Impacto de la educación virtual en la motivación y rendimiento académico del aprendizaje del inglés

Impact of virtual education on motivation and academic performance in learning English

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▪ **Resumen**

La enseñanza- aprendizaje de inglés requiere de estrategias educativas que favorezcan la autodeterminación y motivación en los estudiantes siendo las plataformas y recursos digitales herramientas novedosas. El objetivo planteado en la investigación consistió en analizar el impacto de la educación virtual en la motivación para el aprendizaje del inglés y el rendimiento académico de esta asignatura dirigida a estudiantes de séptimo grado de Educación General. La investigación fue descriptiva y longitudinal, se empleó una encuesta y entrevista identificando las percepciones y aptitudes de las estudiantes en el uso de plataforma virtuales. Tanto para la educación virtual e hibrida la integración de herramientas y plataformas virtuales favorece en este grupo etario el aprendizaje del inglés incidiendo en la motivación y el rendimiento académico.

▪ **Palabras clave**: aprendizaje, inglés, autodeterminación, motivación, rendimiento académico, virtual.

▪ **Abstract**

The teaching-learning of English requires educational strategies that promote self-determination and motivation in students, with digital platforms and resources being innovative tools. The objective set in the research was to analyze the impact of virtual education on the motivation to learn English at seventh grade General Education students. The research was descriptive and longitudinal, a survey and interview were used to identify the perceptions and aptitudes of the students in the use of the virtual platform. In the virtual and hybrid education, the integration of virtual tools and

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platforms favors the learning of English in this age group, influencing motivation and academic performance.

▪ Introduction

In the dynamic educational landscape of the city of Cuenca, Ecuador, significant challenges persist in the effort to provide accessible, equitable, and high-quality learning experiences for a diverse population. As a city marked by its rich cultural diversity, it has faced historical obstacles such as the pandemic, national strikes, and insecurity within the country, all of which have impacted educational progress. These challenges have driven the search for innovative solutions, leveraging the benefits that emerged from the mandatory virtual education during 2019 and 2020.

In terms of education, the importance of a transformative approach is highlighted, utilizing digital tools and communication networks to provide learning opportunities (Crisol et al., 2020; Magayanes and Minda, 2022). According to the authors, this goes beyond simply migrating education to digital platforms; it also aims to transform the educational experience through the integration of innovative technologies.

Franco (2021) and Klein (2019) emphasize that academic performance is considered as the convergence of students' cognitive skills and motivations, which become crucial for optimizing their performance in virtual educational contexts. Similarly, Delgado and Mendez (2022) provide valuable insights by exploring the interaction between students and technologies in virtual learning environments, thus contributing to a comprehensive understanding of the factors influencing academic performance in virtual education.

▪ Self-determination theory

It is interesting to explore the impact that virtual education has on student motivation and its influence on academic performance. In this regard, student motivation emerges as a fundamental pillar for meaningful learning (Ayala and Gastelum, 2020).

Specifically, the authors describe that "Self-Determination Theory" encompasses motivation and human behavior, focusing on the satisfaction of basic psychological needs such as autonomy and competence. As a macro-theory of human motivation, it is understood as the energy, direction, persistence, and purpose behind behaviors, including intentions and actions in individuals. The model proposed in this theory supports its application in various areas of human activity.

This theory, proposed by Deci and Ryan in 1985, argues that although the total amount of motivation is important, its type or quality is even more so. The theory establishes a hierarchical structure of the concept of motivation, which includes three levels of generalization: global, contextual, and situational. Stover et al. (2017) mention that a recursive hierarchy connects these three levels, each presenting a uniform sequence. Through mediators composed of the fundamental psychological needs of competence, autonomy, and relationship, social factors influence motivation. Additionally, three types of motivation are identified: intrinsic (IM), extrinsic (EM), and amotivation (A). The first involves performing activities solely for the pleasure derived from the task itself. EM refers to behaviors carried out solely to achieve an external goal. Amotivation indicates uncontrolled behavior in individuals who experience a lack of purpose (Deci & Ryan, 1985, 2000).

It is important to note that Self-Determination Theory offers a perspective on motivation that considers both the total amount and the type or quality of motivation, distinguishing it from other historical and contemporary theories. Therefore, Harrison (2023) emphasizes the importance of designing classes with digital media that allow students to feel motivated while simultaneously being autonomous and competent.

