

EJEL Editorial 2023: Trends and Research Gaps in e-Learning

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1. Introduction

The Electronic Journal of e-Learning (EJEL) is an online open-access journal that aims to publish articles and papers that contribute to the development of theory and practice in the field of e-Learning. The journal provides a multidisciplinary forum for research on education and learning that informs theories and practices regarding how people learn and the design of e-Learning environments in various contexts. From 2021 to 2022, a total of 92 papers were published in EJEL (47 papers in 2021 and 45 papers in 2022) from 43 different countries. Out of the 282 submissions received in 2022, 12(4%) were accepted. In 2021, EJEL was ranked in Q1 in the Education category and in Q2 in the Computer Science Applications and E-Learning categories (Scimago Journal & Country Rank).

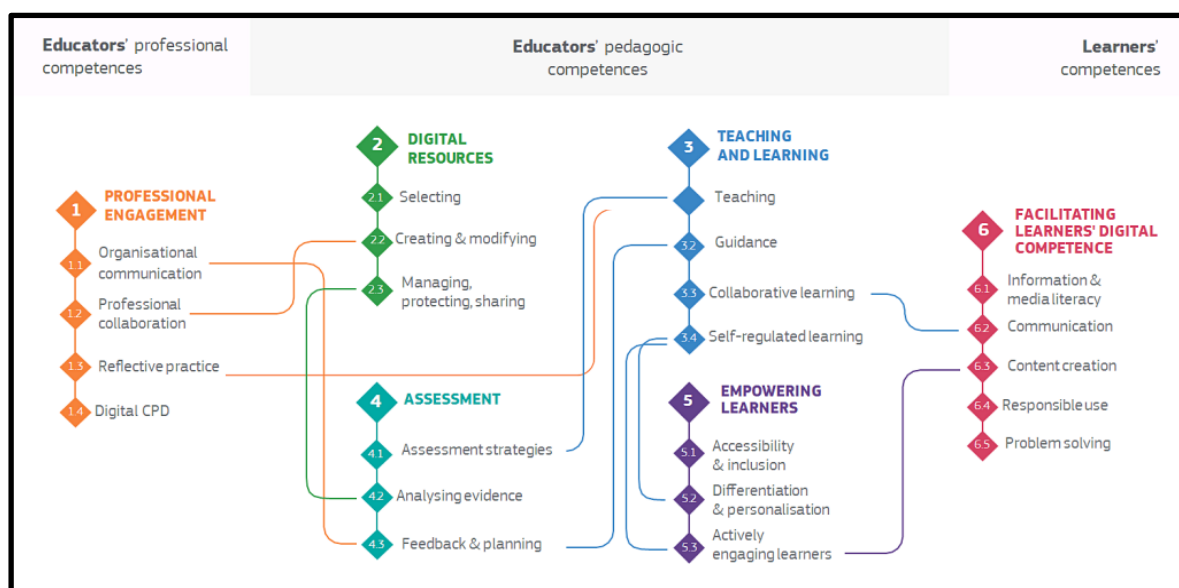
Compared to previous editorials, for this year's editorial, we have decided to adopt a new approach. By examining and presenting our published papers on e-Learning from authors worldwide, we aim to highlight trends and research gaps in the field of e-Learning from 2021 to 2022. Additionally, we will compare our findings with the most recent papers on trends and gaps published in other journals to provide a broader context. Through this approach, we hope to contribute to answering questions about which topics have been of high relevance for researchers in the field of e-Learning over the past two years and to identify areas for future research.

