The Recent Trends on Physical Education Subject with the Issues and Strategies

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Abstract

The digital transformation of educational institutions at all levels has enabled the incorporation of a new teaching–learning ecosystem known as online learning. With the beginning of pandemic disease, especially COVID-19, online learning has risen and accelerated. Physical Education is one of the subjects that should be highlighted in order for students to improve their physical health and academic performance. As a result, from 2017 to 2021, this article will review the current research on issues and strategies in Physical Education Subjects. A list of keywords linked to the scope of this research (physical education with issues and strategies) was identified. In the second stage, the keyword "studies" was searched in WoS and Scopus, yielding 37 articles. Five final topics were determined following a thematic review: challenges to educators, strategies to overcome challenges, communication approach guidance for educator's issues in remote teaching. The findings indicate a new research framework trends in physical education, including issues and strategies. This research will be beneficial to future physical education researchers studying in a new teaching–learning ecosystem.

Keywords: physical education, PE issues and strategies, online learning, thematic analysis

1.0 Introduction

The advantages of physical education include improved student physical health as well as improved academic achievement in the classroom (de Greeff et al. 2018). Running laps around a track or kicking a ball are only a small part of physical education. It instils important life skills in children while also improving their health and well-being. Obesity remains to increase throughout the world as more individuals choose sedentary lifestyles (Norhasniza et al. 2021). Promoting a favourable attitude toward exercise from an early age can assist them in being healthy as they grow.

Many schools have reduced their physical education programmes in recent years, putting a larger focus on academics in order to further equip students for college and the career (Harris 2019). Students who received frequent Physical Education in school will be more than double as prone to be physically active compared to those who did not. Physical Education educators who are well-versed in child development guarantee that the curriculum incorporates age-appropriate activities that support the development of bodies and brains, which are highly inclined to benefit youngsters who receive frequent Physical Education sessions at school.

They will tailor courses to the requirements of different classes as well as make sure that children are not overwhelmed by advanced skills or expectations. Simultaneously, they recognise when kids are prepared to be pushed. Physical education enhances children' motor skills, muscular strength, and bone density, which increases their likelihood of engaging in healthful exercise outside of school (Strotmeyer et al. 2021). Additionally, it also teaches youngsters regarding the benefits of exercise as well as how good they may experience when they do it. Participating in Physical Education encourages youngsters to develop a regular habit exercise, which serves to avoid obesity and lowers the chance of chronic diseases, for instance, diabetes and heart disease (Elmagd 2020). It also helps to keep their brain and mental health in good condition. Exercise becomes engrained in children for the remainder of their lives when it is instilled as a 'normal' activity in them at an early age.

Physical education encourages students to develop their talents since mastering the principles of one sport makes mastering the rules of another simpler. Given the time children spend in school, it is the best place for empowering them to be responsible for their health. Physical education sometimes has the unintended consequence of raising youngsters' consciousness of their food intake. They recognise the need for a well-balanced diet and the realisation that junk foods are never the best energy source for their sport. They frequently express a desire in learning further regarding their bodies, which teaches them how to manage themselves and everyone else. Furthermore, a study reveals that students who are less active are quite likely to have sleep problems. Moderate exercise reduces stress and anxiety while also supporting consistent sleep patterns, which leads to general well-being, immune system function, and better mental health (de Greeff et al. 2018).

However, with the digital revolution of education systems at all levels, Physical Education has included a new learning ecosystem known as online learning (Alruwaili 2020). With the beginning of pandemic disease, particularly COVID-19, online learning has risen and sped up. To guarantee sustained benefit, physical education may be maintained even if new standards are implemented. This review study explored current developments in Physical Education, particularly online, as well as what the future may hold. Throughout 2017 until 2021, this article will determine major pieces of literature that discuss the underlying questions:

RQ 1. What are the current trends on Physical Education Subjects especially during online class in literature from year 2017 to 2021?

RQ 2. How to formulate new framework for Physical Education Subjects especially during online class?

2.0 Methodology

As this study approach uses the thematic analysis technique in the literature review, the phrase thematic review utilising ATLAS.ti 8 as the tool established by Zairul, (2021) was employed. Thematic analysis, according to Kiger & Varpio (2020), is the act of detecting patterns and developing themes via extensive reading on the topic. To comprehend the trend

of *Physical Education Subjects*, the subsequent phase is to determine the pattern and develop themes. The study's key goals are to assess and define the outcomes in order to make suggestions for additional studies in both disciplines (physical education OR PE). The literature was chosen based on the following criteria: 1) be published between 2017 and 2021; and 2) include the keywords student, instructor, teacher, lecturer, or tutor, and physical, hands-on, or practical.

