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### **Identifying Elements Contributing to Effective Online Learning Delivery in Higher Education Institutions – A Systematic Literature Review**

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#### **Abstract**

##### **Purpose**

The shift from in-person to online education was among the disruptive changes catalysed by the pandemic. Although today online learning modes outpace traditional ones, there is limited information on effective online learning design and delivery approaches to allow educators to effectively combine pedagogy and andragogy with technology in pursuit of Education 4.0.

##### **Methodology**

The authors performed a Systematic Literature Review, looking at relevant academic peer-reviewed journal articles, published within the last 5 years. A thorough filtering process narrowed the sample of articles down to 44, which were then taken further for a Thematic Analysis. A set of aspects contributing for effective online learning delivery were identified as emerging themes among the final sample of papers, classified under the 4 core modes of learner interactions.

##### **Findings**

Communication between lecturers and students remains a fundamental factor for academic success. The student awareness of “self” is an essential in an online learning delivery mode, due to the process enforcing self-regulation. There is discrepancy between educators and students’ perspectives in various instances, with a debate over the effectiveness of both pedagogies and andragogies for adult learning. The spotlight is on student-centric design, immersive learning experiences, simulations and interactive multimedia, non-traditional subject-authentic assessments, and content access and accessibility. Popular methods for learning enhancement such as the “flipped classroom” approach do not perform as effectively in online settings, while scheduling lengthier amounts of time for self-directed learning are recommended.

##### **Research limitations/implications**

There is clear necessity for the establishment of frameworks to guide the education process, whether that is for fully online or blended learning approaches. The dynamic growth of online learning naturally leads to the question regarding the overall educational effectiveness of online delivery and making steps in the direction of establishing such framework has implications for both academic and support staff at higher education institutions. Having formulated a conceptual framework based on the emerging themes in the final samples of studies, the authors recommend primary research to be undertaken with both students and educators.

## **Originality/Value**

A central force in speeding the UK's recovery from the pandemic in times of Education 4.0, it is essential that universities establish a robust framework for assessment of the quality of online learning delivery. The study encourages university authorities to consider the features of effective online learning while calibrating and responding to individual student needs in the interest of continuous improvement of the quality of student experience.

**Keywords:** Online Learning, Pedagogy, Andragogy, Higher Education

**Paper type:** Review Paper

## **1. Introduction**

### **1.1 Online Learning in Higher Education**

Higher Education (HE) is among the sectors that have benefited the most from the dynamic progress of technology. The speed of ICT utilisation has accelerated massively by the changes caused by the Covid-19 pandemic (Ng et al., 2023; Laksana, 2020). The effect of the rapid evolution of technology over the education sector has been analysed frequently in the recent years, with the term Education 4.0 assigned a high relevance and described as the emergence of information and communication technology combined with the innovative pedagogical procedures and best practices (Chugbu et al., 2023; Miranda et al., 2021). Online learning has already demonstrated significant positive impact by providing higher education students flexibility in terms of time and space, enabling them to balance between personal, academic and professional responsibilities (Taylor et al., 2018; Lakhali and Khechine, 2017). Students are provided with low-cost, high quality options for education in populations where young people would not normally pursue higher education due to the costs (Goodman, et al., 2019), while for institutions, the online mode of delivery represents a strategic lucrative solution, providing a steady source of revenue (Calhoun et al., 2017; Prior et al., 2016). There is no difference in the learning outcomes in traditionally delivered modules and modules delivered online (Kumar, et al., 2019), however the online learning environment opposes its challenges when it comes to effective learning experience (Arbaugh, 2016), such as student isolation (Kranzow, 2013), lack of effective instructor support and reduced peer-to-peer interaction (Heilporn and Lakhali, 2020; Bolliger and Martindale, 2004). It is debatable whether the traditional classroom setting promotes higher engagement within HE students as opposed to the online environment. Young and Seibenhener (2017) believe that within a traditional setting, students are too busy taking notes, therefore not paying focused attention. Moreover, traditional education has been seen by authors as ineffective in meeting individual student needs (McAllister, 2010; DeCelle and Sherrod, 2011). Student engagement is a complex, yet not at all a novel concept. Astin (1984) defines it as a multi-faceted concept concerning the amount of physical and psychological energy that the learners devote to the learning experience. Authors add onto the original studies of engagement by adding in the emotional element of the student experience, that involves their levels of attention and emotional investment put into their academic journey (Marks, 2000; Halverson and Graham, 2019). The transition to online learning assumes a shared responsibility between the learner and the instructor (Zepke et al., 2014), and acts as partners in research and governance of the learning environment (Zepke, 2017), as opposed to the traditional instructor-led approach.

## **1.2 Teaching Methods and Approaches**

Numerous academic studies concerned with adult learning refer to the term “Pedagogy” (Wang et al., 2023; Miranda et al., 2021; Martin et al., 2019; Moduli and Quazi, 2018). Pedagogy, as a method of preparation, presentation, association, generalisation, and application, was first introduced by the German philosopher Johann Friedrich Herbart, who established Pedagogy as an academic discipline (Abduljabbar, 2023). Pedagogy is associated with the teaching of children or vulnerable people, and for the most part is a teacher-led approach (Herbart, 1891). The notion of Andragogy was later established by German grammar school teacher Alexander Kapp to describe the educational theory of ancient Greek philosopher Plato (Loeng, 2017). Andragogy describes methods used with independent learners, and unlike Pedagogy is a student-centred approach (Draper, 1998). Freire (2005) puts the basis of exploration of adult education and the importance of the educator understanding their role in facilitating action and reflection, through which adults can become active participants in society. Knowles et al. (2005) present the core principles of adult learning to be the “adults’ need to know”, “adults as self-directed and responsible learners”, their “rich life experiences”, “adults’ readiness to learn”, “life-centred orientation to learning” and their “motivation”. The core pillars of the adult learning process have been criticised for being too focused on the individual, without considering collectivism and collective approach to social change and societal impact (Cocquyt et al., 2019).