▪ **Digital transformation**

In the realm of digital media integration within educational settings, the study by Zarubina et al. (2024) explored digital transformation in the promotion of university educational services in Kazakhstan, analyzing the needs and values of Generation Z. Through methods such as website analysis and data correlation, the study identified a connection between web search queries on university websites and the values of this

generation, highlighting the importance of updating educational websites and offering relevant content. Their conclusions underscore the need to adapt promotional strategies to technological and generational demands.

An important contribution comes from Alvarado et al. (2024), which examined digital transformation and the challenges faced by the Peruvian educational sector during the COVID-19 pandemic through a systematic review. The study identified digital strategies implemented by educational institutions, as well as challenges related to teacher training and the quality of online learning, emphasizing the importance of addressing these challenges to improve the quality of teaching and ensure continuity of learning during crises like the pandemic.

Regarding motivation in the educational context, the study by Aladini et al. (2024) investigated the impact of two modes of instruction, online and in-person classes, on academic resilience and motivation. Using a quasi-experimental design with two intact groups, it was observed that online classes significantly increased student resilience and motivation compared to traditional in-person classes. Additionally, online classes positively impacted teacher support and the enhancement of personal goal-setting. These findings highlight the effectiveness of performance-based assessment in the online learning environment for improving these fundamental aspects of learning.

Luna et al. (2023) examined the use of immersive technologies in self-regulated learning through a systematic review. The study identified a growing interest in the subject, especially in Europe and Latin America, providing a broad view of the use of immersive technologies and how they affect student performance and motivation in virtual learning environments.

Rakow et al. (2023) investigated the impact of virtual learning environments on the mental well-being of university students in the United Kingdom. Using an inductive qualitative approach, they identified three main themes: teachers' use of virtual environments, the technological features of these environments, and students' perceptions of their use. The results underscored the importance of course content

organization and clear communication of expectations by teachers to influence the learning experience and student well-being.

▪ Virtual environment in educational levels

The use of virtual environments at different educational levels saw a significant increase from 2020 onwards, spurred by the COVID-19 pandemic, which contributed to significant changes in educational institutions. According to García (2021), the need to adapt to lockdown and social distancing scenarios drove the incorporation of technologies as essential tools for continuing educational activities. However, this transition to virtual education revealed deficiencies in digital transformation strategies at both the institutional and individual levels. This situation presents a broad context for understanding the impact of virtual education on motivation and academic performance, as noted by Berrío (2023).

The study by Barreto et al. (2023) examines the educational transformations during the pandemic, highlighting the need to explore its impact on academic performance and student motivation. Two main trends were identified: the growing innovation in educational technologies and the expansion of digital education. This includes advancements in tools such as learning management systems and the use of artificial intelligence. Additionally, there has been widespread adoption of distance learning methods, such as recorded online classes and MOOCs. These changes offer flexibility and learning effectiveness.

Building on the contributions regarding the integration of virtual environments and educational resources that foster student motivation, this research focuses on understanding how the digital environment influences students' academic performance and motivation, in accordance with the educational policies of the Ministry of Education of Ecuador (2020). Two main challenges are identified: the frequency of use of digital platforms, and students' academic performance and motivation in completing virtual tasks and mastering content. The consequences of not adequately addressing this issue could perpetuate educational inequalities, restrict

learning opportunities, and negatively impact students, as previous studies by Morena et al. (2022) and Zhang and Yu (2023) have noted.

Ultimately, this research aimed to analyze the impact of virtual education on learning motivation and academic performance in the subject of English among the students at "Luisa de Jesús Cordero" school, in the context of learning English as a second language. Through a comprehensive analysis of students' experiences, perceptions, and performance, the research aspires to contribute to the ongoing dialogue about the role of virtual education as a catalyst for positive educational and social change.

▪ **Methodology**

This research combines quantitative and qualitative data collection and analysis techniques. The study was descriptive and longitudinal, based on a case study conducted at the "Luisa de Jesús Cordero" school. According to Heale and Twycross (2017), case studies are a common research methodology in the social sciences. They have also been defined as a thorough and systematic study of a single person, group, community, or other unit, in which the researcher meticulously analyzes data related to a series of variables.