2. Methods

In the first step, we used the Open Journal Systems (OJS) software to identify the 30 most frequently read articles from January 1, 2021, to December 2, 2022 in EJEL. For each article, we considered the total number of abstract reads, full text (PDF) reads as well as the citation data obtained via Google Scholar as of January 11, 2022. Out of these, we focused on the ten most cited papers for our analysis because we emphasize that citations are a legitimate measure for portraying the scientific influence of a given work. The findings from these papers were mapped to the European Framework for Digital Competences of Educators (Figure 1) and to the EDUCAUSE macro trends (Figure 2), as well as trends in key technologies and practices. While macro trends focus on dimensions such as social, technological, economic, environmental and political, the key technologies and practices listed below are believed to have a significant impact on the future of post-secondary learning and teaching (Pelletier et al., 2022, p.4):

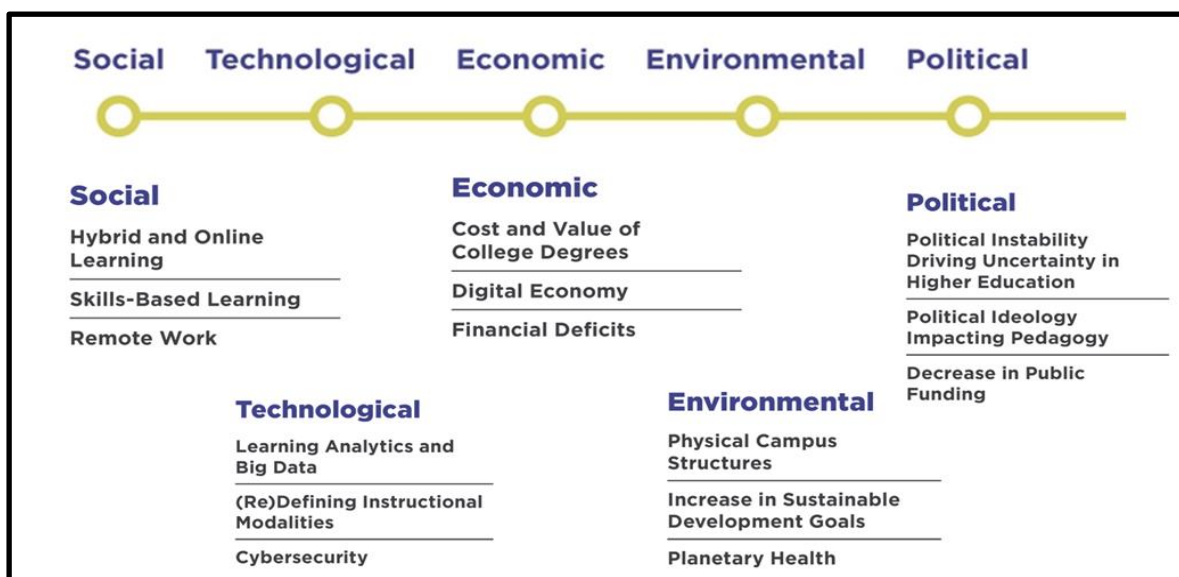
- AI for Learning Analytics
- AI for Learning Tools
- Hybrid Learning Spaces
- Mainstreaming Hybrid/Remote Learning Modes
- Micro-credentialing

- Professional Development for Hybrid/Remote Teaching.



Source: First published, in 2017, as "European Framework for the Digital Competence of Educators: DigCompEdu" by the European Commission's Joint Research Centre, EUR 28775 EN, ISBN 978-92-79-73494-6, doi:10.2760/159770, JRC107466, <http://europa.eu/!gt63ch>.

Figure 1: The European Framework for the Digital Competency of Educators (Redecker, C., 2017)



Source: First published, in 2022, in EDUCAUSE Horizon Report Teaching and Learning by Pelletier et al. (2022) under the [Creative Commons licence CC BY-NC-ND 4.0](https://creativecommons.org/licenses/by-nc-nd/4.0/).

Figure 2: EDUCAUSE Horizon Report: Macro Trends in Postsecondary Teaching and Learning (Pelletier et al., 2022)

3. Results

We start with a brief overview of the 10 most cited EJEL papers (2021-22) listed in Table 1 in alphabetical order.