## **1.3 Research Aim**

Although online learning modes outpace traditional ones (Kumar et al., 2019), little attention has been paid to supportive ways of enhancing the transition of traditional to online and blended learning environments (Cocquyt, et al., 2019). When it comes to online education, there is a lack of information on design methodologies and evaluation mechanisms to allow educators to effectively use technology and pedagogies within the Education 4.0 context (Holland, 2018). There is a clear necessity for the establishment of frameworks to guide the education process, whether that is for fully online or blended learning approaches (Miranda, et al., 2021). The dynamic growth of online learning naturally leads to the important question regarding the overall educational effectiveness of such delivery (Money and Dean, 2019).

The aim of this research is to review the most recent academic works in relation to online learning delivery in Higher Education and establish the elements contributing to effective online learning within the university context. As online learning continues to mature and evolve, both academic and supportive staff need guidance on how to best design and deliver learning effectively for their students (Martin et al., 2019).

## **1.4 Conceptual Framework**

A Conceptual Framework (Fig. 1) was developed to provide structure to the study, embodying a combination of well-established concepts, originating from learning support methods used in a traditional classroom environment. Interaction has been considered an essential to learning regardless of discipline for a long period of time (Vygotsky, 1979), therefore seen as crucial in the transition from traditional to online and blended learning experiences (Anderson, 2008). The framework comprises the 3 main types of interaction established by Moore in 1989 - (1) Learner - Content; (2) Learner - Instructor and (3) Learner - Learners. The level of required interaction and its significance to effective learning has been debated over the years. Bernard et al. (2009) study has showed learner-instructor interaction is less important than the learner-learner and learner-content interaction in relation to student achievement, and the learner-learner interaction most important with regard to social outcomes, while other authors believe

the interaction learner-instructor to be the predominant force paving the way to meaningful interaction and engagement of learners with the content and other learners (Laurillard, 2012; Mebane et al., 2008). The conceptual framework was employed to classify the most frequently discussed themes by academics within the final 44 studies of the Systematic Literature Review. Influenced by studies focused on Andragogy, presenting the university adult learner as a self-aware, self-led, disciplined, reflective, experienced and motivated individual (Knowles et al., 2005), the SLR informed an additional significant pillar of interaction in addition to the 3 proposed by Moore - The Learner as an Individual. Authors put emphasis on learner's maturity as well as their interest in acquiring new knowledge and degree to which they accept their own responsibility to learn as moderating factors when it comes to effective learning (Smith and Delahaye, 1987, Stuart and Holmes, 1982; Nadkarni, 2003). While motivation has been often seen as an individualistic character trait, it is shown throughout the years that situation characteristics can also influence the extent to which a student is motivated to acquire knowledge (Colquitt et al., 2000). Studies put emphasis on Informal Learning as a contributing factor when it comes to the learner as an individual - the unstructured learning that happens in daily life (Holland, 2018, Meriam et al., 2007), as well the support of friends, family and community of peers as a contributor to the individual academic success (Cocquuit, 2019). The responsibility of enabling the main three types of interaction seems to fall on the shoulders of educators and the institutions, with strong emphasis on the availability of both synchronous and asynchronous tools for peer engagement, as well as utilisation of social media platforms (Perrotta, 2020).

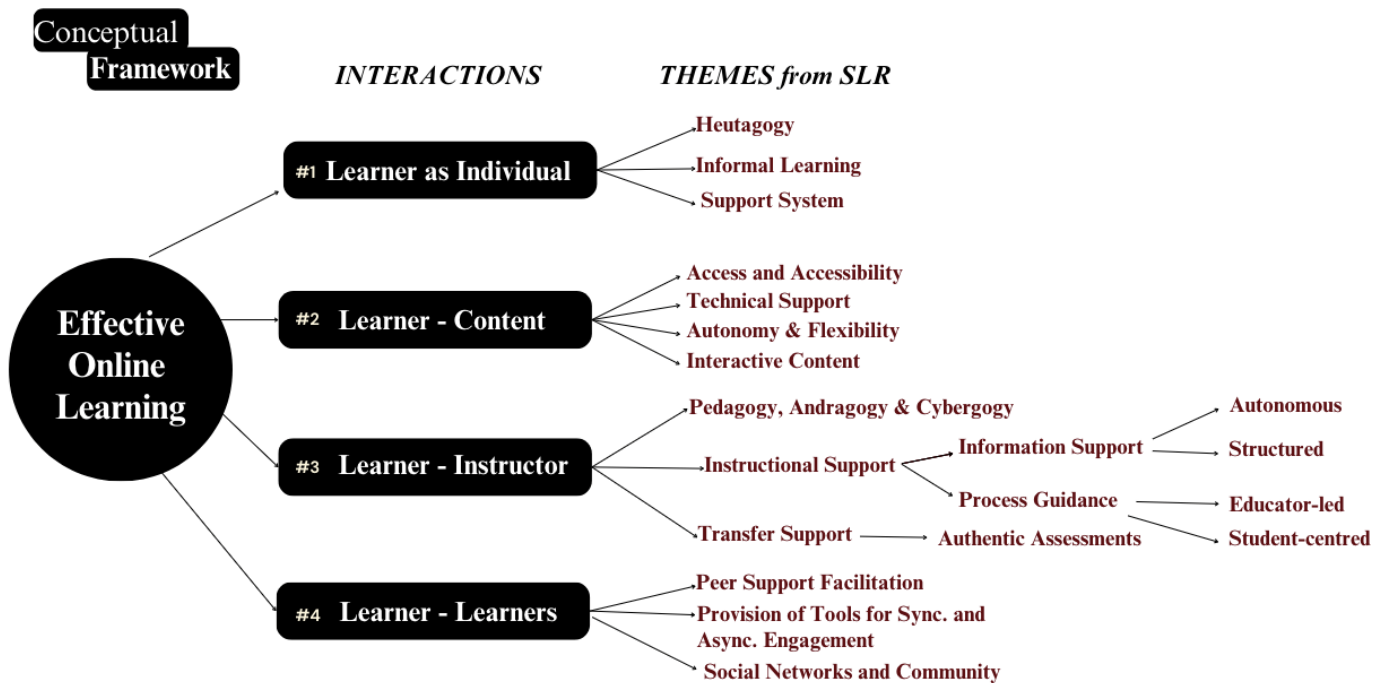


Figure 1: Conceptual Framework

### 1.5 Structure of Paper

This research paper is structured in the following way:

Chapter 1 provides a brief overview of the background to this study, defines key terms and outlines the research problem as well as presents the proposed Conceptual Framework. Chapter 2 describes the methodology followed by the authors to produce the secondary research findings. Chapter 3 presents the secondary data findings, including a list of filtered studies,

their authors, year of publication, research strategy used in their methodology, as well as number of citations, journal, and the journal’s impact factor. Chapter 4 comprises a descriptive and thematic analysis of the findings presented in Chapter 3. Chapter 5 draws conclusions from the analysis, provides practical recommendations and suggestions for future research, as well as outlines the limitations of this study.

## 2. Methodology

### 2.1 The Systematic Literature Review Process

This study took an Interpretivist philosophical standpoint (Chaudhury, 2014) and employed an Inductive approach (Thomas, 2003). To systematically examine the contributing practices to effective online learning in Higher Education the authors adopted the 8-Step Systematic Literature Review Process by Xiao and Watson (2019) and carried out a systematic appraisal of the literature by formulating the research problem, developing a review protocol, searching the literature, screening for inclusion, assessing quality, extracting the relevant data, analysing, and synthesising it and recording the findings.

### 2.2 Data Sources and Search Key Terms

After initial search in multiple databases, Science Direct was selected as deemed to have relatively broader coverage in comparison with other databases as well as more relevant article titles in relation to the context of this research. The selected database was searched using the following search terms:

“e-learning” OR “online learning” AND “effectiveness” AND “pedagogy” OR “andragogy” AND “higher education”

### 2.3 Inclusion / Exclusion Criteria

The studies were filtered using the criteria outlined in Table 1.

| Criteria                 | Inclusion                         | Exclusion                                                                 | Rationale                                                                   |
|--------------------------|-----------------------------------|---------------------------------------------------------------------------|-----------------------------------------------------------------------------|
| <b>Quality</b>           | Peer-reviewed Journal Articles    | Conference Papers, Non-peer Reviewed Articles, Websites, News, Magazines  | Good quality and reliability of data                                        |
| <b>Language</b>          | English                           | Any other language                                                        | Universal language                                                          |
| <b>Length</b>            | Fully Accessible Articles         | Previews and Abstracts                                                    | The chapters required for the SLR will not be available in preview versions |
| <b>Publication Date</b>  | 2018-2023                         | Publications before 2018                                                  | Timeliness of findings                                                      |
| <b>Publication Scope</b> | Online Higher Education Worldwide | Any other industry or other forms of education (schools, colleges, MOOCs) | Relevance of findings                                                       |

Table 1: Inclusion / Exclusion Criteria for SLR

### 2.4 Filtering Process

The initial search after key word refinement displayed 611 publications. Using the automated functions of the database to narrow to specific fields of studies and journals filtered the articles

further to 536. 458 records were excluded based on Title, Key Words and Abstracts. 14 Conference papers were removed as per the Exclusion Criteria. 78 final publications were assessed for relevance to the research context as per the Inclusion Criteria, providing a final sample of 44 studies as outlined in Figure 2.

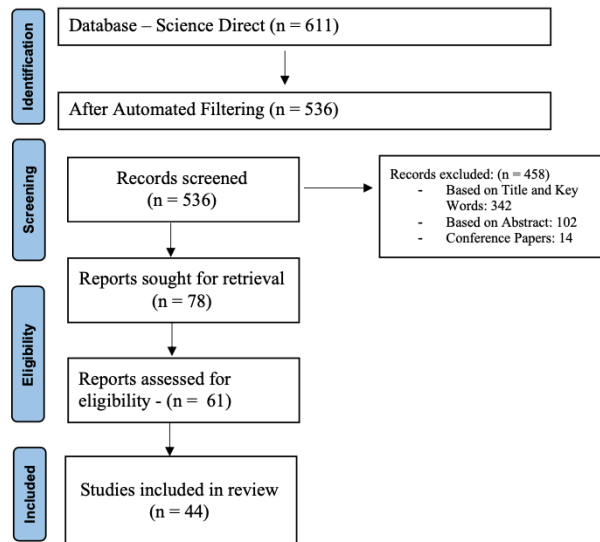


Figure 2: PRISMA Flow Diagram

## 2.5 Thematic Analysis

The authors adopted Clarke and Braun's 6-Step Thematic Analysis Model including beginning with familiarising with the data, generating initial codes, searching for themes, reviewing themes, defining and naming themes and producing the final report (Clarke and Brown, 2006).

## 3. Findings

Aiming at exploring the aspects contributing to the quality of online instructional design and delivery within the higher education setting, the authors narrowed the existing literature from 5 years back down to the most relevant 44 journal articles. The final sample of studies was taken for further analysis (Table 2).

## 4. Analysis and Discussion

### 4.1 Descriptive Analysis

#### 4.1.1 Distribution of Final Sample of Studies by Year of Publication

The majority of studies included in the SLR were published in 2021 (12), followed by 2019 (10), and fairly evenly distributed among the remaining years - 2023 (7), 2018 (6), 2022 (5), with the least (4) published in 2020 (Fig. 3).