The longitudinal perspective allowed for the examination of changes in the implementation and impact of virtual education and its effect on academic performance. Grade records of the participants' average marks in the English subject were used for the academic years 2019-2020, 2020-2021, 2021-2022, and 2022-2023, comparing periods with virtual modality and differentiating them from those with hybrid modality. A validated survey and interview identified the experiences, perceptions, and attitudes of students toward virtual education in context.

Convenience sampling was used. According to Lines et al. (2022), convenience sampling is a method in which elements are chosen to be part of the sample because they are readily available, accessible, or convenient for the researcher. Therefore, the entire population of seventh-grade female students at "Luisa de Jesús Cordero" school, consisting of 80 female students aged between 11 and 12, was chosen. The selection was based on their ability to independently manage digital and virtual educational

platforms in the study of the English subject, their parents' informed consent to participate in the study, and the authorization of the school's principal.

▪ **Results**

The results are presented below, identifying the relationship between the integration of virtual platforms and motivation, as well as their impact on academic performance in the teaching and learning of English as a second language.

▪ **Educational modality and academic performance**

This section compares the evolution of academic performance in English for seventh-grade students in basic general education before and after the integration of virtual education.

Table 1: Annual English averages according to study modality

Academic year	Modality	Average	Qualitative Scale
2019 - 2020	Onsite	8,40	Meets required learning outcomes
2020 - 2021	Virtual	9,24	Mastery of required learning outcomes
2021 - 2022	Virtual y onsite	8,82	Meets required learning outcomes
2022 - 2023	Digital onsite	8,92	Meets required learning outcomes

Source*:* Own elaboration (2024)

During the 2019–2020 academic year, classes were conducted in person, and the average English grade was 8.40 out of 10, which is categorized as "Meets required learning outcomes" according to the qualitative scale used. In contrast, during the 2020–2021 academic year, when classes were held virtually due to the pandemic, the average grade significantly increased to 9.24 out of 10, categorized as "Mastery of required learning outcomes."

For the 2021–2022 academic year, which combined in-person and virtual modalities, the average grade was 8.82 out of 10, again in the "Meets required learning outcomes" category. Finally, in the 2022–2023 academic year, with in-person classes

incorporating digital platforms, the average grade remained high, registering a value of 8.92, also in the "Meets required learning outcomes" category.

These findings suggest that the transition to virtual education, although initially challenging, qualitatively resulted in a "Mastery of required learning outcomes" by academic period. The combination of in-person classes with virtual tools also proved effective in maintaining high levels of academic performance.

▪ **Motivation and learning environments**

The relationship between the frequency of digital platform use, academic performance, and motivation is presented in Table 2.

Table 2: Survey results on platform use, academic performance, and student motivation in a virtual learning environment

Statements	5	4	3	2	1
I regularly use educational digital platforms to study or complete homework.	35%	17%	28%	20%	0%
I prefer learning through digital platforms rather than traditional methods.	67%	13%	11%	9%	0%
Educational digital platforms have improved my academic performance.	55%	10%	32.5%	2.5%	0%
I find it difficult to use educational digital platforms.	2.5%	7.5%	20%	12.5%	7.5%
I find educational digital platforms useful for my learning.	13.75%	47.5%	38.75%	0%	0%

Source*:* Own elaboration (2024)

35% of the students always use educational digital platforms for studying or completing assignments, and 17% do so almost always. This indicates that the majority of respondents frequently use these digital tools.

Regarding the preference for digital learning over traditional methods, 67% of students strongly agreed with this statement, while 13% agreed. This demonstrates that 80% of students prefer virtual education and have a positive attitude toward it.

In evaluating the impact of digital platforms on academic performance, 55% of students believed that the use of virtual platforms had a positive impact on their academic performance, while 10% agreed. Only 2.5% of students reported difficulties in using these platforms, indicating a need for teacher support in assisting students with the use of the applications available on virtual platforms.

Regarding the usefulness of these platforms for learning, 13.75% of students strongly agreed that digital platforms are useful for their learning, and 47.5% agreed. 38.75% remained neutral regarding whether virtual platforms improved their learning. This suggests that for a significant group of students, the learning mode does not determine academic achievement, highlighting the need for effective didactic strategies in the teaching of a second language, supported by digital resources.

