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To Link this Article: http://dx.doi.org/10.6007/IJARPED/v11-i1/12861 DOI:10.6007/IJARPED/v11-i1/12861

Received: *16 January 2022,* ***Revised:*** 20 *February 2022,* ***Accepted:*** 01 *March 2022*

Published Online: 19 *March 2022*

In-Text Citation: (Abuhassna et al., 2022)

To Cite this Article: Abuhassna, H., Awae, F., Zitawi, D. U. D. Al, Bayoumi, K., & Alsharif, A. H. (2022). Hybrid Learning for Practical-based Courses in Higher Education Organizations: A Bibliometric Analysis. *International Journal of Academic Research in Progressive Education and Development*, *11*(1), 1055–1064.

Vol. 11(1) 2022, Pg. 1055- 1064

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Hybrid Learning for Practical-based Courses in Higher Education Organizations: A Bibliometric Analysis

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Abstract

Hybrid Learning allows practitioners to conduct their teaching and learning approaches in an understandable and generic mode. Hybrid Learning's strength is in its ability to spark reflection about educational practices and illuminate practitioners to design the educational environment from the learner perspective, particularly practical-based subjects. At the same time, the existing and recent literature focused on implementing online learning and blended learning platforms. To reach the objectives, the literature accessed of Scopus databases covering research published between 2011 and 2021 and 39 items were analyzed. The bibliometric analysis will identify the cluster themes based on texting frequency. The vital steps of data classification follow thoughtfully and carefully in the platform of concept, findings, author's reputation, and years published. In the last conclusions of the study, reports will explain past literature and recent outbreak. This review is expected to have the following significance: (1) Fill the knowledge gap regarding the hybrid learning concept in higher education institutions. (2) Provide a foundation of the hybrid learning model implementation among higher education institutions.

Keywords: Hybrid Learning, Practical-Based Subject, Students' Engagement

Introduction

Even though creating hybridity begins with technological set-ups and solutions, that is among other conditions of building users' experience within a specific setting since technology has yet to change learners' practice (Stahl et al., 2014). By Goodyear et al (2021), education space is abstracted as the ecosystem of students, educators, furniture, buildings, digital resources and materials, and educational practices. With that in mind, it is essential to examine how people feel about hybrid education patterns and investigate how educators and students are experiencing hybrid education. Such as literature emphasizes that learner engagement is

affected by the content-based varieties such as educational settings (Shi et al., 2021; Raes et al., 2020; Bond and Bedenlier, 2019) or teaching approaches (Heilporn et al. 2021), it is essential to examine how learner engagement as a critical learning outcome has been influenced both by the synchronous hybrid learning design environment along with the participation type, considering that learners can access the hybrid classes in several ways.

All efforts must be utilized throughout all learning environments to guarantee that both instructors and learners achieve their goals and purposes (Masrom et al., 2021; Abuhassna et al., 2021; Abuhassna and Awae, 2021; Van et al., 2021). Thus, this research deals with the problematic nature of the combination between remote and face-to-face learning environments by providing hybrid learning environments in practical-based subjects. The combined nature requires learners, especially in the practical-based subject, to develop an integrated knowledge base, but this is problematic as the most practical-based issues need social interaction and tactile learning opportunities (Abuhassna et al., 2020a; Abuhassna et al., 2020b; Abuhassna et al., 2022a; Abuhassna et al., 2022b).

Although learner's success in every learning environment, more specifically in hybrid learning environments where this success relies on several aspects, not all these aspects are controllable by the instructor or the facilitator; thus, a lot could be done to alleviate and anticipate obstacles during hybrid learning sessions. Likewise, facilitators and instructors who have consistent knowledge of hybrid learning methods and strategies and the capability and skills to implement them will have the opportunity to provide an excellent hybrid learning session to achieve the objectives of the session and make their learners enjoy such an experience (Abuhassna and Yahya, 2018; Mammana et al., 2017)

Material and Methods

The systematic literature review (S.L.R.) is a guide to enhance the reviews and meta-analysis (Moher et al., 2009). The PRISMA statement template explains the overall research process to select and reject articles in this S.L.R. This S.L.R. base study is limited to published literature on the topic of hybrid learning and practical courses. Scopus database was used for the literature extraction. Keywords are used hybrid learning the search bar, and the database's total results are.