Review papers were omitted from this review owing to a conflict with the paper's goal. The research databases of Scopus from Elsevier and Web Science from Clarivate Analytics were utilised as sources of information. Consequently, Carvalho et al. (2013) selected the Web of Science (WoS) since it would cover all listed publications having a calculated impact factor in the Journal Citation Report (JCR), and Scopus since it offers the greatest collection of peer-reviewed articles. Not reviews, but "types of documents," "article types," and "proceedings papers" were used in filtering the WoS. The following datasets comprised the analysis criteria: Title, Abstract, and Keywords. Student* or instructor or teacher or coach or lecturer or tutor or educator have been included as relevant keywords, as well as physical or hand or practical. Following that, all 49 publications were exported from Mendeley to ATLAS.ti 8 for current trends analysis in the literature. Various bibliometric data have been derived from the document list, including the article title, author, year, author's country, subject area, keyword utilised, as well as periodical. The findings are split into two categories: quantitative and qualitative. Moreover, the quantitative section will describe the data gathered from numerical points of view, whereas the qualitative section will construct themes based on the chosen publications and devise a conceptual framework for physical education subject integration in the modern generation. The exploratory style of investigation towards developing a favourable learning environment for Physical Education Subject, predominance quantitative as well as mathematical experiments, as well as data collection procedures, experiments, and mathematical model assessments, are covered. The pattern and trends of the updated topics may be viewed in the emphasis of literature during the previous five years.

Fig. 1. Metadata produced in ATLAS.ti 8.

3.0 Result

The outcomes are separated into two categories: quantitative and qualitative. According to the analysis of 49 primary documents, the quantitative results yielded the word cloud as given below. PE is one of the largest terms in the word cloud, indicating that it often appears in publications. As stated at the outset, the emphasis of this publication is on the 'online learning' environment, which is a novel teaching-learning ecosystem. Figures 1, 2, as well as 3, are illustrations of this.
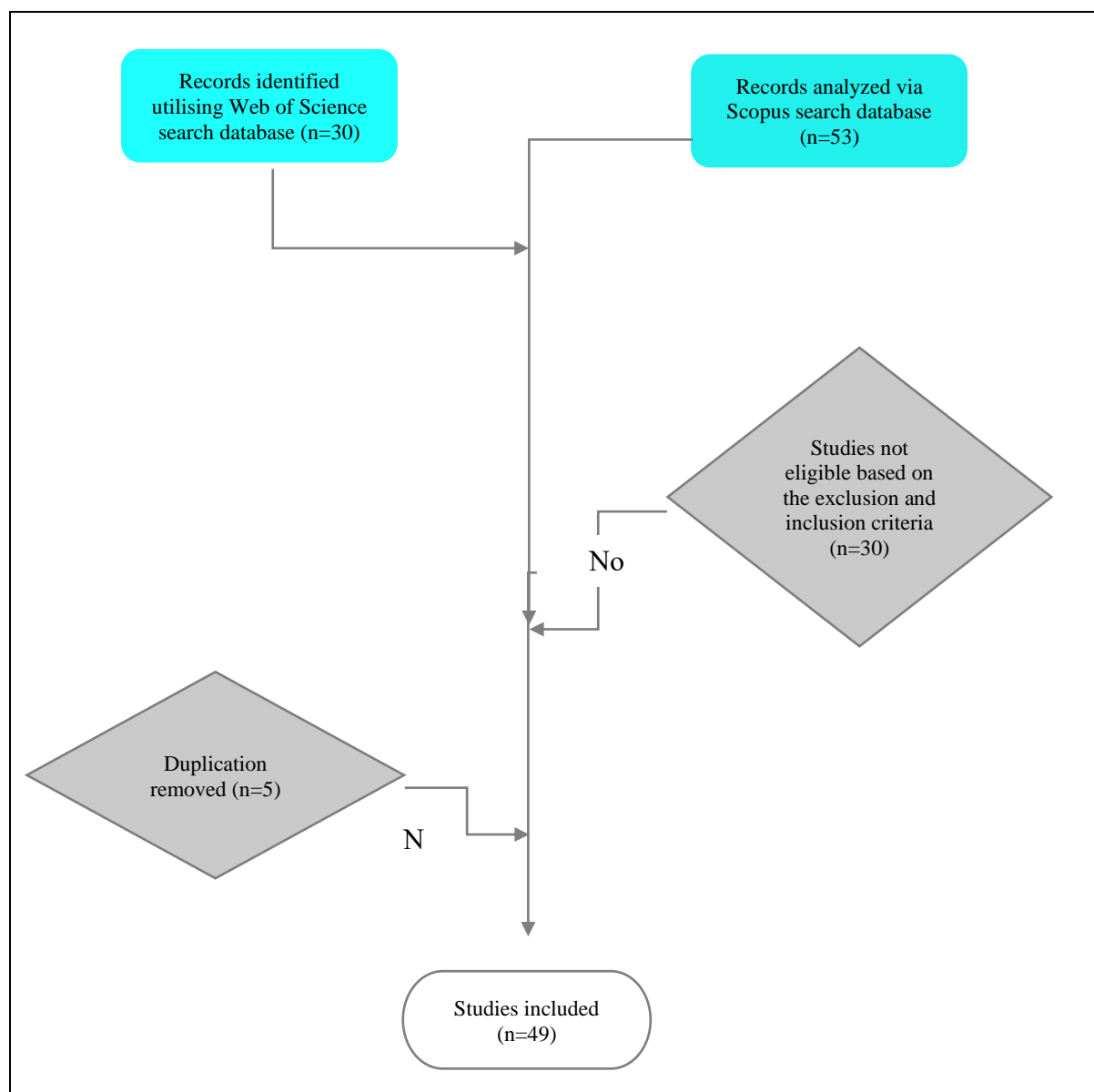
Fig. 2. Inclusion and exclusion criteria in the thematic review. Adopted from (Zairul 2021b)