#### 4.1.2 Geographical Distribution of Final Sample of Studies

Large part of the studies has been conducted in China (9) and the USA (7). Overall, the sample has a good geographical distribution, covering studies from Canada (1), Mexico (1), The Netherlands (1), India (2), Japan (1), Germany (1), Pakistan (1), Slovenia (1), Macao (1), UK (1), Taiwan (2), Korea (1), Malaysia (2), Australia (1) and Spain (1).

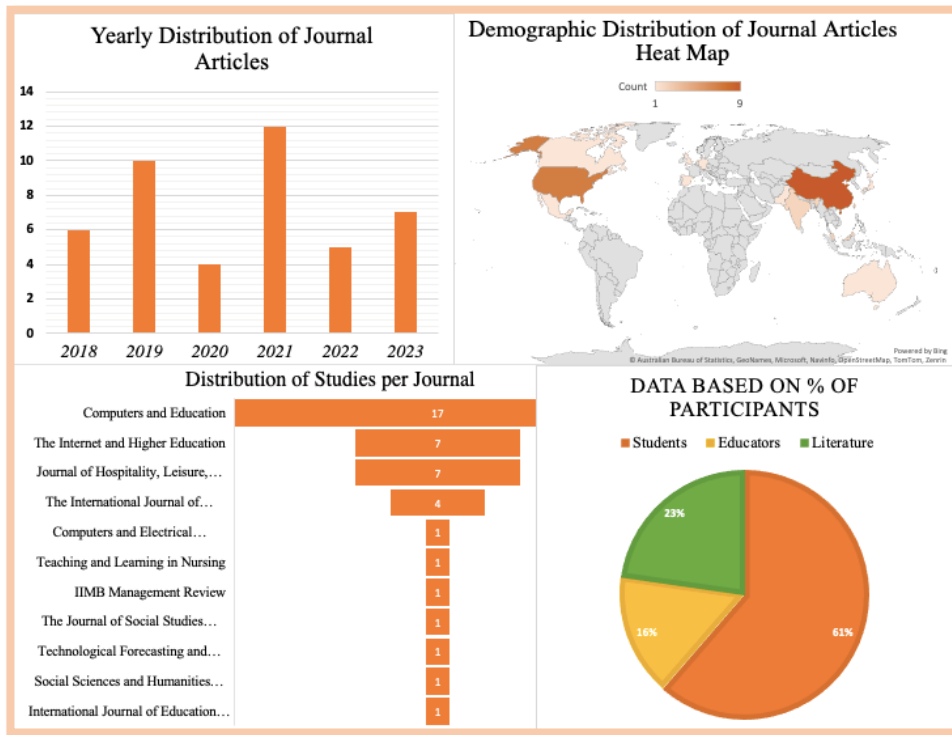


Figure 3: Descriptive Analysis of Sample of Studies

#### 4.1.3 Distribution of Final Sample of Studies per Journal

Most of the studies came from 4 of the top journals covering online education – Computers & Education (17 studies), The Internet and Higher Education (7), Journal of Hospitality, Leisure, Sport and Tourism Education (7) and The International Journal of Management Education (4).

#### 4.1.4 Distribution of Final Sample of Studies Based on Research Strategy

The research strategies used in the studies within the final sample included predominantly Questionnaires (17), followed by Literature Reviews (10), and Action Research (8). Fewer studies incorporated Interviews (4), Case Studies (3) and Focus Groups (2). 23% of the whole data in the studies was secondary and 76% on primary data, 61% of which collected from students and 16% from educators (Fig. 3).

## 4.2 Thematic Analysis

### 4.2.1 Learner as Individual

The evolution of technology and tools facilitating learning calls for evolution in pedagogical procedures too. Light is shed on a new approach to education that goes beyond the traditional pedagogical and andragogical approaches, including heutagogy, peeragogy and cybergogy (3). Heutagogy is an occurring theme when it comes to the Learner as an Individual, concerning self-learning based on humanistic and constructivist principles (Nikolovska et al., 2019), where understanding of the learner of oneself is in focus. Authors tend to agree that online learning's most prominent feature is the opportunity to provide an individualised path of learning for students with varying needs (1, 5, 6, 7, 27). This is especially relevant in relation to the andragogical principles that adults are self-directed and with a life centred orientation (1). Authors suggest knowledge has to be personalised to be transformative, and in order to be so, interactive technology can be used wisely in order to provide enough time for the learners to