Table 1: Summary of 10 Most Cited EJEL Papers (2021-2022)

Citation	Population	Phenomenon of Interest	Context
Adzima, 2021	NA (systematic review)	Online cheating	HE
Al Rawashdeh et al., 2021	Students in UAE	Students' attitudes towards online learning	HE
Alsalmi et al. 2021	Dentistry students in UAE	Impact of blended learning on students' achievement	HE
Bumblauskas and Vyas, 2021	Students in Missouri	Application of Problem-Based Learning in an online learning environment	HE
Fauzi et al., 2021	Students in West Sumatra	Factors influencing students' acceptance of e-Learning platforms (Google classroom)	HE & Covid-19
Jdaitawi, 2020	Science students in SA	Links between emotions and learning in a flipped learning classroom	HE
Karasneh et al. 2021	Lecturers in Jordan	Diffusion of innovation/ challenges to online L&T	HE
Li, 2022	1 st and 2 nd year students in China	Perceived benefits and challenges of online classes	HE & Covid-19
Lin and Nguyen, 2021	International students in Australia	Education equality, accessibility, and inclusion	HE
Metruk, 2021	EFL students in Slovakia	Perceived benefits and challenges in use of smartphones for learning	HE

Adzima (2021) explores academic dishonesty, specifically online cheating, in higher education. It discusses the factors contributing to online cheating, perceptions of cheating among students and faculty, prevalence comparisons between online and classroom settings, and differences in cheating behavior in proctored and non-proctored environments. The paper includes a clear definition of academic cheating and highlights the challenges of monitoring online cheating due to the absence of physical proctoring. The methodology employed a systematic literature review, resulting in 63 relevant articles out of an initial pool of 242. The findings indicate that some students view cheating as a means of maintaining fairness, while others cite time constraints as a justification. The absence of face-to-face contact is identified as a significant factor contributing to online cheating. The author recognizes situational factors and perceptions as influential in dishonest behavior and highlights the need for tailored approaches to address online cheating.

Al Rawashdeh et al. (2021) examine the advantages, disadvantages, and barriers to effective e-Learning in higher education in the United Arab Emirates (UAE). Conducted with a random sample of 100 students from Ajman University in 2018/2019, the survey captures students' experiences and attitudes towards e-Learning. Key findings indicate positive aspects such as increased engagement with course material (81% of participants) and enhanced interactions with peers and teachers (80% of participants). However, students also identified disadvantages, including social isolation (73% of participants) and challenges related to digital illiteracy. The authors emphasize the importance of understanding student experiences to inform educational practices. Practical implications include offering preparatory courses for prospective e-learners and improving resources and infrastructure to support successful e-Learning.

Alsalmi et al. (2021) conducted a study to examine the impact of blended learning on students' achievement. The research employed a quasi-experimental design and involved 116 dentistry students from Ajman University (UAE), who were divided into traditional and blended learning groups. The study's findings provided valuable empirical evidence, indicating that blended learning had a positive effect, especially for female students. These findings contribute to our understanding of the benefits of blended learning in a different context, namely the UAE.

The paper by **Bumblauskas and Vyas (2021)** showcases an example of the application of Problem-Based Learning (PBL) in an online learning environment at the University of Missouri. The authors provide a narrative review of

PBL's motivation, outcomes, and its significance for students' experience and for graduate marketing programs. They describe the collaboration between faculty members and graduate students from business and education fields to develop a web-based simulation, immersing students in a factory environment and addressing a challenging learning topic. The simulation proved to be more useful and productive than the original design team anticipated and has since been scaled for use by other university and industry students. The paper presents a compelling argument for hybrid online PBL learning design, a popular topic in e-Learning.

Fauzi et al. (2021) discuss the utilization of e-Learning platforms, specifically Google Classroom, among university students in West Sumatera during the Covid-19 pandemic. The study aims to identify key factors such as internet facilities, device usage, and knowledge as determinants of online learning. The paper addresses the gap between platform utilization and user acceptance, utilizing theoretical models like the Theory of Reasoned Action (TRA), Theory of Planned Behavior (TPB), and the Technology Acceptance Model (TAM) to understand levels of technology acceptance. The paper employs a questionnaire distributed to 383 students, utilizing Likert Scale questions for robust identification. Structural Equation Modelling was used for analysis, revealing that facilitating conditions significantly influenced perceived ease of use and usefulness of Google Classroom. The findings also highlight the importance of available facilities, assistance, and devices for a seamless learning experience.

