks have been severely impacted by the epidemic. The good news is that technological advancements that enable better educational experiences, such as labs in the use of virtual reality (VR), augmented realities (AR), and deeper adoption of the use of AI and learning, are being heightened. To meet the growing need for online learning during the global pandemic, numerous platforms for online learning accomplished massive iteration of development and ran short investigations virtually weekly (B. Yang & Huang, 2021). An impression of the complicated nature of the selected technological tools for online learning & an absence of understanding of both security and ethics aspects of utilizing online learning apps is another stone under the light(Šramová, 2023). When compared to the conventional technique, teaching using modern technologies poses a significant challenge for instructors(Bisht, Jasola, & Bisht, 2022). Technological advances are meant to aid in the practice of skill-intensive, hands-on experience-required courses(Schneikart & Mayrhofer, 2022). Digital competence refers to the ability and skill sets required to locate, organize, evaluate, and create knowledge via digital devices(Heflin & Macaluso, 2021). The primary technical limitations are digital disparities, lack of credible connectivity to the internet, low preparedness and competence in technology among teachers and learners, and a shortage of technological solutions. Also, thoughtful investments must be done to foster a digital civilization and fairness (Ndibalema, 2022). Through the advancement of technology in order the world of online education now offers a thrilling chance to better the learners' educational experiences by providing engaging and personalized content, in which the role of dynamic visual instructional resources in online tasks has enhanced learners and their interaction with the material and real-life achievement(Ha & Im, 2020). Professional development and better training on how to make use of cutting-edge technology and the integration of technical and instructional skills for carrying out lessons that improve learners' behaviour-related, intellectual, and psychological engagement must be provided to

teachers from higher education institutions (Heflin & Macaluso, 2021). Efforts to integrate tech must be founded on creative instructional practices and are strongly encouraged by school administrators who see technology as a critical instrument for deeper participation in learning. Transformation in education can occur if educators are empowered to take ownership and lead the shift in their classrooms (Alhashem, Agha, & Mohammad, 2022). Instructors need to grasp how technological advancements, the setting of institutions, and phenomena like winners-take-all systems may impact the responsibilities of instructors(Whitaker, New, & Ireland, 2016).

3.2 Human as a Paradigm

During the pandemic, both educators and learners were protected from educational decline by accessing and using educational platforms. Whereas when we analyse the impact that online learning has created, we could elaborate on many aspects of human, considering both teachers and students; in terms of their attitude, perception, and majorly the teacher element. (Zulfiqar, Ajmal, & Bano, 2023). Acknowledging teachers' want and goals as instructors are crucial for educational institutions that offer online instruction and programs. Additionally, discovering further how instructors embrace and apply technology for online learning might assist colleges and universities authorities to encourage favourable support and encourage staff initiatives to improve student achievement in courses offered online, which in turn changes the attitude and opinion of teachers and students towards online learning (Wingo, Ivankova, & Moss, 2017). The overall experience of learning online is in connecting with other learners proactively and constructively (Tseng, Kuo, Yeh, & Tang, 2022).

3.2.1. Satisfaction

The five aspects identified as important for increasing online education lasting satisfaction in the setting of higher educational institutions were determined to be the quality of information, task-technology fit, infrastructure quality, utilitarian value, and usefulness. The cause-effect linkages between various aspects and continued satisfaction may be utilized to investigate students' and instructors' perspectives in contexts such as mobile education, electronic commerce, social media, etc

(Al-Samarraie, Teng, Alzahrani, & Alalwan, 2018). Feeling satisfied in an online class had a strong direct influence on the desire to continue studying online, indicating that whenever learners taking classes online are happy with the way they learn, there is a larger possibility that they would continue taking further online courses (Tseng et al., 2022).