| No. | YEAR | COUNTRY         | AUTHOR                                                                                                                                                                                                                     | TITLE                                                                                                                                                 | METHOD                                 | JOURNAL                                           | No. CITATIONS | IMPACT FACTOR |
|-----|------|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|---------------------------------------------------|---------------|---------------|
| 1   | 2019 | The Netherlands | Celine Cocquyt, Chang Zhu, Ang Nguyet Diep, Maurice De Greef, Tom Vanwing                                                                                                                                                  | Examining the Role of Learning Support in Blended Learning for Adults' Social Inclusion and Social Capital                                            | Questionnaire<br>139 Students          | Computers and Education                           | 29            | 11.182        |
| 2   | 2021 | Canada          | Geraldine Heilporn, Sawsen Lakhali                                                                                                                                                                                         | Converting a Graduate-Level Course into a HyFlex Modality: What are Effective Engagement Strategies?                                                  | Questionnaire<br>168 Students          | The International Journal of Management Education | 12            | 4.564         |
| 3   | 2021 | Mexico          | Jhonattan Miranda, Christelle Navarrete, Julieta Noguez, José-Martin Molina-Espinosa, María-Soledad Ramírez-Montoya, Sergio A. Navarro-Tuch, Martín-Rogelio Bustamante-Bello, José-Bernardo Rosas-Fernández, Arturo Molina | The Core Components of Education 4.0 in Higher Education: Three Case Studies in Engineering Education                                                 | 3 Case Studies                         | Computers and Electrical Engineering              | 98            | 4.152         |
| 4   | 2018 | USA             | Diane Young, Sherry Seibenhener                                                                                                                                                                                            | Preferred Teaching Strategies for Students in an Associate of Science Nursing Program                                                                 | Multiple Questionnaires<br>49 students | Teaching and Learning in Nursing                  | 4             | 2.5           |
| 5   | 2018 | India           | Ashutosh Muduli, Vinita Kaura, Ali Quazi                                                                                                                                                                                   | Pedagogy or andragogy? Views of Indian postgraduate business students                                                                                 | Questionnaire<br>313 Students          | IIMB Management Review                            | 17            | 0.554         |
| 6   | 2019 | -               | Alison Anderson Holland                                                                                                                                                                                                    | Effective Principles of Informal Online Learning Design: A Theory-Building Methasynthesis of Qualitative Research                                     | Literature Review                      | Computers & Education                             | 49            | 12            |
| 7   | 2019 | USA             | William Money and Benjamin Dean                                                                                                                                                                                            | Incorporating Student Population Differences for Effective Online Education: A Content-Based Review and Integrative Model                             | Literature Review                      | Computers and Education                           | 23            | 12            |
| 8   | 2019 | USA             | Katherine Perrotta                                                                                                                                                                                                         | Getting HIP: A Study on the Implementation of Asynchronous Discussion Boards as a High-Impact Practice in Online Undergraduate Survey History Courses | Action Research                        | The Journal of Social Studies Research            | 3             | 1.7           |
| 9   | 2021 | China           | Sarah Safdar, Minglun Ren, Muhammad Chudhery, Jiazhen Huo, Hakeem-Ur Rehman, Raza Rafique                                                                                                                                  | Using Cloud-Based Virtual Learning Environments to Mitigate Increasing Disparity in Urban-Rural Academic Competence                                   | 31 Interviews                          | Technological Forecasting and Social Change       | 3             | 12            |
| 10  | 2019 | USA             | Florence Martin, Albert Ritzhaupt, Swapna Kumar, Kiran Budhrani                                                                                                                                                            | Award-winning Faculty Online Teaching Practices: Course Design, Assessment and Evaluation, and Facilitation                                           | 8 Interviews<br>Educators              | The Internet and Higher Education                 | 147           | 8.6           |
| 11  | 2023 | -               | Bianca Chigbu, Viwe Ngwevu, Avela Jojo                                                                                                                                                                                     | The Effectiveness of Innovative Pedagogy in the Industry 4.0: Educational and Ecosystem Perspective                                                   | SLR                                    | Social Sciences and Humanities Open               | -             | 1.9           |

Table 2: SLR Sample of Studies



| No. | YEAR | COUNTRY           | AUTHOR                                                                                            | TITLE                                                                                                                                                       | METHOD                                  | JOURNAL                                                      | No. CITATIONS | IMPACT FACTOR |
|-----|------|-------------------|---------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|--------------------------------------------------------------|---------------|---------------|
| 12  | 2023 | -                 | Davy Tsz Kit Ng, Anthony Chun Hun Chung, Sau Wai Law                                              | Online Learning in Management Education Amid the Pandemic: A Bibliometric and Content Analysis                                                              | SLR                                     | The International Journal of Management Education            | -             | 5.2           |
| 13  | 2023 | China             | Yanqing Wang, Shaoying Gong, Yang Cao, Weiwei Fan                                                 | The Power of Affective Pedagogical Agentand Self-Explanation in Computer-Based Learning                                                                     | Action Research                         | Computers & Education                                        | 26            | 12            |
| 14  | 2022 | Japan and Germany | Sadaf Taimur, Motoharu Onuki                                                                      | Design Thinking as Digital Transformative Pedagogy in Higher Sustainability Education: Cases from Japan and Germany                                         | Case Study                              | The International Journal of Education Research              | 5             | 3.2           |
| 15  | 2023 | Pakistan          | Shahuda Mariam, Kausar Khawaja, Muhammad Qaisar Farooq Ahmad                                      | Blended Learning Sustainability in Business Schools: Role of Quality of Online Teaching and Immersive Learning Experience                                   | Questionnaire<br>589 Students           | The International Journal of Management Education            | 2             | 5.2           |
| 16  | 2023 | -                 | Rabia Imran, Afsheen Fatima, Islam Salem, Kamaal Allil                                            | Teaching and Learning Delivery Modes in Higher Education: Looking Back to Move Forward Post-Covid Era                                                       | SLR                                     | The International Journal of Management Education            |               | 5.2           |
| 17  | 2021 | India             | Insha Amin, Anish Yousaf, Sandeep Walia, Makhmoor Bashir                                          | What Shapes E-Learning Effectiveness Among Tourism Education Students? An Empirical Assessment During Covid-19.                                             | Questionnaire<br>447 Students           | Journal of Hospitality, Leisure, Sport and Tourism Education | 16            | 3.7           |
| 18  | 2021 | China             | Alice Hoi Ying Yau, M.W.L Yeung, C.Y.P. Lee                                                       | A Co-Orientation Analysis of Teachers' and Students' Perceptions of Online Teaching and Learning in Hong King Higher Education During the Covid-19 Pandemic | Questionnaire<br>176 Students           | Studies in Educational Evaluation                            | 14            | 3.1           |
| 19  | 2021 | China             | Yuk Ming Tang, Pen Chung Chen, Kris M.Y. Law, C.H. Wu, Yui-yip Lau, Jieqi Guan, Dan He, G.T.S. Ho | Comparative Analysis of Student's Live Online Learning Readiness During the Coronavirus (Covid-19) Pandemic in the Higher Education Sector                  | Questionnaire<br>Students               | Computers and Education                                      | 169           | 12            |
| 20  | 2021 | Slovenia          | Damjan Fujs, Simon Vrhovec, Bostjan Zvanut, Damjan Vavpotic                                       | Improving the Efficiency of Remote Conference Tool Use for Distance Learning in Higher Education: A Kano Based Approach                                     | Questionnaire<br>Educators and Students | Computers and Education                                      | 6             | 12            |
| 21  | 2021 | Macao             | Elizabeth Agyeiwaah, Frank Baiden, Emmanuel Gamor, Fu-Chieh Hsu                                   | Determining the Attributes that Influence Students' Online Learning Satisfaction During Covid-19 Pandemic                                                   | Questionnaire<br>216 Students           | Journal of Hospitality, Leisure, Sport and Tourism Education | 22            | 3.7           |
| 22  | 2023 | United Kingdom    | Marc Briggs, Claire Thornton, Victoria McIver, Penny Rubold, Daniel Peart                         | Investigation into the Transition to Online Learning Due to the Covid-19 Pandemic, Between New and Continuing Undergraduate Students                        | Questionnaire<br>182 Students           | Journal of Hospitality, Leisure, Sport and Tourism Education | -             | 3.7           |