Notwithstanding the emerging trend, no review articles on PE in online learning frameworks for the subsequent new teaching-learning environment have been published. A study protocol was created, with interpretation, preparation, and data collection specified in a logical order derived from the past study. PE was referenced 1469 times in the word cloud, followed by

hands-on at 1255 times. Meanwhile, teacher and student were referenced 693 and 622 times, accordingly. Over time, there has been a rise in the number of articles. From only three articles in 2017, one item in each of 2018 and 2019, the number of articles published each year climbed to 15 in 2020 and 29 in 2021. The possible explanation why the literature for this research begins in 2017 is to concentrate on the most recent articles from the previous five years as well as to observe trends for the year 2021. The writers would prefer to highlight that while this study centred on search strings, indexes, and exclusion criteria, it does not emerge to be restricted or thorough. The writers, on the other hand, argue that it accurately represents the literature on the research question (refer Table 1, Fig. 3 & Fig. 4).

Table 1 Search strings from WOS and Scopus

SCOPUS	TITLE-ABS-KEY (("student*" OR "instructor" OR "teacher" OR "coach" OR "lecturer" OR "tutor" OR "educat*") AND ("physical" OR "hand*" OR "practical") AND ("issue*" OR "strategy"))	588 results
	TITLE-ABS-KEY (("student*" OR "instructor" OR "teacher" OR "coach" OR "lecturer" OR "tutor" OR "educat*") AND ("physical" OR "hand*" OR "practical") AND ("issue*" OR "strategy")) AND (LIMIT-TO (PUBSTAGE , "final")) AND (LIMIT-TO (PUBYEAR , 2021) OR LIMIT-TO (PUBYEAR , 2020) OR LIMIT-TO (PUBYEAR , 2019) OR LIMIT-TO (PUBYEAR , 2018) OR LIMIT-TO (PUBYEAR , 2017))	152 results
	TITLE-ABS-KEY (("student*" OR "instructor" OR "teacher" OR "coach" OR "lecturer" OR "tutor" OR "educat*") AND ("physical" OR "hand*" OR "practical") AND ("issue*" OR "strategy")) AND (LIMIT-TO (PUBSTAGE , "final")) AND (LIMIT-TO (PUBYEAR , 2021) OR LIMIT-TO (PUBYEAR , 2020) OR LIMIT-TO (PUBYEAR , 2019) OR LIMIT-TO (PUBYEAR , 2018) OR LIMIT-TO (PUBYEAR , 2017) AND (LIMIT-TO (DOCTYPE , "ar")) AND (LIMIT-TO (LANGUAGE , "English"))	53 results
WOS	(("student*" OR "instructor" OR "teacher" OR "coach" OR "lecturer" OR "tutor" OR "educator") AND("physical" OR "hand*" OR "practical") AND ("issue" OR "strategy") Timespan: All years. Indexes: SCI-EXPANDED, SSCI, A&HCI, CPCI-S, CPCI-SSH, BKCI-S, BKCI-SSH, ESCI.	505 results
	(("student*" OR "instructor" OR "teacher" OR "coach" OR "lecturer" OR "tutor" OR "educator") AND("physical" OR "hand*" OR "practical") AND ("issue" OR "strategy") Refined by: PUBLICATION YEARS: (2021 OR 2020 OR 2019 OR	203 articles

2018 OR 2017)

Timespan: All years. Indexes: SCI-EXPANDED, SSCI, A&HCI, CPCI-S, CPCI-SSH, BKCI-S, BKCI-SSH, ESCI.

((("student*" OR "instructor" OR "teacher" OR "coach" OR "lecturer" OR "tutor" OR "educator") AND("physical" OR "hand*" OR "practical") AND ("issue" OR "strategy")

Refined by: PUBLICATION YEARS: (2021 OR 2020 OR 2019 OR 2018 OR 2017) AND DOCUMENT TYPES: (ARTICLE) AND PUBLICATION YEARS: (2021 OR 2020 OR 2019 OR 2018 OR 2017) AND WEB OF SCIENCE CATEGORIES: (EDUCATION EDUCATIONAL RESEARCH)

30 articles

Timespan: All years. Indexes: SCI-EXPANDED, SSCI, A&HCI, CPCI-S, CPCI-SSH, BKCI-S, BKCI-SSH, ESCI.

Fig. 3. A word cloud based on the words' frequency in 49 documents

Fig. 4. Articles no. based on to publication year

3.1. Quantitative results

According to our findings, physical education and online learning choose a wide range of periodicals. As previously stated, provided that the sole term utilised in this search is PE, the number of publications generated could be in the thousands. The outcomes, though, indicate a large decline and are highly focused when filtering the search strings on physical, hand, or practical, indicating that the issue is still fresh and that further research may be executed (refer Table 2).

Table 2 Articles no. based on the periodical.