The reasons behind improved academic performance due to the use of digital educational platforms range from the interactivity and dynamism they offer to greater retention of information. Among the explanations provided by the participants were increased practicality and visual learning, enhanced understanding of concepts, the autonomy to learn at their own pace, the ability to review content at home, the perception that learning becomes more enjoyable, and improved retention of acquired information. These responses reflect a general perception among students that digital educational platforms positively influence motivation and contribute to their academic performance by providing a more efficient and effective learning experience.

▪ **Virtual platforms and usage preferences**

The use of virtual platforms is influenced by student preferences. Therefore, the students were surveyed on which platforms they prefer, allowing teachers to identify and adjust teaching strategies in English instruction based on platform characteristics.

Table 3: Student perceptions of the most frequently used digital educational platforms

Platform	Relevance	Description of the findings

Youtube	24%	Used for watching educational videos and tutorials on various subjects, offering a wide range of available educational content
Tiktok	20%	Preferred for its short, dynamic videos that facilitate quick and entertaining learning
Liveworksheet	16%	Used for interactive exercises allowing students to practice grammar and vocabulary effectively
Duolingo	12%	sed for language learning in a playful and entertaining manner, encouraging self-directed learning
Otros	28%	Various platforms are mentioned for offering specific educational resources

Source*:* Own elaboration (2024)

The results show distinct preferences that can guide teachers in selecting tools for learning. YouTube emerges as the most relevant platform, with 24% of students preferring it for educational activities. Students value YouTube for its accessibility and the diversity of educational content available. Educational videos and tutorials allow for visual and dynamic learning, making it easier to understand complex topics.

TikTok, with a 20% preference, is another notable platform. Students appreciate TikTok's short, dynamic videos, which facilitate quick and engaging learning. The brevity of the videos maintains students' attention and quickly captures their interest. Additionally, the ability to follow educational creators and participate in educational challenges contributes to its popularity.

Liveworksheet is preferred by 16% of students for offering interactive exercises. This platform allows for the practical and effective practice of specific skills, such as grammar and vocabulary. Students find the interactive exercises useful for promoting greater engagement and retention in learning.

Duolingo, with a 12% preference, is mainly used for language learning. Students appreciate Duolingo's playful and entertaining approach, which facilitates self-directed learning. The gamification of the learning process and the progressive structure of the lessons are features valued by students.

Finally, 28% of students mention the use of various other platforms, such as Academicloud, Worldwall, Pixton, Canva, etc. Each of these platforms provides

specific resources valued by students. These range from accessing materials shared by teachers and peers to creating multimedia content. These platforms offer useful tools that complement second language learning, particularly English.

Regarding the factors that influence the use of digital educational platforms and are of interest to students, Table 4 presents this preference.

Table 4: Factors influencing the use of educational digital platforms according to student perception

Platform	%	Descripción del hallazgo
Ease of access	27%	Students prefer platforms that are easy to use and navigate.
Variety of resources	20%	Students value platforms offering diverse content, such as educational videos, interactive exercises, and study materials.
Fun	20%	The playful aspect of educational platforms motivates students to use them more frequently, making them more appealing and enjoyable.
Content quality	13%	The relevance and structure of the content are crucial for students, who prefer platforms that offer high-quality information.
Autonomy	13%	The ability to learn at their own pace and independently is highly valued, as it enhances students' academic performance.
Other	7%	Interactivity and online collaboration opportunities enrich the learning experience, allowing students to participate in group projects and use content creation tools.

Source: Own elaboration (2024)

Based on the interviews and survey conducted, several factors emerged as determinants for the use of digital educational platforms by students. Ease of access was identified as one of the most significant aspects, validated by 27% of participants who highlighted a preference for intuitive and easy-to-navigate platforms. This factor facilitates more frequent use, allowing students to quickly access available educational resources.

The variety of resources piqued the students' interest, validated by 20% of participants who emphasized the importance of versatility, such as the availability of content including educational videos, interactive exercises, and study materials provided by

teachers. This diversity enables students to tailor their learning to different styles and individual needs, enriching their educational experience.

The playful aspect of educational platforms is another factor of interest, with 20% of students finding these elements crucial in increasing usage frequency. Students feel additional motivation when learning is presented in an entertaining and engaging way, significantly contributing to their active participation in educational activities.