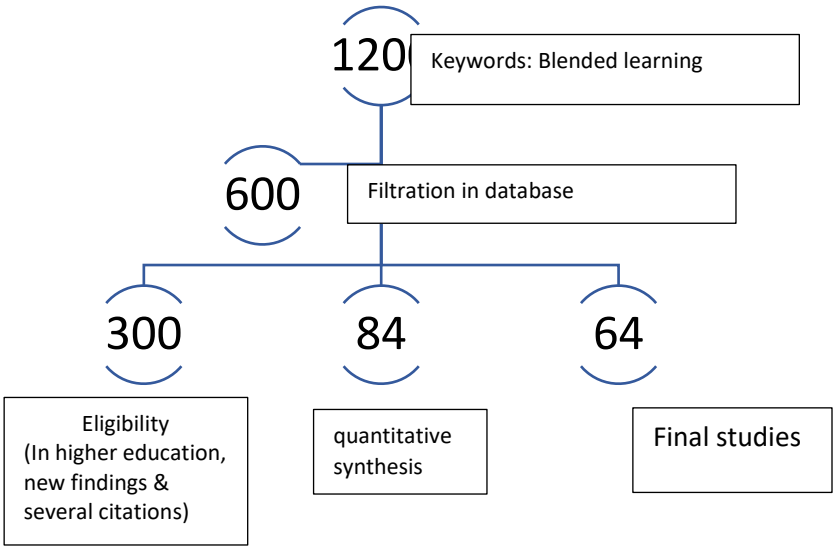

Fig. 1. PRISMA statement 2015

For the other process, subjects are selected for the current study, Social Sciences, Engineering, Environmental Sciences, Computer science. The results are narrowed down to 600. Further on only articles, publishing stage final published paper, language English is chosen in the database. Results are narrowed down to 300 with a limited number of published years and citations. After removing the duplication and irrelevant literature, the final 64 studies are included for the review. Figure 1 shows the detailed process of data selection.

Results

a. Descriptive Analysis

The study focused on hybrid learning and practical courses in higher education with reviews accessed in a digital database.