Table 2: SLR Sample of Studies

| No. | YEAR | COUNTRY            | AUTHOR                                                              | TITLE                                                                                                                                                                                                   | METHOD                                                                     | JOURNAL                                                      | No. CITATIONS | IMPACT FACTOR |
|-----|------|--------------------|---------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------|--------------------------------------------------------------|---------------|---------------|
| 23  | 2023 | China              | Chiao Huang, Chuxiang Wu, Shu Yang                                  | How Students View Online Knowledge: Epistemic Beliefs, Self-Regulated Learning and Academic Misconduct                                                                                                  | Questionnaire<br>538 Students                                              | Computers and Education                                      | -             | 12            |
| 24  | 2020 | China              | Chan Chung-Shing, Chan Yat-Hang, Fong Tsz Heung Agnes               | The Effectiveness of Online Scenario Game for Ecotourism Education from Knowledge-Attitude-Usability Dimensions                                                                                         | Action Research - Game Session 35 Students, Discussion Session 31 Students | Journal of Hospitality, Leisure, Sport and Tourism Education | 5             | 3.7           |
| 25  | 2021 | Taiwan             | Hui-Lien Chou, Chien Chou                                           | A Multigroup Analysis of Factors Underlying Teachers' Technistress and Their Continuance Intention Toward Online Teaching                                                                               | Questionnaire<br>Educators and Students                                    | Computers and Education                                      | 34            | 12            |
| 26  | 2020 | Taiwan             | Juin-Yu Wu, Mei-Wen Nian                                            | The Dynamics of an Online Learning Community in a Hybrid Statistics Classroom Over Time: Implications for the Question-Oriented Problem-Solving Course Design with the Social Network Analysis Approach | Social Network Analysis<br>23 Students                                     | Computers and Education                                      | 33            | 12            |
| 27  | 2021 | International      | Leonidas Efthymiou, Alex Zarifis                                    | Modelling Students' Voice for Enhanced Quality in Online Management Education                                                                                                                           | Questionnaire<br>Students from 170 Nationalities                           | Journal of Hospitality, Leisure, Sport and Tourism Education | 23            | 3.7           |
| 28  | 2020 | -                  | Florence Martin, Ting Sun, Carl Westine                             | A Systematic Review of Research on Online Teaching and Learning from 2009 to 2018                                                                                                                       | SLR                                                                        | Computers and Education                                      | 175           | 12            |
| 29  | 2022 | China              | Chengyuan Jia, Khe Foon Hew, Du Jiahui, Li Liuyufeng                | Towards a Fully Online Flipped Classroom Model to Support Student Learning Outcomes and Engagement: A 2-year Design-Based Study                                                                         | Design Based Study                                                         | The Internet and Higher Education                            | 5             | 8.6           |
| 30  | 2021 | Korea and Malaysia | Jeong-Ja Choi, Charles Arthur Robb, Mazalan Mifli, Zaliha Zainuddin | University Students' Perceptions to Online Class Delivery Methods During Covid-19 Pandemic: A Focus on Hospitality Education in Korea and Malaysia                                                      | Focus Groups                                                               | Journal of Hospitality, Leisure, Sport and Tourism Education | 25            | 3.7           |
| 31  | 2019 | -                  | Rasheed Abubakar Rasheed, Amirrudin Kamsin, Nor Aniza Abdullah      | Challenges in the Online Component of Blended Learning: A Systematic Review                                                                                                                             | SLR                                                                        | Computers and Education                                      | 395           | 12            |
| 32  | 2022 | Malaysia           | Muhammad Kamarul Kabilan                                            | Online Teaching During COVID-19 Pandemic: A Phenomenological Study of University Educators' Experiences and Challenges                                                                                  | Interviews<br>15 Educators                                                 | Studies in Educational Evaluation                            | 3             | 2.704         |
| 33  | 2019 | USA                | Crystal E. Garcia                                                   | The Role of an Online First-Year Seminar in Higher Education Doctoral Students Scholarly Development                                                                                                    | Case Study                                                                 | The Internet and Higher Education                            | 14            | 8.591         |