Jdaitawi (2021) explores the interaction between emotions and learning in science students within a flipped learning classroom context. The quasi-experimental design involved 65 science students from a Saudi university. A comparative analysis was conducted, comparing traditional teaching methods to flipped learning approaches. The study aimed to determine if the flipped learning approach promotes positive learning emotions and which method facilitates higher positive learning emotion scores. The Learning Related Emotions (LRE) scale was used to measure student experiences at the beginning and end of the study. Results indicate a significant difference in LRE scores between students in the flipped learning group and those in traditional classrooms. The flipped learning group had higher LRE mean scores and demonstrated overall improvement. While further research is needed, these findings suggest the advantages of flipped learning in science education.

Karasneh et al. (2021) undertook a study examining the online learning experiences of university lecturers in Jordan during the pandemic, as well as the barriers to its wider adoption post-pandemic. The research involved surveying 508 educators and employing descriptive analysis of the collected data, drawing on insights from Rogers' theory of diffusion. The survey results revealed that despite many staff members considering themselves early adopters and innovators, numerous barriers still hinder the broader implementation of online learning after Covid-19. In addition to the barriers documented in the existing literature, such as limited internet access and disruptions at home, the study also identified gender differences i.e., female staff members reported facing more obstacles compared to others.

In a study investigating students' experiences of online classes during the Covid-19 lockdown, **Li (2022)** conducted an online survey with closed and open questions. The findings were categorized into four main areas: perceived benefits, challenges, student beliefs, and overall evaluation. Overall, students had a positive view of online classes, valuing the flexibility and connectedness they offered. However, challenges such as time management, distraction, assessment difficulty, and workload persisted. Notably, students did not see online classes as adequately preparing them for future careers that involve online interactions. The study emphasizes the importance of focusing on online classes specifically, acknowledging the differences between pre-lockdown and emergency e-Learning. Factors like the digital divide and the need for flexible technical environments, personalized approaches, and student involvement are highlighted. Additionally, the findings suggest a preference for a blended model combining online and face-to-face components in post-lockdown educational settings.

Lin & Nguyen (2021) present an autoethnographic study of an Asian student's experience in an Australian higher education institute during the Covid-19 pandemic. The focus is on the potential of online education to enhance educational equality, which is not supported by this international student's experience. The paper provides detailed insights into the e-Learning approaches adopted by the student. While acknowledging the limitations of studying one individual, the paper prompts researchers and policymakers to reflect on assumptions about online education and the actual experiences of international students. The student expresses dissatisfaction with the e-Learning provided, highlighting the anxiety of connecting online and the importance of the student-tutor relationship. Additionally, the paper emphasizes the need for online educational environments to consider the motivations of Asian students regarding employability benefits and parental expectations.

Metruk (2021) discusses students' attitudes towards smartphones in their English as a Foreign Language (EFL) studies at a Slovakian University. A survey was conducted to gather insights on smartphone usage both inside and outside the classroom. Out of 77 student respondents, the results indicate a generally positive view of smartphones in EFL studies, primarily due to the flexibility they offer for studying anytime and anywhere, supporting student autonomy. However, the survey reveals that smartphones are not considered essential for their studies, with fewer than half using them to practice English outside class. The author highlights the potential benefits of smartphones in EFL, such as the wide range of language learning applications and the connectivity they provide for peer practice. The results suggest that students may not fully utilize their smartphones, possibly due to the overwhelming number of available applications. Therefore, teachers play a vital role in guiding students to maximize smartphone usage for both classroom-based and independent studies.