Content quality also stood out in the interviews, with 13% of students identifying it as a key factor. They value the relevance and structure of the educational material available on digital platforms. Platforms offering accurate and well-organized information are preferred, as they facilitate a deeper and more effective understanding of the topics being studied.

Autonomy in learning, with 13% of students mentioning it in the interviews and surveys, is highly appreciated. The ability to learn at their own pace and independently allows students to better manage their study time and adapt the educational process to their individual needs. This approach increases their academic autonomy and contributes positively to their overall performance.

Lastly, other factors such as interactivity and online collaboration opportunities were also highlighted, with 7% of students emphasizing these elements. These features enable students to engage in group projects, virtual discussions, and use content creation tools, further enriching their learning experience and promoting dynamic and collaborative English learning.

▪ **Discussion**

The results of this research show that the transition to virtual education has had a significant impact on the academic performance and motivation of students from the "Luisa de Jesús Cordero" school. The integration of virtual platforms increases interest in learning English, positively affecting academic performance, as observed in the academic periods considered in the research, both in virtual and hybrid modalities. This finding is consistent with research by Crisol et al. (2020) and

Magayanes and Minda (2022), who emphasize the importance of using digital tools and communication networks to provide effective learning opportunities.

Additionally, student motivation is enhanced by the integration of digital learning, as 80% of participants prefer digital resources and platforms in both virtual and hybrid modalities that facilitate autonomous processes, which is reflected in increased motivation. This aligns with Deci and Ryan's (1985) self-determination theory, which highlights the importance of autonomy and competence in student motivation. Ayala and Gastelum (2020) also emphasize that motivation is a fundamental pillar for meaningful learning, and our research confirms that digital platforms can meet students' basic psychological needs.

Regarding the use of educational platforms, YouTube and TikTok were found to be the most popular platforms among students due to their accessibility and dynamic content. This is in line with the findings of Zarubina et al. (2024), who identified the need to update educational websites and offer relevant content to meet the technological demands of Generation Z, particularly in the teaching of a second language.

On the other hand, authors such as Delgado and Méndez (2022) and Franco (2021) highlight the interaction between students and technology in virtual learning environments as a crucial factor for academic performance. Our results support this perspective, as the majority of students considered that the use of virtual platforms had a favorable impact on their academic performance.

Finally, the digital transformation in education, driven by the COVID-19 pandemic, has been studied by various researchers. García (2021) and Barreto et al. (2023) point out that the adoption of educational technologies was essential to continue educational activities during the pandemic, although they also revealed deficiencies in digital transformation strategies. Therefore, based on this research, it was found that hybrid education, combining in-person classes with virtual tools, can maintain high levels of academic performance and student motivation in learning a second language such as English.

▪ Conclusions

Virtual education has had a significant impact on the motivation and academic performance of students from the "Luisa de Jesús Cordero" school in learning English as a foreign language. The students' preference for the use of digital platforms and tools highlights the effectiveness of virtual education when accompanied by appropriate didactic strategies.

It is important to emphasize that these findings align with previous studies that underline the importance of motivation as a crucial component in meaningful learning and autonomy in learning. The research confirms that digital platforms can facilitate student motivation. Self-determination theory provides a useful framework for understanding how autonomy and competence can be fostered in virtual environments that support second language learning.

For future research, it is essential to explore how different digital tools can be effectively integrated into both face-to-face and virtual education for English teaching, exploring immersive technologies and diverse learning environments such as social media, the metaverse, and augmented reality, which could be a fruitful area for research in the Ecuadorian context.

▪ Bibliographic references

Aladini, A., Bayat, S., & Abdellatif, M. (2024). Performance-based assessment in virtual versus non-virtual classes: impacts on academic resilience, motivation, teacher support, and personal best goals. *Asian-Pacific Journal of Second and Foreign Language Education*, 9(1), 5.

Alvarado, A., Fernández, J., & Meneses, B. (2024). Transformation and digital challenges in Peru during the COVID-19 pandemic, in the educational sector between 2020 and 2023: Systematic Review. *Data and Metadata*, 3, 232-232.

Ayala, C., & Gastélum, G. (2020). Teoría de la autodeterminación en el contexto de educación física: Una revisión sistemática. *Retos: nuevas tendencias en educación física, deporte y recreación*, (38), 838-844.