Table 2: SLR Sample of Studies

| No. | YEAR | COUNTRY   | AUTHOR                                                                                        | TITLE                                                                                                                                   | METHOD                          | JOURNAL                                                      | No. CITATIONS | IMPACT FACTOR |
|-----|------|-----------|-----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|--------------------------------------------------------------|---------------|---------------|
| 34  | 2020 | Australia | Md Abdullah AI Mamun                                                                          | Instructional Design of Scaffolded Online Learning Modules for Self-Directed and Inquiry Based Learning Environments                    | Action Research                 | Computers and Education                                      | 82            | 13.71         |
| 35  | 2018 | USA       | Helen Crompton, Diane Burke                                                                   | The Use of Mobile Learning in Higher Education: A Systematic Review                                                                     | SLR                             | Computers and Education                                      | 305           | 13.71         |
| 36  | 2018 | Spain     | Ana-Elena Guerrero-Roldan, Ingrid Noguera                                                     | A Model for Aligning Assessment with Competencies and Learning Activities in Online Courses                                             | Action Research                 | The Internet and Higher Education                            | 51            | 8.591         |
| 37  | 2022 | USA       | Abraham E.Flanigan, Mete Akcaoglu, Emily Ray                                                  | Initiating and Maintaining Student-Instructor Rapport in Online Classes                                                                 | Interviews Educators            | The Internet and Higher Education                            | 6             | 8.591         |
| 38  | 2019 | -         | Alison Anderson Holland                                                                       | Effective Principles of Informal Online Learning Design: A Theory-Building Metasynthesis of Qualitative Research                        | Literature Review Metasynthesis | Computers and Education                                      | 51            | 13.71         |
| 39  | 2019 | -         | Jennifer W.M.Lai, Matt Bower                                                                  | How is the Use of Technology in Education Evaluated? A Systematic Review                                                                | SLR                             | Computers and Education                                      | 90            | 13.71         |
| 40  | 2019 | China     | Xibin Han, Yuping Wang, Lian Jian                                                             | Towards a Framework for an Institution-Wide Quantitative Assessment of Teachers Online Participation in Blended Learning Implementation | Questionnaire 7272 Educators    | The Internet and Higher Education                            | 18            | 8.591         |
| 41  | 2021 | -         | Jennifer Fromm, Jaziar Radianti, Charlotte Wehking, Stefan Steiglitz, Tim A Majchrzak         | More Than Experience? On the Unique Opportunities of Virtual Reality to Afford a Holistic Experiential Learning Cycle                   | Focus Groups                    | The Internet and Higher Education                            | 41            | 8.591         |
| 42  | 2022 | Taiwan    | Jeou-Shyan Horng, Chih Hsing Liu, Sheng Fang Chau, Tai- Yi Yu, Yen Po Fang, Yung- Chuan Huang | Students Perceptions of Sharing Platforms and Digital Learning for Sustainable Behaviour and Value Changes                              | Questionnaire 567 Students      | Journal of Hospitality, Leisure, Sport and Tourism Education | 3             | 2.628         |
| 43  | 2018 | China     | Jason MacLeod, Harrison Hao Yang, Shah Zhu, Yanhong Li                                        | Understanding Students Preferences Toward the Smart Classroom Learning Environment, Development and Validation of an Instrument         | Questionnaire 462 Students      | Computers and Education                                      | 79            | 13.71         |
| 44  | 2018 | China     | I-Chun Hung, Kinshuk, Nian- Shing, Chen                                                       | Embodied Interactive Video Lectures for Improving Learning Comprehension and Retention                                                  | Action Research 90 Students     | Computers and Education                                      | 67            | 13.71         |

Table 2: SLR Sample of Studies

learn, connect the knowledge with their existing experience and have enough time to reflect on it before moving onto new learning content (3, 5, 7). Self-regulation is the key to effective online learning and authors have debated whether adults in general are self-regulated learners as opposed to children (1, 7, 31). Unstructured informal learning embedded in the daily activities of the adult learner as an individual plays a crucial role in their motivation to acquire knowledge and direct their own learning as well as contributes for a more transformative experience (6, 38). Emotional support from the family and friends of the learners correlates positively with their academic success (1, 6). Studies suggest that family members as well as job supervisors have to be more involved in the learning process of the student to reduce drop-out rates (1). The use of social media platforms in the academic setting is reviewed by several studies (1), with authors in full support of utilising the social media networks to enhance the learning experience (6, 12, 26, 27).

#### *4.2.2 Learner – Content*

Cybergogy combines both the Pedagogical and Andragogical approaches and utilises technology to enable and facilitate student-led autonomous learning as well as collaborative experiences in a virtual environment (Sumarsono, 2019). Cybergogy is said to provide learning experiences beyond the limits of time and space (3), tackling unequal distribution of educational opportunities in rural areas (9). Both access (34) and accessibility of content as well as visual attractiveness were deemed crucial by authors not only in terms of geographical access, but also devices on which the content runs (9, 21, 27). The largest demographic of mobile users is 18-29, which is also the age of the majority of university students (35) and that calls for rethought and restructuring of content to be made accessible on phones as well as other devices to allow the students the convenience and flexibility necessary for effective learning. Access of materials plays a crucial role in achieving transformative learning (1,14,15). Authors note that access to archives from previous classes, access to current and past student forums enabling asynchronous interaction between learners is key in providing students sufficient time to effectively regulate their self-directed learning, reflect and respond to content in their own pace and receive feedback when required (8).

The learner-content communication is becoming a lot more interactive (4, 5, 7, 8, 16, 17, 28). The availability of synchronous tools for communication in all types of student interactions is noted to be just as important as the availability of asynchronous tools (1, 7, 8, 26). Interactive media, immersive content, and game-based environments score high when seeking to engage the learners effectively (7, 11, 13, 15, 24). Virtual Reality is proposed to suit all 4 types of learning needs (41). Differences in how students perceive online learning and the ease of use of online learning technologies directly impacts on their learning (7, 16, 17, 39, 42). Authors appreciate the individualistic needs of learners when it comes to technological skills and advice special attention is paid to technical support of learners to tackle both multi-generational and multidiscipline challenges (1, 3, 4, 6, 7, 17, 20, 34). Knowles' Principles of Adult Learning seem to be achieved more effectively when in a supported technological environment. The establishment of a strongly supported technological environment therefore is connected with the increased motivation of students as individuals to acquire knowledge (1,6,7, 10). On the contrary, educators are said to find the technical support of learning the most stressful component of the whole instructional process (4, 18, 25). Video-orientation of the modules and e-learning technologies is suggested as a solution (7, 44) and efforts towards a more motivating visual environment are highly appreciated among students (21).