3.1 Gap Analysis of EJEL Papers: e-Learning Competencies and Trends

The 10 most cited papers in EJEL (Table 1) are addressing a variety of competencies identified in the European Framework (Punie and Redecker, 2017) such as:

- selection of digital resources (Jdaitawi, 2021; Karasneh, et al., 2021);
- teaching (Karasneh, et al., 2021) and collaborative learning (Bumblauskas & Vyas, 2021);
- empowering learners through accessibility, inclusion (Fauzi et al., 2021; Lin and Nguyen, 2021) and active engagement (Bumblauskas & Vyas, 2021; Fauzi et al., 2021; Jdaitawi, 2021, Li, 2022);
- facilitating learners' digital competencies through the development of information and media literacy (Al Rawashdeh et al., 2021; Alsalhi et al., 2021; Metruk, 2021; Fauzi et al., 2021), problem solving (Bumblauskas & Vyas, 2021) and responsible use of technologies (Adzima, 2021).

Notably missing competencies that these papers are not researching are related to:

- professional engagement, in particular more research involving teachers' perspectives;
- creation, modification, management and sharing of digital resources;
- online assessment;
- self-regulated learning;
- differentiation and personalization.

Regarding EDUCAUSE trends (Pelletier et al., 2022), the focus of the EJEL's most cited papers was on social and economic categories, such as:

- mainstreaming of hybrid/online/remote learning modes (e.g., Al Rawashdeh et al., 2021; Alsalhi et al., 2021; Adzima, 2021; Bumblauskas & Vyas, 2021; Jdaitawi, 2021; Karasneh, et al., 2021, Li, 2022; Lin et al., 2021; Fauzi et al., 2021), as well as skills-based learning (Adzima, 2021; Bumblauskas & Vyas, 2021; Metruk, 2021);
- comparing the cost and value of college degrees (Bumblauskas & Vyas).

Therefore, more research aligned with environmental and political issues is needed, including topics such as:

- physical campus structure supporting hybrid learners;
- links between online education, sustainability, and planetary health;
- the impact of decreased public funding and political instability on e-Learning.

Last but not least, additional research is sought on specific new technologies and their applications in education such as:

- AI for learning analytics;
- AI learning tools;
- Micro-credentialing.

3.2 Meta-Analysis Of Review Articles on Online Learning

In this section, we provide a brief review of the most recent and relevant reviews of academic literature on online and hybrid learning to identify clusters of themes in the e-Learning domain as well as areas for future research.

i) The paper by **Zhang et al. (2022)** provides a holistic overview of research that investigated online learning in higher education around the globe during Covid-19. The review article was chosen for its relevance in the current post pandemic era, its global scope, and the insights it offers into our shared realities in terms of research

interest in the field of e-Learning. The authors of the review used co-citation analysis and text mining to analyse the patterns and topics of peer-reviewed papers from 103 countries or regions from the Global North and Global South, published between January 2020 and August 2021. The term *online learning* is equated to *e-Learning*, *distance learning* and *remote learning* and in any cases where the internet is being used for enhancing learning activities – *synchronous* or *asynchronous*.

The focus of the review was on uncovering research and practice trends in online learning in higher education during this period. Their bibliometric analysis methodology involved employing descriptive publication data on authors, institutions, journals, keywords, disciplines, and citations. This data served to generate networking knowledge maps within a research field along with text mining techniques to uncover research themes and promising future research directions (Ziegler, 2009). Using the Web of Science as a data base, their research questions were aimed at revealing global information regarding 1) the geographic distribution of knowledge, the most cited research, and journals with the most publications and 2) the themes that emerged from investigations of pandemic-imposed online learning in higher education. From the 1,658 articles published between January 2020 and August 2021, 1,394 were reviewed (931 open-access, 216 early-access, 246 published in traditional journals and one conference proceeding).

Acknowledging that the prime focus of this EJEL editorial is reporting on themes and research topics, it may be of interest to note that in the interpretation of the results of the review, it was found that 61.96% of the articles emanated from the Global North and 38.04% from the Global South. Also, the review reveals that the US, India, China, Spain, and Saudi Arabia produced the most articles. Of the top 10 journals publishing articles on e-Learning, 7 were educational related. Medical education and chemistry education were the most-investigated disciplines.