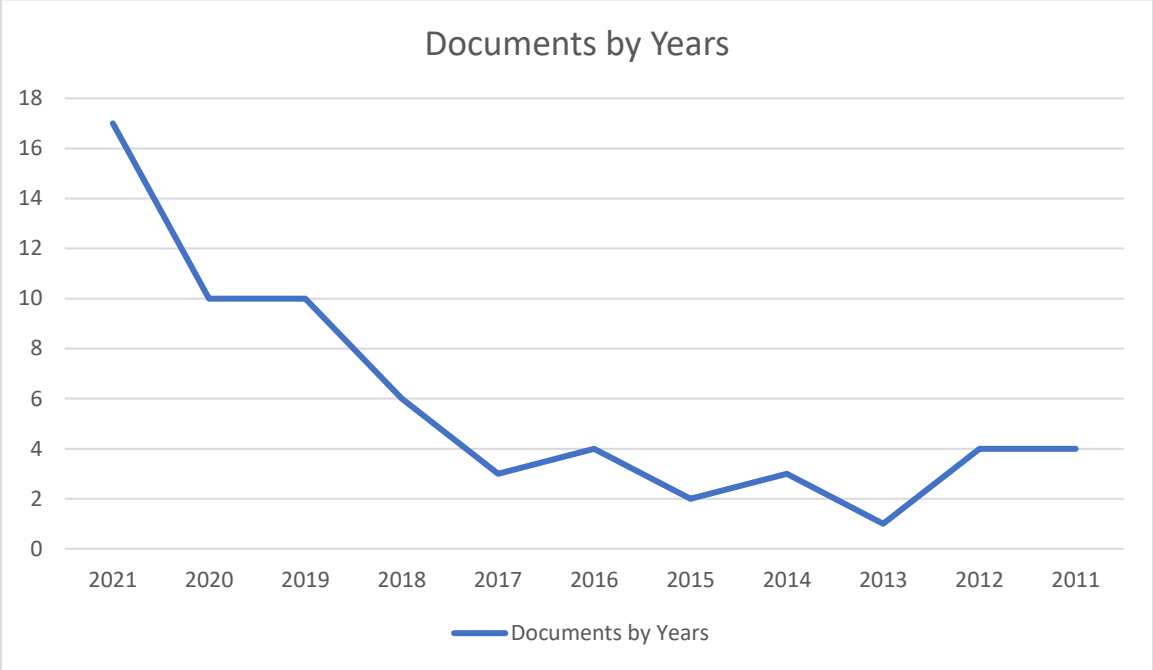

Fig. 2. Number of studies by years

Figure 2 shows the significantly growing number of papers from 2011 to 2021 in Scopus databases, such as the year 2021 contributing the highest number with 17, and 10 documents in 2020. And there was a stably increasing number of papers regarding hybrid learning and practical courses published in the years between this period based on the graph of literature, for example, there were 64 papers were published between 2011-2021.

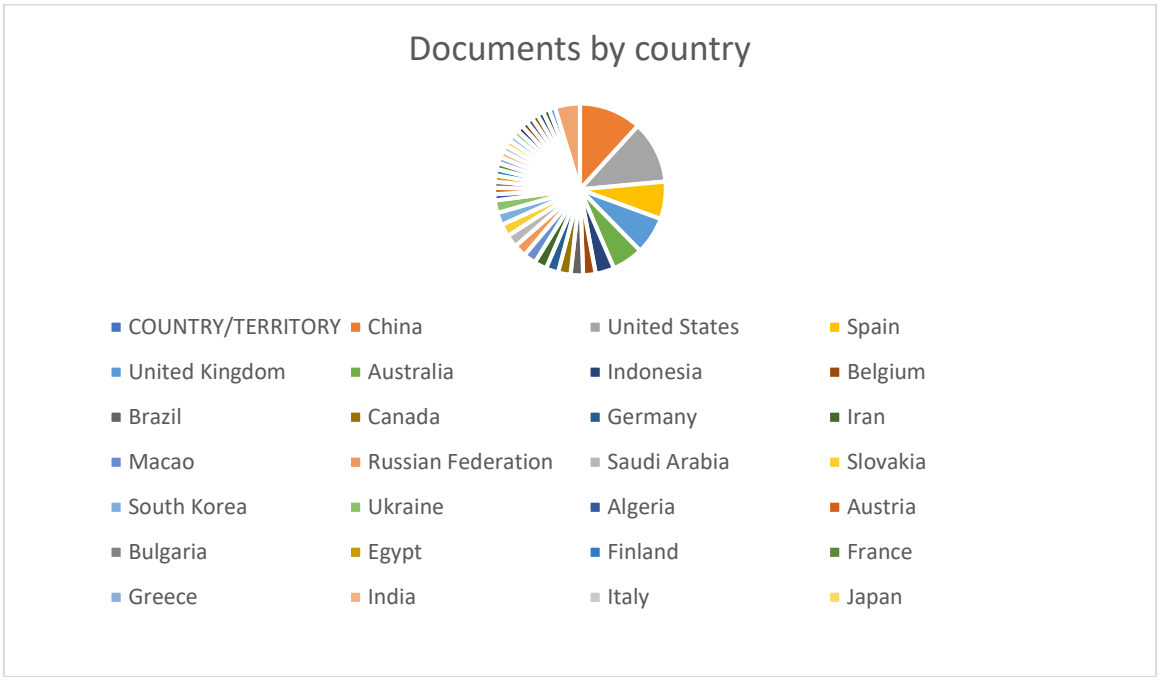

Fig. 3. Country and research field base Publication

Fig. 3 shows the countries and fields base publication. The literature includes three groups of countries with the highest number of published papers. The highest group comprises China, the United States' highest studies with 10 articles; followed by Spain and the United Kingdom; Australia and Indonesia. Other countries are illustrated in fig 3. The findings indicated that investment hybrid learning and practical courses as the general trends to provide a better digital education environment for student development in developed and developing countries.