Academic achievement and learning together are mediated by satisfaction and involvement (Erragcha, Babay, Bchir, & Saidi, 2022). Learners believe that successful online education involves encouraging students to achieve, interacting clearly, accommodating the requirements of learners, giving them access to a variety of content, having a well-structured course, using a variety of sources, giving them clear feedback, and fostering meaningful conversations. These materials could improve communication between the teacher, learners, and the instruction material in a virtual learning environment (Ozfidan et al., 2021). Learning organisations should select educational websites that are optimised for mobile and provide appropriate technical assistance to aid learners in resolving any possible connectivity and technological issues. And also tailoring of an online curriculum to learners taking various courses that are satisfactory (Yan et al., 2021). It is possible to use motivations and educational preferences to customize the delivery of computer-generated knowledge to improve student involvement with online education resources which would indeed enhance the satisfaction level of online learning (Ilin, 2022). Concerning mental participation, it's important to consider how students view and feel about studying online. Student happiness, feelings of involvement and satisfaction are strongly correlated with attitudes and previous experiences along with online educational systems (Salas-Pilco, Yang, & Zhang, 2022).

The Learners' favourable mindset further highlights the value of e-learning as a versatile, practical, and efficient technique of method of instruction and learning which indifferently satisfied the learners as well (Zulfiqar et al., 2023). And for better satisfaction levels It may be necessary for teachers to use customized instruction, participation, and performance strategies (Talsma, Chapman, & Matthews, 2023).

3.2.2. Teacher role

The amount of participation with internet-based educational activities is favourably connected to the perceived level of digital abilities among instructors(Eynon & Malmberg, 2021). Teacher development programs are one method of assisting instructors (Hébert et al., 2021). Educators' perceptions of inefficient online instruction are a result of a variety of factors, including low participation rates, a failure to produce interactions with significant value, and difficulties with successful cooperation in a virtual setting (Li, Zhou, Bostian, & Xu, 2021). Instructors' responsibilities in online Educational institutions should refocus their strategy for assisting teachers who educate online and build a comprehensive plan to help all students, including students with impairments, actively participate in online learning (Guilbaud, Martin, & Newton, 2021). Educational settings will keep shifting, maybe in manners that have not yet been recognized. Conventional instruction and including subjects and concepts might grow into becoming supplementary objectives in comparison to roles such as instructor of learning and the examiner of learning outcomes, with instructor-to-learner and interactions between students being significant contributors to online educational outcomes (Hwang, 2018). Faculty training and development sessions to develop online courses and guidelines to frame it as well as technical assistance and instruction designing would be of greater support to an efficient online learning environment. (Pedro & Kumar, 2020). University administration should set the bar high and make sure the whole educational society not only believers, takes advantage of the potential that digitization provides to improve the quality of education and flexibility. Furthermore, management should take the necessary steps to promote creative approaches and steer consumers' expectations regarding the teacher aspect. Understanding the qualities of educators is crucial in university administration. When this level of comprehension is reached, the next stage is to create structures that support these qualities (Bøe, Sandvik, & Gulbrandsen, 2021). To develop the documentation, educators must review their online instructional plans and adapt research evidence to their circumstances. Colleagues within the same institution and outside of it might be motivated by this data, like broadcasting it at

meetings and on online platforms. Teachers may continually enhance the instructional layouts of their online courses with the use of local research (Hrastinski, 2021).

Thus, teacher traits are tough, but they reaffirm that a teacher with an authoritative presence in the classroom and as an individual of influence contributes to the students' assessments of exceptional online instructors (Batdı et al., 2021). Instructors can do this through providing a variety of educational tasks that are difficult, and pertinent and aid in the achievement of curriculum objectives(Heflin & Macaluso, 2021).

Teachers who are purposeful, aware, scheduled, and composed in their personality and educational endeavours boost the probability that learners will recognize the value of ethics and feasible insight, even though there isn't any assurance that high-quality online instruction and facilitating will result in the development of the qualities sought (Harrison & Laco, 2022). Through continuous and unambiguous interaction, instructors may train learners on such goals so that they are not left alone, which results in dissatisfaction instead of feeling autonomy and liberty, which builds confidence (Heflin & Macaluso, 2021). Instructors who worked with an educational designer and took part in retraining for instructing online scored highly. Online teachers may broaden their knowledge of literature and best practices and concentrate on activities that are more crucial to the successful completion of a course taken online (Martin, Kumar, & She, 2021). When it comes to character building, online learning and its perception of personality development comes down to the duty of a teacher to function as an online moral educator and coach in a way that ensures independent growth in personality (sought). The ultimate objective of online moral education ought to be to let learners seek, want, and openly explore their own personality development. The more general practical consequence is that a well versed instructor can broaden ways for learning aims to strengthen and expand interpersonal relationships, which are essential for both individuals and social prosperity (Harrison & Laco, 2022).