Regarding topics and themes, it is important in the interpretation of the findings to keep in mind that the review was conducted on articles that were produced during the pandemic. Seven clusters of themes, sometimes intersecting, and key words associated with the themes, were uncovered. Following is a list of the clusters or themes and a synopsis of key words:

- Mental health – anxiety, digital divide, assessment, inequity, stress.
- Re-designed curriculum – student-centred instructional approaches, collaborative/co-operative learning, hands on learning (clickers, videos and YouTube), professional development and support of faculty in online platforms.
- Technology acceptance and adoption – attitudes and behaviours, ease of use, usefulness, gender-differences, quality, developing countries, self-regulation, mobile learning, motivation.
- Student satisfaction – motivation, self-regulation, social presence, resource-management strategies, well-being, academic performance.
- Multiple technologies and innovations – flipped classrooms, augmented and virtual realities, design and effectiveness, student performance.
- Gamification and digital tools – Zoom, Moodle.
- Community support and barriers - Community of learners, student support, building online communities, equity, digital divide, internet connectivity, access to suitable devices, external distraction, experienced-based strategies.

In discussing their findings, the authors recognize that many of the articles come from less than high impact journals due to the lengthy timelines required for publication in these journals and the otherwise quick turnaround for others. According to the authors, the important implications of their research point to:

- A lack of studies related to *innovative pedagogical practices and strategies in online learning and the impact of online learning on students with disabilities*;
- *Advances in technology that are outpacing educational research* such as artificial intelligence, micro-credentialing, blockchain and open-education resources;
- *An imbalanced distribution of research between the Global North and Global South*;
- *A need for large-scale research* that explores country-, university-, faculty- and student-level factors that contributes to the effectiveness of different pedagogical practices for online learning.

ii) A review by **Lara, Aljawarneh, and Pamplona (2020)** traces the most recent trends in e-Learning assessment and provides a systematic review of recent topics and contributions within this area of Distance Education. The review highlights the state-of-the-art, frameworks and techniques that research projects of 10 papers report. The papers chosen through a rigorous, peer-review process demonstrate: i) *the implementation of software*

and/or hardware approaches, ii) a focus on the implications for the improvement of learning assessment, iii) a strong grounding in learning theory and/or rigorous educational research design.

Summarizing the top 10 papers chosen reveals the following areas of interest/themes in e-Learning research:

- *Student dropout in MOOC's*: developing an analytics framework for predicting students at risk through the development of a neural network used at various stages of a course and with 88.81% accuracy.
- *Psychological impact of e-Learning*: a positive correlation was found between attitudes towards e-Learning and satisfaction towards life.
- *Playfulness and anxiety in e-Learning systems*: reducing learners' anxiety in using a system is found to be far more important than playfulness in improving learning and students' system skills.
- *Ubiquitous innovative tool use*: current tool preferences – e.g., Moodle over Blackboard, the gains and risks of integrating Web 3.0 tools into 3.0 e-Learning for social learning.
- *Mining for students' self-regulation processes*: connecting students' self-regulation models to success or failure at passing a course.
- *E-learning assessment in other areas than education*: assessing education internalization (tourism) as a predictor of higher education development.
- *Blockchain technology*: the use of blockchain in managing transactions of content, teaching and competencies to close the gap between the academic and work worlds.
- *Web gamification*: games provide instant feedback and are dynamic, motivational and academically encouraging.
- *Connection between engagement and learning design*: using analytics-based interventions to inform designers about adapting learning activities to individual groups of learners' goals.
- *Analysis of prior knowledge*: the merits of analysing prior knowledge at entry levels to reveal gaps and increase competence in online courses.

The authors of the review provide several recommendations for future research in assessment in e-Learning. The recommendations include:

- increased importance given to e-Learning assessment especially in data science projects.
- expanding the horizon of e-Learning assessment beyond formal education to other areas like company learning and tourism learning.
- the ubiquity of calls in education for the need to involve new technologies, like Blockchain e-Learning assessment.
- E-Learning assessment can play a multidisciplinary role in for example Social Network analysis, Gamification strategies and Prior Knowledge evaluation.