Fig. 4. Country and affiliation field base Publication

Fig. 4 shows the Country and affiliation field base Publication, the most affiliated organization were in China, the United States', Spain, and the United Kingdom. Other countries are illustrated in fig 3. The findings indicated that investment hybrid learning and practical courses as the general trends to provide a better digital education environment for student development in developed and developing countries.

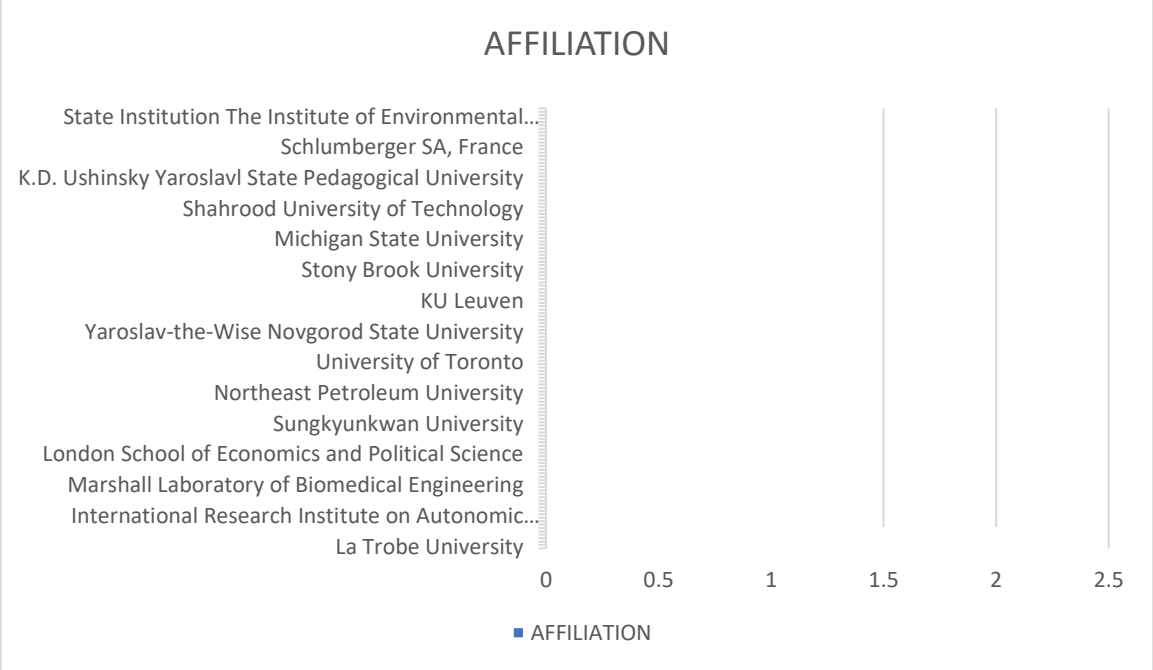

Fig. 5. Distribution based on the affiliation

Fig. 5 shows the Distribution based on the affiliation, the most affiliated organization were La Trobe University, Jilin University, Monash University, Flinders University Huazhong University of Science and Technology, Macau University of Science and Technology. The findings indicated that investment hybrid learning and practical courses as the general trends to provide a better digital education environment for student development in developed and developing countries.

Discussion

The Hybrid Learning Environment and Students' Engagements

Earlier studies that focus on learners' engagement in hybrid settings are scarce (Miller et al. 2021); however, existing studies are coherent in that they all are reporting that even though hybrid learning offers many advantages, among them the flexibility, this brings numerous challenges that are both technological and pedagogical in nature. A primary pedagogical challenge that has been reported in earlier literature is the fact that remote and on-site learners experience the class difference in the hybrid synchronous environment (Zydney et al., 2019; Beatty, 2019); on the other hand, Research & Development experts aims for implementing and designing both educational strategies along with the technological systems which offer similar educational experience among learners (Butz et al., 2016; Butz and Stupnisky, 2017). Earlier investigations demonstrate that remote students have a considerable sense of distance between their educator and their face-to-face colleagues (Ramsey et al., 2016). Qualitative research that has been conducted by Olt (2018) has