Journal Articles Names	2021	2020	2019	2018	2017	Total
BioMed Research International	1	-	-	-	-	1
BMC Medical Education	1	-	-	-	-	1
Children and Youth Services Review	1	-	-	-	-	1
Early Childhood Education Journal	-	1	-	-	-	1
Educational anf Psychological Measurement	-	2	-	-	-	2
Education Sciences	2	-	-	-	-	2
Future Internet	-	1	-	-	-	1
Hno	-	1	-	-	-	1
Innovations in Education and Teaching International	1	-	-	-	-	1
Indian Journal of Surgery	1	-	-	-	-	1
Information and Learning Science	7	-	-	1	-	8
International Review of Social Sciences and Humanities	1	-	-	-	-	1

International Journal of Educational Management	-	1	-	-	-	1
International Journal of Environmental Research and Public Health	1	-	-	-	-	1
International Journal of Higher Education	1	-	-	-	-	1
International Journal of Language Education		-	-	-	1	1
International Transaction Journal of Engineering, Management, & Applied Sciences & Technologies International	1	-	-	-	-	1
International Journal of Academic Research in Progressive Education and Development	1	-	-	-	-	1
International Journal of Innovation, Creativity and Change	-	1	-	-	-	1
Journal of Physical Education, Recreation & Dance	-	1	-	-	-	1
Journal of Applied Research in Higher Education	-	1	-	-	-	1
Journal of Teacher Education	1	-	-	-	-	1
Journal of Engineering Education Transformations	-	2	-	-	-	2
Journal of Further and Higher Education	1	-	-	-	-	1
Journal of Information Technology Education: Research	1	-	-	-	-	1
International Journal of Environmental Research and Public Health	1	-	-	-	-	1
Journal Physical Education Matters	2	-	-	-	1	3
Journal of Social Science Education	1	-	-	-	-	1
Modeling, Identification and Control	1	-	-	-	-	1
Open Praxis	1	-	-	-	-	1
Physical Education and Sport Pedagogy	1	-	1	-	-	2
Sport, Education and Society	1	-	-	-	-	1
Turkish Journal of Sport and Exercise	-	1	-	-	-	1
Telemedicine and e-Health	1	-	-	-	-	1
XLinguae	-	1	-	-	-	1

The trends and patterns found in the selected papers are summarised in Table 3. The original code included fifteen qualities; however, upon merging as well as renaming them, the coding was pared down to just five themes. Note that the qualitative section will go through the following subjects.

Table 3 Authors based on the themes

	Challenges to	Strategies to	Communication	Guidance for	Issues in remote	Total

	educators	overcome challenges	approach	educators	teaching
Hidayu et al. 2021 & 2019	1		1		2
Franco et al. 2020		1			1
Schlenz et al. 2020		1			1
Pal & Vanijja 2020		1			1
Martínez-Bello et al. 2021	1				1
Hasan & Bao 2020		1			2
Ozadowicz 2020		1			2
Pokrovskaia et al. 2021	2				1
van Bonn et al. 2021	1				1
Varga-Atkins et al. 2017				1	1
Srivastava et al. 2020		1			1
Fulton 2021, 2020 & 2018	6	1	1		8
Bolarinwa 2020		1			1
Radu et al. 2020		1			1
Miyahara 2020		1			1
Shahrill et al. 2021	1				1
Efiloğlu Kurt & Tingöy 2017				1	1
Alruwaili 2020		1			1
Esposito et al. 2021	1				1
Hasim et al. 2020		1			1
Pill & SueSee 2017, 2021	1			1	1
Karingada & Sony 2021	1				1
Lapitan et al.	1				1

2021		
Deepa et al. 2021	2	2
Schuck & Lambert 2021	1	1
Wagiran et al. 2020	1	1
Jeong & So 2020	1	1
Harvey & Pill 2021	3	3
Kao et al. 2021		1
Kyrkjebø 2020	1	1
Hussein et al. 2020	1	1
Porsanger 2021	1	2
Lindsey 2020	1	1
Doggun 2021		1
Zhou et al. 2020	1	1
Aleynikova 2021	1	1

3.2 Qualitative results

This article will explore in full the themes that were obtained to address the study question in the qualitative portion. Five themes were developed in response to the article's directives and topic matter. The following are the themes identified from the review of the chosen publications (refer Fig. 5):
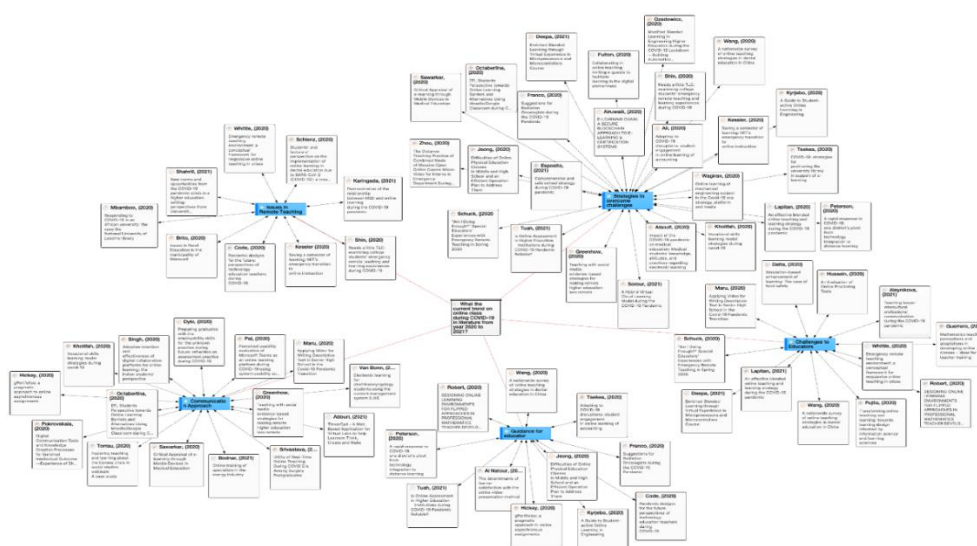

Fig. 5. The overall thematic review formulation

challenges to educators, strategies to overcome challenges, communication approach, guidance for educators and issues in remote teaching. The key themes are not self-contained, but overlap throughout the pieces included in this review. In addition, it is not unusual for certain publications to incorporate a wide range of topics, and conversely. The following section will delve deeper into each subject in purpose of answering research question no. 1. (What are the current trends in Physical Education in literature from 2017 to 2021, especially during online classes?) and afterwards the following part on the framework's formulation Fig. 11.