The authors recognize the limitations of their review in falling short of reporting on all new advances regarding e-Learning assessment.

iii) Martin, Dennen, and Bonk's (2023) review of the Systematic Reviews of Research on Online Learning discusses the state of research in online learning and the need for systematic reviews to provide an overview of the current knowledge in the field. It highlights that tensions and controversies have existed in online education since its emergence in the 1980s and that research has focused on various topics such as Communities of Learning, motivation, interactivity, and assessment. The Covid-19 pandemic has further accelerated the development of online learning and provided new research opportunities. Yet, the article notes that much of the online learning during the pandemic was emergency remote learning and should be considered in context.

The special issue aims to provide a systematic overview of research in online teaching and learning. It features seven systematic reviews and two scoping reviews categorized into three focus areas: *systems level*, *pedagogical level*, and *people level*.

Systems Focus

Within this focus, two reviews are cited:

Doo, Zhu, and Bonk (2023) reviewed 191 articles published during the pandemic and found an increased global interest in online learning research in this period. The authors found a shift in studies from a heavy emphasis on learner engagement and their characteristics to also include *online course development*, the *technology tools and features utilized* in such courses, as well as *instructor training for online settings*.

Wright et al. (2023) reviewed articles to explore the components of high-quality online courses. The most common frameworks used to understand online course quality are cited as: Community of Inquiry (CoI) and more recently Universal Design for Learning (UDL) and Quality Matters (QM). They point out that the themes that arise in research on quality are: online course communication practices, discussion guidelines, appropriate feedback mechanisms, valuable organizational components, and a few assessment considerations for high-quality online courses. Flexibility in course design and delivery, more than one mode of communication between instructors and students, and multiple means of assessment are tied to ways to enhance quality. They call for further research in:

- the *professional development and training of instructors teaching via online delivery*.

Pedagogy Focus

The authors looked at 5 review articles within this area. Without citing each of the review articles, the themes covered by the reviews can be categorized into the following: *learner collaboration, help-seeking strategies, intersubjectivity, passive participation* and *assessment*. Based on the authors' findings, conclusions regarding further research included:

- more generalizable studies rather than case studies related to help-seeking;
- greater research in intersubjectivity as a means to improve practice;
- studies in passive participation to understand its connection to learning outcomes and pedagogical strategies used;
- research that studies various modes, formats, and types of assessment as well as opportunities offered by online assessment for learning, assessing collaboratively and feedback.

People Focus

Learners and instructors and their agency in online courses ultimately determine the outcomes of learning. Considering not only how each performs in class (i.e., outcomes) but also what they bring to, and need from, the online learning experience is critical. Two review articles in this area are cited:

Gardner and Leary's (2023) review of 42 articles focuses on the challenges first-generation and minoritized students face and the supports needed. They categorize the themes uncovered in three areas:

- *learner characteristics*
- *personal environment*
- *course environment*

Ahlf and McNeil's (2023) overview of 52 studies into the moderator's role in asynchronous online discussion provides a taxonomy of roles, underlines the long history of research in this area, the variety of types of research (single case studies, experimental, qualitative in that order), and the importance of the topic in terms of the implications of the roles that moderators assume for successful course designs and outcomes.

More research is deemed needed in the following area:

- *moderators' roles* to resolve and address ongoing discord.

4. Discussion

Tensions that exist in education are at the basis of all research, including in e-Learning research. By reviewing and analysing which research reports in EJEL are deemed of high interest, we gather valuable knowledge about the kinds of challenges that a majority of our readership consider are, or more precisely were, standing in the way of quality e-Learning during the period of 2020 to 2022. Further, if we map these areas of interest in research against frameworks that give a more global picture of trends, or of key interests, including those revealed by reviews in other journals, we can discover valuable information - information about existing gaps that should call for researchers' attention as they consider where to place their efforts in choosing relevant topics to pursue in e-Learning.