3.2.3. Perception

Two of the most significant hurdles in online learning and teaching have been observed as the perception

and real rise in the effort necessary for classroom instruction online, as well as the insufficient acknowledgment and support from institutions for professors teaching online (Pedro & Kumar, 2020). The way students feel about learning online is crucial for their inspiration and progress (Van Wig et al., 2022). The educational method that students choose is determined by how they feel about interactions with other learners and teachers (Spencer & Temple, 2021). Learners associate involvement with efforts expended in virtual classrooms, and, particularly, with hours committed to their study. It's feasible to design virtual classes that learners consider to be major learning sessions in which they know as much as they'd get in a traditional classroom setting. The unseen syllabus of online classes could provide the initiative and independence needed to succeed, preparing learners for being more effective as adult scholars but their perception towards online learning will remain ambiguous (Heflin & Macaluso, 2021).

A high-end good perception and involvement by learners in terms of online learning is also proven to have a favourable influence on how they learn in the interactive online education environment(Ngai, Lee, Ng, & Wu, 2019).

Perceptions about the standard of online instruction and student participation are low in the conventional context. Students' educational principles impacted their perceptions of online instruction significantly(Shreaves, Ching, Uribe-Florez, & Trespalacios, 2020). Faculty members who took their professional growth sessions have better perceptions and it can be seen that the innovative traits have changed before and following PD (Richardson, Lingat, Hollis, & Pritchard, 2020). Personal objectives, circumstances, choices, worries, experiences, and passions can all have an impact on how instructors perceive online instruction. Self-confidence was one element that enhanced their assessments of their existing technological skills and that in turn influenced their readiness for teaching online(Shreaves et al., 2020). The readiness of colleges and universities during the pandemic had a minimal effect on students' intentions to engage in online learning (Nikou & Maslov, 2021). However, with the steady phase after that, the perception towards technology and online courses has risen and it has become a part of the energy. Universities

and colleges proceeded to create and offer facilities (such as laptops rental programs, student technology memberships, and monetary aid) to promote digital equity for students studying online throughout the COVID-19 epidemic(Weldon et al., 2021). The internal variables that inspire instructors to think about their teaching in a particular way include pedagogical beliefs and views of teaching/learning (Jensen, Price, & Roxå, 2020).

The association between learners' aspirations and instructional environment elements influences their perceptions of their learners and educators' relationships (Jensen et al., 2020). Students' perception of the competencies of online learning, was observed, and noted that age, gender, education majors and status have no significant difference in the competency perceptions about online learning (Martin, Stamper, & Flowers, 2020). At the same time, Learners' perceptions of unfit online education included ambiguous requirements for coursework, an excessive workload, & a lack of input regarding tasks and evaluations from the teacher (Li et al., 2021). It can be understood that there is a higher level of perception towards online learning by learners who are self-directed(Bayrak, 2022).

But when it comes to assessment of students, the perceptions towards the online environment take a turn and stop at being more receptive and comfortable as Online exams are less challenging and stressful for pupils than traditional exams (Bisht et al., 2022). Gender plays another key role in the overall perception of the online learning element. Female learners were more accepting of studying online when it comes to projects, study habits, and convenience, it is clear that a person's gender plays a crucial influence in adoption (Bisht et al., 2022).

Feedback on the online learning system is more about the perception of the students and how they want the system to be. It might be different for different learners, some might prefer audio, some video or some might be indifferent about both (Espasa, Mayordomo, Guasch, & Martinez-Melo, 2022).

Finally, it can be conceded that the learners' perception regarding new developments in online education can be - gaming and internet communication were overwhelmingly favourable (Zulfiqar et al., 2023).