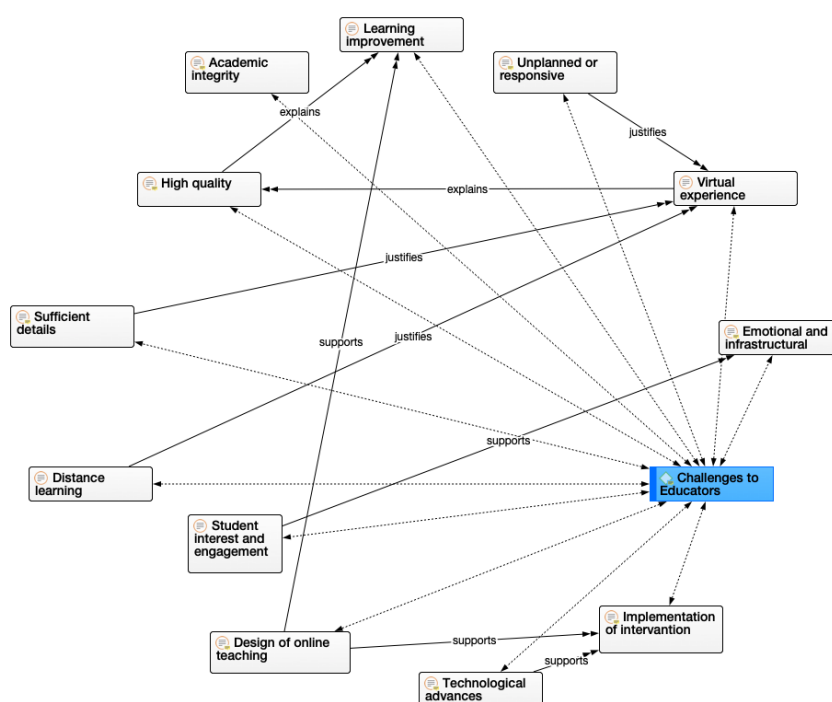### 3.2.1 Challenges to educators theme

Fig. 6. Network on the Challenges to educators theme

Several characteristics were prompted by the network of frameworks on educational difficulties. Teachers' lack of technological progress is one cause. The key to an education's efficacy, as per (Code et al. 2020), is that it is presented by a teacher, as the instructor holds a close engagement with the students. The instructor should therefore ensure that the learning process runs seamlessly as part of their obligations and professionalism being a teacher. Nevertheless, in these kinds of conditions, carrying out teaching and learning activities gets extremely challenging. As a consequence, teachers must adopt online learning activities, hence why educational researchers must assess how online learning is achieved in the current design, particularly by teachers. Additionally, teachers who are used to planning, implementing, and evaluating learning in a face-to-face system are compelled to do so in the online system.

In a nutshell, teachers define the online learning concept as learning that occurs via the use of internet facilities and other technologies or learning that occurs online. This, however, does not demonstrate how online learning is taking place in the field, particularly in primary schools. When a teacher is knowledgeable with technology, it aids in the implementation of learning, since technology may act as a conduit for teaching staff to communicate information to students.

From this theme (refer Fig. 6), it can thus be inferred that there are many more challenges for educators in the application to create a new environment of teaching of Physical Education Subject, for instance, better quality teaching module from experiences of virtual with sufficient details and distance learning points. Emotional and infrastructure elements who important to ensure student interest and engagement increasing and will improve the learning. Teacher also need to responsive, integrity and have knowledge in technology (Guerrero-Ortiz & Huincahue 2020).

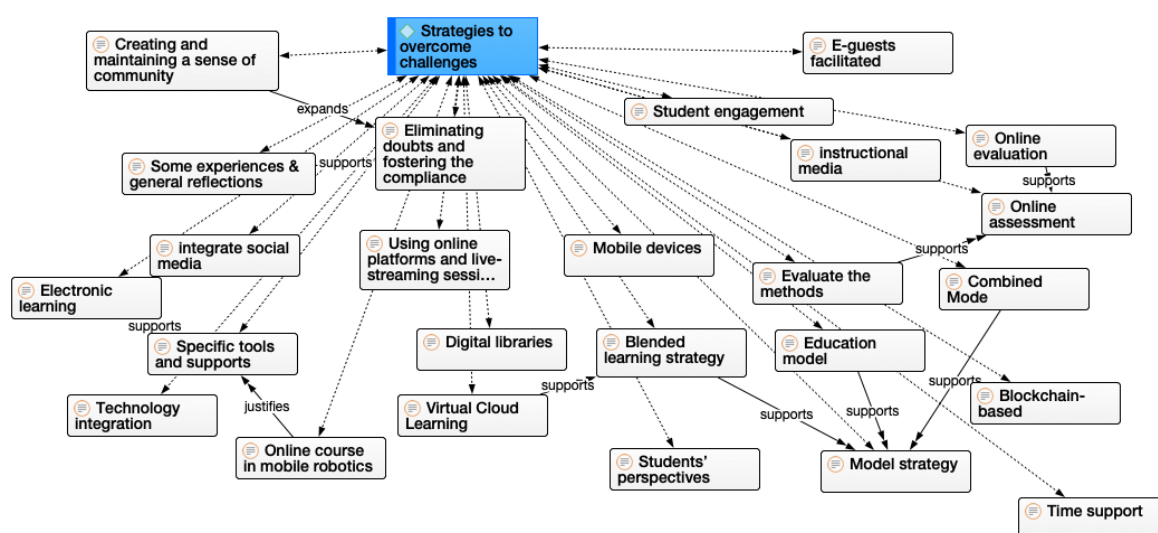### 3.2.2 Strategies to overcome challenges