The method of delivering information is heavily dependent on the context, and not all methods working effectively in a traditional environment (24) can be transferred to online learning, e.g., the flipped classroom approach (4, 11), working especially ineffectively in modules with no synchronous online sessions (29). With regards to access to content, providing recordings to

all sessions is deemed highly effective way of fostering the engagement of students and does not correlate with drop in attendance during live sessions as expected (2) and in addition positively affects exam marks (2).

In managing students' expectations, content must be systematic, with clearly set from the beginning objectives (10), evenly distributed workload (6), flow between tasks (15), and authentic to the course assessment (27).

#### *4.2.3 Learner – Instructor*

Communication between learners and instructors remains fundamental to the success of the students and meaningful long-term results (30, 32). The lack of instructional support in the online setting is a significant issue faced by the students (2, 7). The ability to run courses asynchronously has its negative impact, as students note the lack of opportunity for interaction with instructors and having to bear all the responsibility for their learning, suggesting regular weekly synchronous sessions with their instructor where possible (2, 7, 32). The effectiveness of the instructional support is crucial for learners cognitive and affective outcomes (1, 7). The traditional instructional support is viewed as split into two distinct factors – information support and process guidance (1). Some authors believe instruction-led sessions are more effective (10). While others believe online learning calls for shift from more instructivist and teacher-led approaches to constructivist, student-centred support (1, 5, 6). Adult learners experience higher satisfaction from more open, constructivist e-learning environments (1, 6, 7). There is a discrepancy between educators' views on students' readiness to learn (19) as students seem a lot more eager than they have been at the beginning of the pandemic (22), expressing positive appraisal of online learning attributes, but marginal satisfaction in delivery (21). Self-directed learning enables more authentic experience; therefore instructors are expected to also provide effective Transfer Support, enabling learners to connect how the presented academic information could relate to them in a real-life environment (1, 5, 6). Educators' perspective is that to build a rapport with students in online classes, they tend to lead the process more actively in the beginning of the course, followed by a slightly loser approach, allowing the students to curate the narrative based on their questions and interests (37, 40). Students relate effective transfer support to good social connectedness (1).

Many authors to date refer to pedagogies in describing adult teaching approaches (11, 12, 13, 14). Following andragogical principles, several authors support learners with greater autonomy and full ownership of their studies tend to perform better (1, 5, 6). A study by Moduli and Quazi shows students' clear preference for andragogical approaches as opposed to pedagogical (2018) and further put emphasis on student-centred approaches over conventional teacher-led methods (5).

Students are concerned with the structure of their assessments, expressing the need for more authentic assessments that are directly related to their disciplines (e.g. fieldwork and real-life assignments as opposed to essays) (1, 10, 36, 43), which again leads to bridging the gap between the class room and real-life situations and aligning learning activities with job market competencies, providing for a better transformative environment (1, 10). Collaborative assignments (2, 12), Design Thinking (14) and Project Based Learning and Assessments (11, 12) are said to be preferred by students in terms of connecting with their peers, however the use of those should not be overdone. Educators on the other hand are concerned with academic dishonesty and misconduct in online assessments (23). Feedback has been paid more attention by students in an online than in a traditional setting (18, 27).

Non-academic instructor support has a mention as expected by students (1, 6) and even in asynchronous courses students would like to feel the presence of both instructors and peers, via regular engagement, formative feedback, and drop-in sessions (8, 10, 27).

#### 4.2.4. Learner – Learner

Peeragogy takes Pedagogy, Andragogy and Heutagogy further by adding on collaborative learning (Samsudin et al., 2022). Facilitation of Peer Support has been reviewed by multiple authors (1, 6, 8, 10, 12, 26, 27), especially in relation to students' long-term ability to influence social change in society. The highly encouraged by educators learner-learner interaction has been seen to help students form a strong network and promote social inclusion (5, 7). "Learning Communities" and "Collaborative Learning" is a term mentioned often by authors, defining the later as the reciprocal and collaborative interchange among learners (1,6, 7, 10). Peer support, both in academic and non-academic context has been associated by authors with higher persistence, performance, and student satisfaction (1, 7, 10). Students consider the synchronous time they spent with their instructor as well as group assignments to be a good opportunity to hear the views and interact with their peers too (2, 7, 10), therefore even with self-regulated students, the synchronous sessions should not be made redundant (32). However, the availability of tools for peer-to-peer interaction is not enough and to achieve effective outcomes, with authors suggesting instructors' active facilitation and provision of tools to support peer to peer interaction (7, 8, 10, 12). Participation of students in professional communities (33) and, once again, the use of social networks to connect with peers is said to benefit the learning experience significantly (6, 12, 26, 27).

## 5. Conclusion

This study reviewed previous academic works in pursuit of hints for effective online learning delivery. Unlike in traditional classroom settings, a strong emphasis is put on the awareness of the learner of their own self, their discipline, motivation to acquire new knowledge and ability to reflect on it to aid a transformative learning experience. Instructor support is highly required, yet not necessarily in the traditional ways educators expect. The accessibility and attractiveness of the content plays a vital role in retaining students' attention and interest and students tend to place expectations on educators in terms of facilitating spaces for both synchronous and asynchronous interaction, including the interaction with their peers. With enablement of technology, students further place expectations for more subject-specific immersive experiences and practical assessments, as opposed to traditional coursework assignments. Based solely on secondary sources, the authors propose further primary research studies around the established framework are performed considering the views of both students and educators.

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