3.3. Course and Evaluation

3.3.1. Design

To improve online education encounters, teachers build instructional courses around group projects and participatory online platforms (Erragcha et al., 2022). Experience-based learning necessitates thorough activity planning, designing, and teaching assistance in an online learning environment (Leyer, Yuan, Wang, & Moormann, 2023). The teacher should look into the materials selected to meet the learning goals that are accessible and available to all students with no undue technological, economic, or administration obstructions. (Debattista, 2018). The education sector was uniquely affected by the pandemic considering it followed a certain course all over the first and second waves. The three major turning points in the initial wave were resentment, amazement at the swift shift, and adaptability. The significant moments of the subsequent phase were resentment, randomness, and planning for the future (Šramová, 2023). While online learning is being used as a foundation for people entering professions that need moral rectitude by virtue thinking and virtue practice, it is frequently expressed in the economic jargon of efficiency. Teachers may make sure that their educational experiences are transformational rather than mere transactions by putting a priority on character development (Harrison & Laco, 2022). Even when students had a chance to express their ideas clearly when courses were designed using Twitter. Their interest in and impression of the utility of Twitter for class might've increased by the amount of Tweeting engagements during the term(Rohr, Costello, & Squires, 2023).

3.3.2. Assessment

Learners believe that when Tweets were used for assessments, there was more involvement and participation (Rohr et al., 2023). Performance assessment in an online context is determined by the amount of time it takes to accomplish a job, the amount of time spent working with assistance, and deviations from the desired outcomes.(Schneikart & Mayrhofer, 2022).

Assessments done through online learning platforms help to establish interactive and constructive feedback. Furthermore, it helps learners in

anchoring knowledge via frequent practice with immediate feedback assistance (Randall & Jaynes, 2022). It has also been seen in studies that online learning performance among students varies at various levels. It depends not only on the platforms but also on the mode in which the sessions are learned, synchronous or asynchronous, which clearly defines the students' need of the hour(Moodie, 2021). The importance of everyday life lessons as evidenced in digital course design eventually assists in creating student engagement and online learning effectiveness. Furthermore, if evidence is utilized as examples, it will aid in the advancement of the online instructional design (Hrastinski, 2021). Student Involvement could be an effortless one, but it's an effective strategy to improve performance among students. Instructors must set clear performance standards for their learners to accomplish this (Duncan, Kenworthy, & McNamara, 2012). Persistent training activities were found to be a crucial element in building the relationship between student participation and performance, with highly involved students performing far more effectively than others (Rajabalee, Santally, & Rennie, 2020).

3.3.3. Student Engagement

Under the framework of an online course, interactive instruction fosters minor but important alterations in the thinking of learners (Sobko, Unadkat, Adams, & Hull, 2020).

The online environment is more influenced by effort enforcement, grade aim, academic confidence, performing confidence, gender, years of age, and economic status(Talsma et al., 2023). It is equally crucial to provide clear direction for navigating the process of learning and to increase interaction and student participation in online courses more consciously and openly. (Li et al., 2021). The daily experiences if included in the online courses that act as live examples for students can bring in student engagement and self-efficacy toward learning online (Hrastinski, 2021). The influence of students' engagement and their thinking about course content gives us the overall impact of the online learning experience on learners' minds (Sobko et al., 2020). Instructors should be focused not just on motivating learners to participate at greater intellectual levels, but also on motivating students to engage in discussions during classes (Duncan et al., 2012).

Cross-team kind of collaboration and sharing improve cognitive learning, while collaborated decision-making improves epistemological learning (Pee, 2020).

3.3.4. Pedagogy

The first wave's major turning points were astonishment at the rapid shift, a sense of nostalgia and adaptability. The turning points of the subsequent wave were a sense of nostalgia unpredictability, and preparing for the future (Šramová, 2023). Both students and teachers view media use and collaboratively built course builds, like integrating Tweeting postings with other lesson plans and projects, as beneficial to education (Rohr et al., 2023). Even when the learners were put into synchronized remote instruction using the Teams software program. It was observed that the learners who had taken down daily notes were better at setting objectives, scheduling, monitoring themselves, and self-assessing (Mou, 2023). Learning through applications and getting an experiential learning environment works well in online learning. Additionally, experiential learning calls for the thoughtful designing of lessons and teaching assistance that enables learners to have satisfying academic results(Leyer et al., 2023).