concluded that remote participant experience can be understood and interpreted through the concept of 'ambiguity' about group membership, technology features, and location. Weitze et al (2013) study claimed that remote learners reported that it is challenging to alert the instructor they wish to respond to a question, that makes them might cause a feeling of being uninvolved and frustrated. Thus, in this study, we believe that it is essential to consider the involvement factor when designing hybrid classes and be aware that distant students must feel more involved. Remote and online educational settings have been particularly challenging for university learners, especially practical-based subjects. Learners in the practical-based subject require a level of direct mentoring, social interaction, and tactile-education capabilities that can be hard to replicate in online settings. Learners in remote classes are also less able to focus for long periods on Practical-based subjects. Practical-based subject students need to incorporate various types of knowledge, for instance, scientific and practical knowledge. Thus, hybrid learning environments fill this gap by allowing participants to adapt their own pace and time to suit their needs. There is no proposed framework in hybrid learning for practical-based subjects in higher education institutions in Malaysia. Accordingly, the current study focuses on formulating the hybrid learning concept for learning the practical-based subjects in Malaysian HiED., in addition to developing the hybrid learning framework for understanding the practical-based issues in Malaysian HiED.

Hybrid Learning Environment Design

As highlighted earlier, student engagement and learning experience are mainly affected by contextual deviation. Earlier studies have proven that environmental design is essential in Hybrid learning, and the instruments provided play a crucial role in the learning experience (Carvalho et al., 2020). The activity-centered analysis and design (ACAD) framework has been utilized in previous research Carvalho and Goodyear 2014; Goodyear et al., 2021). The ACAD framework recognizes social, epistemic, and physical situatedness. The design set contains specific artifacts, tools, and learning spaces to support teaching and learning. Moreover, the epistemic design involves activities or tasks learners are requested to do. Finally, the social structure relates to how learners are grouped or constructed communities or networks. ACAD was previously used for analyzing emergent education activity in hybrid learning environments. The current study will characterize the design of the synchronous hybrid learning environment, thus analyzing student outcomes results for the proposed hybrid setting.

Earlier studies in the context of hybrid learning emphasize that the loss of audible and visual cues that are usually observable for Face-to-Face learners affects their educational experience (Weitze et al., 2013). To overcome this loss and soften the perceived distancing impacts, it was claimed that instructors must often break for questions during the lecture and must be alert to learner reactions (Alsharif et al., 2021g, Alsharif et al., 2021a; Heilporn et al., 2021; McGovern and Barnes 2009). Additionally, learners attending online must perceive that same sound quality as face-to-face students as the sound component has proved to be crucial for success in hybrid learning settings (Bower et al., 2015; Cunningham, 2014). Moreover, Irvine et al. (2013) discovered that the synchronized hybrid instruments that simulate face-to-face delivery could assist learners in retaining a closer relationship with their classmates. Thus, in this study, we believe good video quality audio quality and the optimal educator framing are crucial elements to be considered in the educational environment design.

Conclusion

hybrid learning and practical courses is widely viewed as a new trend approach that combines the benefits afforded by online learning and face-to-face components and optimising in merits and benefits for stakeholders. Many scholars as "the new normal". Although this model has received much benefits feedback, such as flexible, freedom knowledgeable access, pedagogical enrichens, cost-effectiveness, etc., this complex instruction raised concerns over the years. Several studies have highlighted the overall challenges of hybrid learning. Thus, a systematic review of the literature was set to draw strategies for successful blended learning to support stakeholders. Using the PRISMA statement and bibliometric analysis, the study further discusses three main methods for successful blended learning: student engagement, personalisation learning, and a framework for instructors in course management. While the theme of student engagement was analysed in cognitive and emotional engagement with various skills support in facilitator and indicator, personalisation learning was interested in discussing the self-directed study, online seeking, and technological skills in smart-based education. And a framework of pedagogy, management, assessment, technology, instructional design, disposition, and improvement has provided an overview for stakeholders using in their own goals when using hybrid learning and practical courses. The results are especially expected to be useful for preservice teachers in their teacher education course and stakeholders involved in hybrid learning and practical courses, such as students, trainees, and administrators.

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