Fig. 7. Strategies to overcome challenges theme

Schools, as the primary education stakeholders, must play a critical role in overcoming students' difficulties with e-learning. Advanced teaching experience is necessary for developing the abilities necessary for successful teaching. This widespread (refer Fig. 7) perception contradicts instructors' perspectives on hurdles to e-learning integration, since teachers with varying degrees of teaching experience showed similar perspectives on the difficulties.. Teacher to maintain and improve knowledge in online learning also to prepare suitable teaching manual is frequent words that state in all articles to overcome challenges. Example in Jack et al. (2021) Stated that live streaming surgery with real-time communication between the students and surgeon is performed in medical classes with a practical component to guarantee the continual instruction during the operation. Technology has been proposed to sustain training in the event of a COVID-19 pandemic. Even prior to

these trying times, technology advancements were examined as teaching aids. In Japan, medical students could witness and engage in endoscopic urologic surgery through a two-way audio connection (Nakayama et al. 2016). The changes in medical education can implement in physical education and include virtual cloud learning, online course in mobile robotic, technology integration, digital libraries, e-guest facilitated and integrated social media.

3.2.3 Communication approach

The most critical aspect of learning and teaching is communication between the teacher and students. The teachers' ability, their ingenuity, and their tenacity in the face of adversity to help the students in their classrooms. The most significant teaching obstacles are motivating and keeping students' attention; in a way to engage, explain ambiguities, and resolve difficulties, it is vital to generate information while simultaneously providing precise instructions to students through synchronous interaction (video and chat conversation) (Guerrero-Ortiz & Huincahue 2020). The main advantage of technology is the capacity to collaborate, work, and share in a group context, as collaboration among the students is almost compulsory. Technologies can aid in the reinforcement of a feeling of society as well as the creation of novel networks of connections and meanings. Hence, they must make these differences (culture, language, and disability) a source of richness instead of separation. Formats or technologies have no bearing on the nature of a connection, and digital is not an option for actual contact. The connection is the product of instructional intentionality, and one method to assure it is via the use of technology. Communication and evaluation strategies for digital education must be developed. The absence of response from students has also been highlighted by (Mukhtar et al. 2020). According to that study, the experts who took part in the conference recommended that instructors engage with students consistently and often to avoid students feeling confused and alienated. They could perhaps keep in touch with students on a regular basis, for instance, by establishing a frequently asked questions (FAQ) area, sending weekly emails, as well as building a community group in which all students may profit from the responses to fellow students' questions. Moreover, the specialists stressed the need to develop a community of learners and instructors via more "human" online connection. Networks in fig. 8 shown all elements in communication approach can be done in physical education.
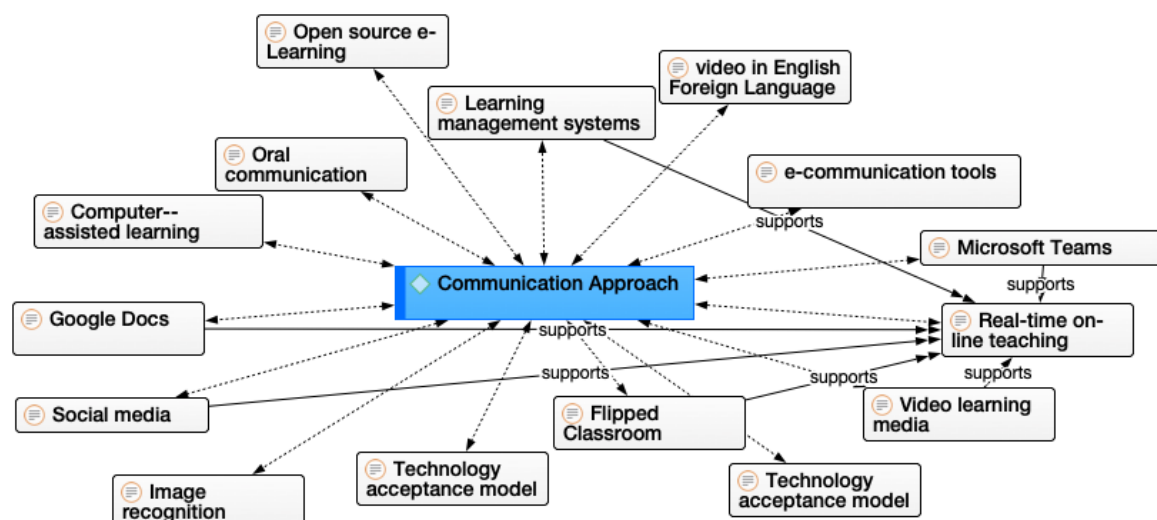
Fig. 8. Network on the Communication approach theme