The conception of online education and instruction needs to prioritize creative [1]pedagogy because technology is frequently seen as a solution to assist learners online (L. Zhang et al., 2022). Establishing collaborative activities (e.g., ice-breakers, idea mapping, goal setting) to support the establishment of trust as well as stream media clips to show methods and assist students in visualizing ideas is a keen method of online learning pedagogy(Tseng et al., 2022). The implementation of interacting educational tools can be a tremendous force for favourable, improving access and enabling the exchange of ideas. however, for such possibilities to be totally understood we must foster a fundamental pedagogy for educators, students, and the individuals who design, purchase, and oversee our interactive educational environments. Adopting online learning pedagogy needs to be pushed as a formal element of academicians' job duties, with real benefits and advantages that might include professional recognition, and monetary and materialistic prizes(Debattista, 2018).

4. Discussion

Based on the review of 55 research articles, we could analyse the research status of paradigms that influence the online learning environment. The majority of the articles were focused on Course and evaluation and the Human paradigm, unlike the studies that were conducted until a few years back, where the focus was partially distributed between the technology aspects and student/teacher perception and readiness to accept the online learning aspect.

a. **Technology affecting the online learning process**: From the studies, Broadly, it can analyse that instructors and universities must consider the following elements: a) providing comprehensive and reliable accessibility to online materials, b) regularly using virtual materials, and c) teaching not just learners but also instructors to utilize ICTs-in. Disruptions and malfunctions have the potential to arise from a lack of advances in technology facilities resulting in poor comprehending for learners.

b. **Human aspect affecting the online learning process:** The studies show the role of teacher and student in building a better online learning environment. There are studies which shows that the instructor's responsibility in the World of Online Education addresses a) Educators have the responsibility for developing and organizing interesting, useful, and supportive portions of training courses that are available online. b) Instructors act as mentors and mediators. Specialists assist learners in navigating the syllabus, clarifying issues, and providing feedback in a timely manner. c) Online educators are expected to be versatile and attentive to all of their learners' changing requirements. This calls for being willing to change the content of the course, projects, and evaluations in response to student comments and performance. d) Instructors are obligated to ensure that the learners are able to easily access and engage using the information. taught. Where as in terms of students the expectations are driven towards certain elements such as a) Students who participate in online courses want to be self-motivated, self-directed in the journey of learning online. b) Engaging learners is essential when it comes to learning through the Internet, and the learners enjoy participating in interactions, asking queries, and collaborating with others in their classes. c) Learner attitude toward On-Line education is considered a self-driven technique, which can be beneficial to those who seek flexibility in their pursuit of knowledge. d) Student perception on the assessments of instructional quality expand on questions related to the degree of contact with lecturers and classmates. e) Students attitude grows up to value customized material as well as materials that meet their specific requirements, this can lead to a favourable stance to learning online.

Course and Evaluation aspect affecting online learning process: Because of the tremendous rise of online education in recent years, there is an increasing trend in examining the impact of course design in defining how students interact with online learning. Given technological improvements and the ease of connecting to the internet, studying online has emerged as an acceptable alternative to conventional educational settings. However, its effectiveness is heavily dependent on the manner in which courses are created and arranged. adept e-learning encounters are built on the efficient structuring of courses. It entails developing an organized, stimulating, and dynamic curriculum that meets a variety of requirements of students. (Debattista, 2018) found that the instructional design had a significant impact on student participation, appreciation, and cumulative educational results. Concise course goals, easy-to-understand data, and chances for learners to provide input and evaluation are all features of well-constructed e-learning programmes. The review and evaluation tools have a considerable influence when it comes to the internet-based education process. The notion of summative evaluation is introduced in the study by (Nicol, 2006) who emphasise the need of prompt and positive criticism in e-learning programmes. Effective curriculum design incorporates a wide range of measurement modalities that are aligned with curricular goals and allow for personal and peer-evaluation (Hrastinski,2021). Students are