It is evident from our analysis that the main concern of e-Learning scholarship and its readership from 2020 to 2022 has been with the satisfaction of learners, based on their experiences in digital spaces. Satisfaction has been measured through researching levels of motivation on the part of learners, their engagement and importantly their feelings/attitudes vis à vis whether these experiences have prepared them in terms of their achieving the essential knowledge needed for the job markets that they will inhabit post formal education. Based

on our analysis also, Interest of scholars and readers around the *how* of learning - the tools used, levels of connectivity, the approaches adopted both in teaching and assessment and the expertise of educators, are viewed as key to learners' positive and inclusive experiences. Surprisingly, while many researchers in e-Learning might argue that the advantages of digital learning have been long ago established, an underlying theme from our analysis suggests that the need to prove technology-based learning's fundamental value to learning is still a trend in current e-Learning literature.

As in all research, and especially in terms of our analysis of interest and trends in certain areas, *context is everything*. It is important to point out that the trends that are revealed in this analysis are seen through the lens of the 43 countries that are represented in the body of literature that was examined. The majority involved studies conducted in the global south. While statistics are unavailable, one might assume that the readership of EJEL, and thus the interest we examined, is strongly represented by that area of the world as well. Another essential consideration is the fact that the period purposely chosen for the analysis lies during an unprecedented event affecting education, i.e., a global pandemic. Judging on the outpouring of research during this timeframe, the choice of and interest in topics of research were no doubt influenced by the fact that the numbers of willing adapters of e-Learning were far-outnumbered by those who were being *forced* by circumstances to pivot to digital learning for the first time. In other words, the results of our analysis must be read with these major contextual conditions in mind.

Comparing the results of our analysis of studies of prime interest in EJEL in the 2020-2022 timeframe with major European and North American frameworks and other leading journal reviews for the same period, can help mitigate these contextual conditions and widen the significance of our findings. Indeed, making these comparisons has led to insights into gaps that exist in current research that, as alluded to above, should be of interest to e-Learning scholars in the EJEL community and more broadly.

For example, mapping the topics of the leading articles from our EJEL analysis to the main categories and subcategories of the European FDCE framework, it is interesting to note that the lead EJEL articles fall under both the Educators' Pedagogical Competencies and Learners' Competencies but *not* Educators' Professional Engagement nor Assessment. In other words, both these latter important topics can be considered gaps in research being produced, or of less interest to the EJEL readership.

Also, performing the same mapping exercise to the North American-based EDUCAUSE framework reveals that the top EJEL articles of interest apply primarily to only one of the trends that, according to the predictions of EDUCAUSE's global committee of experts, will "shape the future of global education teaching and learning" (EDUCAUSE, 2023, n.p.). That trend is the *social* aspects of e-Learning. Yet, topics related to the *technological*, *economic*, *political*, and *environmental* areas of e-Learning have received much less focus or indeed lack interest in EJEL, especially the latter two areas. The same is true of the technologies and practices that EDUCAUSE cites (see Figure 3) that will have a significant impact on teaching and learning. How can we encourage researchers to diversify towards examining topics related to these important trends, technologies and practices? One response is to feature special issues on such topics.

5. Conclusions

Our analysis has indicated several gaps in the literature that will need to be attended to if stakeholders in e-Learning education are to be well informed and prepared for the evolving realities in this post pandemic period. In our comparison of e-Learning reviews in three other major journals we see similar trends identified. Interestingly, the same themes arise in these articles – the same focus on students' experiences and satisfaction and on the multiple *how* factors – the tools, connectivity, approaches to learning and assessment, expertise of educators, inclusivity issues, the same questions about the acceptance of the value of e-Learning. One review conveniently categorized these trends into *system*, *pedagogical* and *people* issues. At the same time, and not surprisingly, similar indications in these reviews indicate a recognition of the technologies and practices cited by EDUCAUSE as of key importance going forward - AI, blockchain, micro-credentialing, hybrid learning spaces and professional development for these tools and spaces. In addition, the issues related to the *economic*, *political* and *environmental* areas of e-Learning and competencies in the areas of *assessment and professional development* can be identified as gaps in the most cited EJEL publications (2021-2022). Researchers and the journals that support such research cannot fail to see the loud call for investigations in these critical areas. Journals like EJEL concerned with the development of quality e-Learning globally will need to take a leadership role in responding.

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