3.2.4 Guidance for educators

Online teacher communities, readiness among students and teachers, effective teaching practices, online engagement for educator, group dynamics, digital educators, online courses, e-learning educational programme, cultivate teaching expertise, technology education and teachers' practical practises is among the component in themes under guidance for educator from thematic analysis. Researcher (Burson et al. 2021) discussed on Physical education policies should serve as a guide and a check to ensure the development of high-quality programmes that promote physical literacy. Particularly in online learning, specific and targeted policies are required to establish and teach equity-centered and culturally responsive physical education (refer Fig. 9).
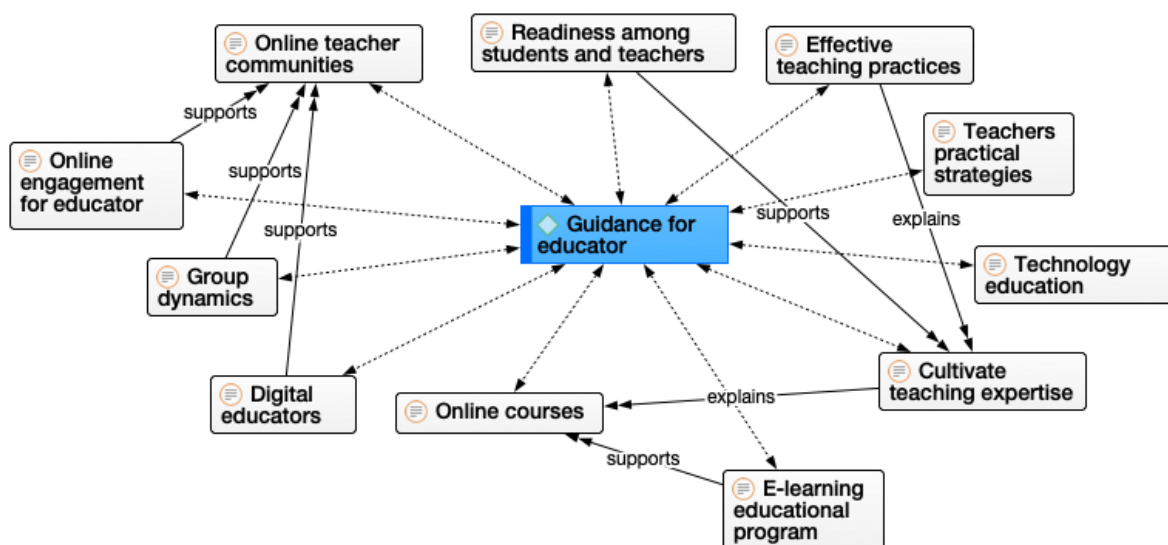

Fig. 9. Network on the Guidance for educators theme.

3.2.5 Issues in remote teaching

This outbreak presents both a challenge and an opportunity for crisis remote teaching to identify developing difficulties throughout catastrophes and establish a unified online education strategy for upcoming crises or environmental disasters. This situation necessitates a greater focus on the correct integration of technology and learning, especially the crucial role of teachers and the students' needs. In ensuring sustainable educational quality, it is necessary to assess the difficulties associated with crisis remote teaching and offer novel frameworks for action to address them. These networks are aimed at stakeholders, decision-makers, as well as government. According to the findings of this research, an accessible network design is necessary. Teachers, students, and parents should always have accessibility to a level of connection that enables them to take classes remotely even while other members of the household are engaged in other online activities. Apart from that, additional cheap gadgets must be offered and organised effectively, such as tablets or linked PCs, and governments should provide incentives for families to purchase them. All students must be equipped with the necessary equipment to attend a lesson remotely in the most convenient manner. Furthermore, in encouraging individualised, inclusive, and participative online learning pathways, the evolving societal issues that facilitate the shifting contexts related to the employment of intelligent technology for distant education, for instance, artificial intelligence, can be highlighted. As long as it is related to teachers' pedagogical skills, it might broaden options as well as offer worth to online learning. Additional inclusive tools, platforms, and devices that comply with various web content accessibility guidelines (for example, WCAG 2.0) must be produced to create digital learning materials available to a larger range of disabled individuals (Burgos et al., 2021). Alternatively, this theme shown many more issues in issues in remote teaching. See fig. 10.
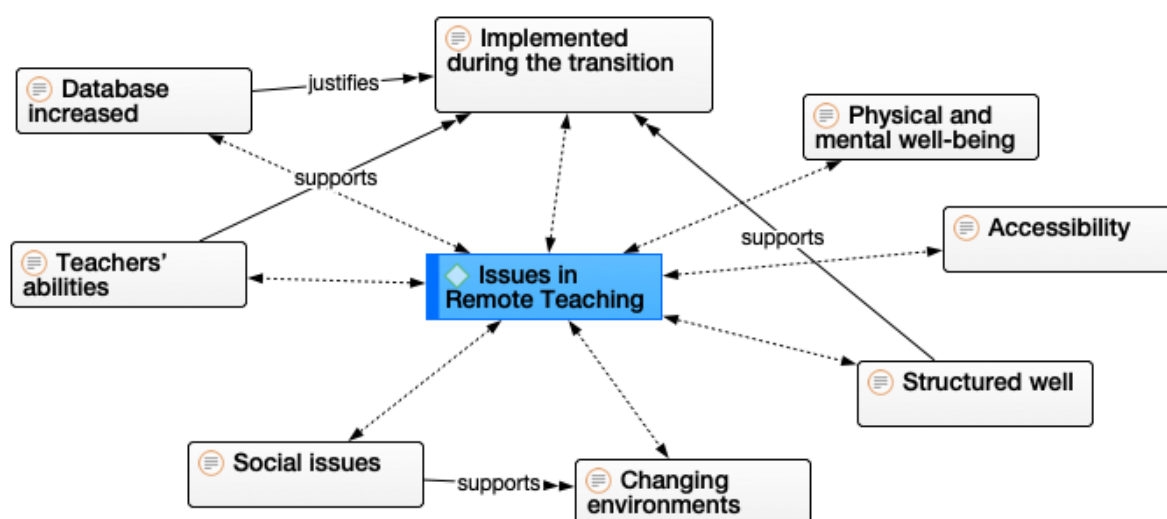