better prepared to participate in the educational process if they are aware of what they are supposed to get out of it and what it is that they will be capable of accomplishing by utilizing the content. they have acquired. This can lead to increased quantity and quality of enthusiasm among learners, which can lead to improved learning results. The quantifiable objectives of the academic system that specify all a student is likely to know, comprehend, and be in a position to accomplish after finishing the program are referred to as what students learn. They serve as a foundation for evaluating the quality of instructional and educational operations. Educational accomplishments are important when using virtual learning and instruction since they provide a means to guarantee that the students are fulfilling the program's intended goals. Appropriate outcomes for students are critical to attaining its overarching objective of improving student comprehension and accomplishment.

Contrary Views: Few studies have had opposing viewpoints on key topics, such as student satisfaction with learning and student participation. Satisfaction among learners with e-learning instructional procedures was observed to be variable in few researches. According to certain research, learners were less dissatisfied with online methods of teaching and learning than with regular classroom instruction. Whereas some researchers mentioned online teaching and learning procedures gave students more freedom, ease of use, and easy access to a more extensive array of resources for learning. However, according to several research learners seemed less happy with the online educational process than they were with normal teaching in the classroom. According to the research, instructional and learning procedures lacked social connection, feedback, and support.

The research findings on the engagement of students using online learning and teaching procedures were varied. Some research found that online teaching-learning procedures engaged students more than traditional classroom instruction. According to the studies, online teaching-learning procedures promoted active learning, cooperation, and reflection. However, according to a few research students remained less engaged in online educational activities than in conventional instruction in the classroom. According to the studies, online teaching-learning processes lacked contact, motivation, and feedback which are the key elements that lead to student engagement.

Whereas the views on the integrity of academics in online education also differs from one another. Certain students value the convenience of online examinations, while others have concerns about the possibility of dishonesty or plagiarising in the online environment.

Patterns that are emerging shows direction to a) getting the most out of technology is important to the effectiveness of the educational process. This entails using secure connections to the web as well as easy-to-use computing and other solutions. b) Studies likewise emphasized the significance of instructional practices including experiential education, classroom collaboration, and review in increasing the participation and comprehension of students in results. c) Also, the research discovered that teacher preparation and instructional materials are critical in creating an environment where educators are competent in their use of digital instructional methods and resources. d) Learner preparedness, which includes computational abilities, drive, and self-management, has also been highlighted as an important aspect of the efficacy of the e-learning educational procedure. e) subsequently, it was also observed from the studies that there is a pattern on how many studies emphasized on the crucial role of feedback, from educators as well as fellow learners, and few studies pointed out the need of, the instructors giving the learners the proper direction and support they need to enhance their academic performance.

A review of these articles pointed out that future learners who are very self-directed and motivated to study would choose to study online (Bayrak, 2022). This cuts the path to understanding all paradigms which has equal focus on the role of a teacher, student perception, designing the course, assessment, etc. It could be reaped as the Interactive educational settings provide the tools to capture, assess, as well as react to learner behaviours, and it is probable that following the shadow of the epidemic, these types of systems are going to have a more important role in the way instruction and learning

acquisition take place. The use of collaborative learning platforms can be a tremendous force for favourable, improving accessibility and allowing the exchange of ideas, however, for this chance to be fully discovered we must foster constructive instruction in educators, students, and the individuals who design, purchase, and supervise our interactive educational settings. Online formats enable institutions to provide supplemental programs or curriculum parts to their learners, improving learner access to necessary courses. To sustain or boost enrolments, colleges have to remain sensitive to their learners' wants and necessities, and they must feel that learners require the mobility of learning online. Considering the importance of the advantages, courses offered online are expected to develop into a more essential component of higher and graduate study. As a result, institutions that provide universal access to educational opportunities must make efforts to make sure learners do equally well in courses taken online as they did in traditional classroom instruction.