Barreto, I. B., Sanchez, R. M. S., Sanchez, W. S., Jordan, O. H., & Escalante, J. D. B. (2023). The Process of Digital Transformation in Education During the COVID-19 Pandemic. *International Journal of Professional Business Review*: *Int. J. Prof. Bus. Rev*., 8(9), 22.

Berrío, S. E. C. (2023). Transfiguraciones educativas en contextos de pandemia. Educación virtual y presencial en conflicto. *Revista Venezolana de Gerencia*: RVG, 28(102), 650-664.

Crisol, E., Herrera, L., & Montes, R. (2020). Educación virtual para todos: una revisión sistemática. *Education in the Knowledge Society* (EKS), 21, 13. https://doi.org/10.14201/eks.23448

Delgado Pinto, E. D., & Mendez Candelo, A. K. (2022). *Educación virtual y su influencia en el aprendizaje de los estudiantes de octavo semestre en una unidad académica de educación superior* (bachelor's thesis, universidad de guayaquil-facultad de ciencias psicológicas).

Franco Farías, S. A. (2021). *Tendencias educativas modernas para entornos virtuales* (Bachelor's thesis, Universidad de Guayaquil. Facultad de Filosofía, Letras y Ciencias de la Educación.).

García, F. J. (2021). Digital transformation in the universities: Implications of the covid-19 pandemic. *Education in the knowledge society* (EKS), (22), 1.

Harrison, T. (2023). Virtual reality and character education: Learning opportunities and risks. *Journal of Moral Education*, 1-21. Advance online publication. https://doi.org/10.1080/03057240.2023.2206553

Heale, R., & Twycross, A. (2017). What is a case study? *Evidence-based nursing*, 21(1), 7-8.

Klein, M. (2019). Self-determination theory: Basic psychological needs in motivation, development, and wellness. *Sociologicky Casopis*, 55(3), 412-413.

Lines, T., Burdick, C., Dewez, X., Aldridge, E., Neal-Williams, T., Walker, K., & Taylor, D. M. (2022). Nature and extent of selection bias resulting from convenience sampling in the emergency department. *Emergency Medicine Journal,* 39(4), 325-330.

Luna, A., Colón, A. M. O., & Moreno, J. R. (2023). Immersive technologies in self-regulated learning: Systematic review of scientific literature. *Digital Education Review*, (44), 105-113.

Magayanes, I. E. C., & Minda, L. E. B. (2022). Adaptación del aprendizaje presencial al ambiente virtual en la enseñanza de inglés en la educación superior tecnológica. *Revista Científica Arbitrada Multidisciplinaria PENTACIENCIAS*, 4(5), 331-343.

Ministerio de Educación. (2020). Plan Nacional de Desarrollo Educativo. Informe técnico. Recuperado de https://www.mineducacion.gov.co/1759/w3-article-396796.html

Morena, I., Rosas, M. O., & Saraceni, A. C. (2022). Enseñanza y aprendizaje virtual de inglés en la universidad: percepciones del estudiantado hacia una modalidad pospandemia. *Revista de Investigación del Departamento de Humanidades y Ciencias Sociales*, (22), 159-182.

Rakow, K. E., Upsher, R. J., Foster, J. L., Byrom, N. C., & Dommett, E. J. (2023). "It Ain't What You Use, It's the Way That You Use It": How Virtual Learning Environments May Impact Student Mental Wellbeing. *Education Sciences*, 13(7), 749. https://doi.org/10.3390/educsci13070749

Stover, J. B., Bruno, F. E., Uriel, F. E., & Fernández Liporace, M. (2017). Teoría de la Autodeterminación: Una revisión teórica. *Perspectivas En Psicología*, 14(2), 105-115. Recuperado a partir de http://perspectivas.mdp.edu.ar/revista/index.php/pep/article/view/332

Zarubina, V., Zarubin, M., Yessenkulova, Z., Salimbayeva, R., & Satbaeva, G. (2024). Digital transformation of the promotion of educational services of Kazakhstani universities. *Journal of Innovation and Entrepreneurship*, 13(1), 3.

Zhang, K., & Yu, Z. (2022). Effects of Gamification on Learning Outcomes, Satisfaction, Engagement, and Motivation in Virtual Learning Environments Between 2020 and 2022. *International Journal of Online Pedagogy and Course Design* (IJOPCD), 12(1), 1-18.