Fig. 10. Network on the Issues in remote teaching theme.

4.0 A proposed conceptual framework for Physical Education Online Learning

The theme evaluation resulted in the proposal of additional research to further the field's knowledge base. These propositions are established via reading and analysing research and

characterising them under the conceptual framework shown in Fig 11. Fig. 11 outlines 49 research paths for implementing circular practises in the construction sector, with the goal of identifying new research opportunities, contributing to policymakers' strategic success, and promoting an approach to business realities. Future studies may be classified into the following categories based on the current state of research and the proposed structure:

 1) Physical Education studies - During online classes, educators should focus on an alternate module, manual, or handbook.

2) Framework- In the event of an outbreak, a revised framework for government policy on handling Physical Education classes has been developed.
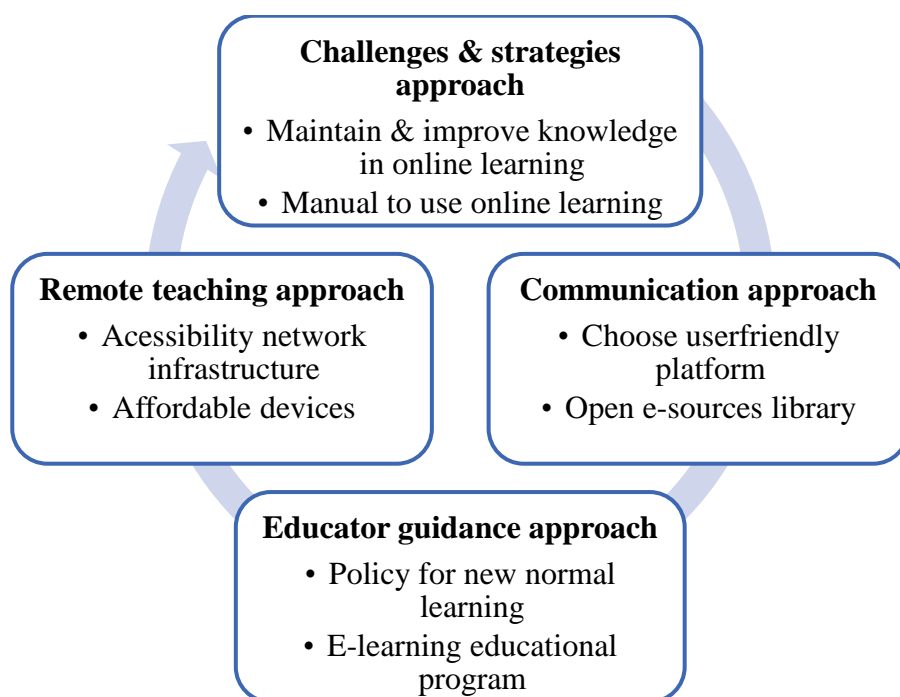

Fig. 11. A conceptual framework for the current debate on Physical Education as a method for Online Learning

5.0 Conclusion

Two methods were used in this study, based on the 49 articles reviewed in this work. The first section is quantitative, highlighting data derived numerically via ATLAS. Despite increased attention in the field, there is no review article in the literature that connects Physical Education with concepts of online learning. Additionally, there is a need to adapt the principles discussed in Physical Education literature to the teacher and student perspectives, as well as to use more systematic terminology. The open difficulties arising from this physical education may be critical in strengthening the capacity for successful online learning and in establishing educational frameworks to address concerns. Policymakers, businesses, families, students, schools, and experts should collaborate to create open and smart learning environments, instructional materials, and technology that will allow education to remain social, inclusive, and accessible. The goal of this research was to collect

views, information, as well as experiences in identifying worldwide obstacles and a framework for initiatives to tackle these obstacles discussed to numerous actors (for instance, teachers, researchers, and policymakers) in overcoming issues that emerged throughout the COVID-19 pandemic. We plan to enhance it in the future by determining empirical and theoretical support for the set of activities proposed here. In addition, more research will be conducted to examine students' perspectives, experiences, attitudes, and emotions, as well as contrast them across countries, in an attempt to grant a more finished description of the phenomenon and extensive conclusions.

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