5. Conceptual Model

On the basis of the various aspects studied in this paper, A conceptual model has been developed which specifically deepens the knowledge on the three paradigms that this study has focussed on. The technology paradigm has been seen more inclined to the support expected and the infrastructure required for both technologically sound and imperial for the existence. The studies on the human paradigm supported the aspects of attitude and perception of teachers and students, as well as the key role of an instructor when it comes to the need of the hour – of online learning. There were research articles which focussed on the course design and evaluation sphere of online courses, which stated how student engagement and pedagogy, is related to the instructional designs and the dimension of assessment and feedback, which shows the way learners look at the content that they learn specially when it comes to learning online. From the articles studied in this paper, we could analyse the key important factors under each paradigm that wholly impact the online learning environment. Further, the paradigms that affect the learning process can lead to the knowledge of how the learners perceive the concept of learning online and define if the perceived satisfaction is the same as experienced one. Learning outcome is another important dimension which can help us understand the effectiveness of online learning process. Alternatively, the courses offered online can be effective affected by various drivers and it is important to understand the role each one plays, so that the overall impact and perception about online learning process can be enhanced.
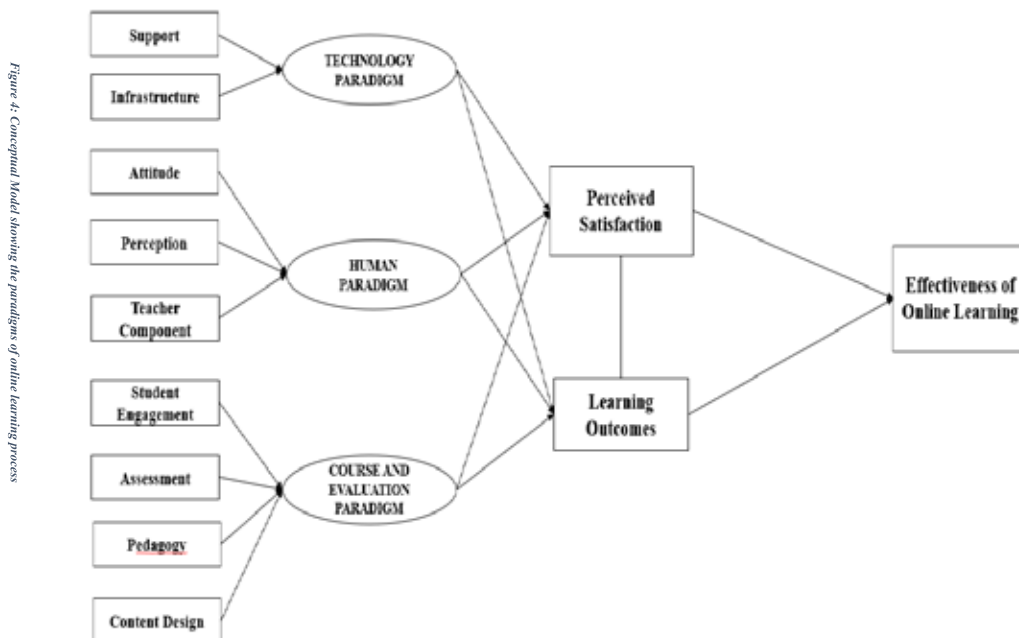
Figure 4: Conceptual Model showing the paradigms of online learning process

6.   Conclusion

Efficiently designed and effectively taught online classes have a chance to cross class boundaries and connect formal types of learning to a broader aspect of learning online. Efficient Online educational environments can also encourage learners to improve their analytical, imaginative, critical synthesis, and creative expression of concepts learned in an online environment. Instructors must continue to focus on strengthening the link connecting online technologies and learning, while learners must be kept conscious that using online content is permissible even in the most professional instructional environments. The necessity for academic institutes to mitigate tensions among educators and learners by implementing assistance and instruction programs, enhancing facilities, and enabling access to materials.

7.   Future Directions:

It was observed that the studies can be taken forward in many aspects, such as relevant pedagogic methods for online instruction, that must take into account enhancing the educational and instructional setting by embracing emerging technology, by both learners and instructors. Many studies have indicated understanding more about the student performance and assessment impacted by the online environment at various levels (UG, PG, etc.). Moreover, future studies can also fill up the void of understanding about the various pedagogical strategies used in an online learning environment and their impact on academic performances among different grades of students.

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