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Developing "synchronous model" in English teaching material for public health students: a systematic literature review

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Abstract

The Synchronous Model has become an important part of the development of learning in the 4.0 era. Online learning for teaching English has become a trend that continues to grow and is developed based on the development of Special English (ESP). The Synchronous Model is a media model developed by researchers as the website Synchronous which has been popular in Indonesia and is being developed. However, this review of the Synchronous Model learning in ESP is still relatively rarely developed in the post-pandemic period, preparing rich and reliable Synchronous technology-based learning that is very meaningful and reliable in the future. This technology enhances the scientific nature of English language education in public health at colleges and at the university level. So, this review systematically identifies trends in Synchronous-based learning in ESP for Public Health courses. Data tracking in this study was conducted using Harzing's Publish or Perish (PoP) application with three databases used, including Google Scholar (GS), Crossref, and Scopus. From the results of the data screening, 6 articles were found that met the inclusion and exclusion criteria. The conclusion obtained from this systematic search is that the Synchronous Model is the most widely used model in the process of learning English specifically. Second, the Synchronous Model and language are more widely used in ESP learning for public health. Third, the Synchronous Model in ESP dominates the learning process after the Covid-19 pandemic. These three findings imply that there are still gaps in the Synchronous Model and ESP research. In general, this review is very valuable for practitioners to find out which Synchronous Model is ready to be used and developed and can identify gaps for research in Public Health (ESP) English language learning, this SLR is very closely integrated into technology-based learning with English language education in public health at the college and university level.

Keywords: Synchronous Model, ESP For Public Health, Teaching English Materials.

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Introduction

The majority of academic institutions in Indonesia have turned to online learning as a means of overcoming this obstacle in preparation for the possibility that face-to-face interactions may be discontinued. The term "online learning" pertains to the modern approach to providing educational content, which makes use of digital mediums like the Internet and computers to facilitate the dissemination of educational content (Carliner 2004; Mauro et al. 2019). In recent years, advances in technology have made it possible for educational institutions to use forward-thinking teaching methods, including either the total or partial utilization of online learning. However, because of the emergency situation produced by Covid-19, colleges have been obliged to adopt online learning on a vast scale in order to keep classes going. Synchronous learning, asynchronous learning, and hybrid learning are the three distinct types of online learning environments that can be distinguished from one another (Müller & Mildenberger 2021; Perveen

2016). Synchronous learning occurs when students interact with one another in real time while asynchronous learning occurs when students interact with one another at different times.

Numerous educational establishments have implemented a variety of online instructional models. Despite this, there are still very few research that investigate the use of synchronous online conversation for the purpose of instructing English in a higher education setting. The purpose of this research was to investigate the obstacles and perspectives that synchronous online discussions present for university students studying English as a foreign language (EFL). The shift from traditional face-to-face engagement to more recent forms of learning, such as online interaction, requires English lecturers to adjust their teaching methods accordingly. They are tasked with identifying suitable instructional strategies that are compatible with the online learning mode. Discussions held via the internet are one of the most widely used approaches. Online conversation has a few advantages, including a real-life audience, up-to-date information, and a greater concentration on the topic at hand Sutherland-Smith (Evans et al. 2020; Rinekso & Muslim 2020).

The most effective method for teaching English is to do so through the use of internet discussions. Online conversations provide a great deal of value to their participants. They are (1) exemplifying knowledge of key notions, (2) intriguing higher order critical thinking skills, (3) empowering peer interaction and team work, (4) working to promote thoughtful reflection, (5) accomplishing social interaction and community engagement, and (6) incentivising student-generated discussion topics. These are the six goals that they are working toward (Raghupathi, et al. 2020). Because of these benefits, students' English proficiency as well as their cognitive and social abilities will improve. In a similar vein, participation in online forums may improve students' academic achievement. Sutherland-Smith (Rinekso & Muslim 2020), since participants in online conversations are more likely to be better prepared than those who participate in face-to-face classroom discussions regarding the selection of relevant terminology and the completion of reading assignments.

The use of teaching materials is an essential part of imparting linguistic knowledge to students because they provide a channel through which instructors can convey information about the curriculum to their charges. These instructional materials ought to be thoughtfully crafted so as to fulfil the prerequisites for a productive teaching and learning procedure, and they ought to be predicated on an exhaustive investigation of the requirements posed by the students being taught (Bruce 2011). Contextualizing such resources increases the likelihood that they will lead to positive interactions in the classroom and encourages students to be active participants in actively exercising their language skills (Bucholtz & Hall 2005).. In addition to this, educational materials must to take into account both the linguistic form and its function (Hutchinson & Waters 1987; Tomlinson 2011). In addition to this, the contextualization of instructional materials must be done in such a way as to take into consideration the procedures of material development study, which is referred to as English for Specific Purpose (ESP). Specific fields are either related to or specifically created for ESP. In relation to this, Kenny's reports indicate that ESP can be employed in specific educational scenarios, which is a distinct teaching style than that of General English (Isik-Tas & Kenny 2020; Kenny & Alvarez 2020). In addition, it is quite possible that it was developed with adult students in mind, be they enrolled in a tertiary level university or learning on the job in a professional setting, such as students of public health.

The teaching materials for Public Health Students should be well-designed to meet the students' needs. They should be planned and taught based on the real-world situations as well as endorse students to link between the knowledge they have possessed and the work they want to acquire after learning process in the class. Thus, there should be an appropriate model of developing teaching materials which can best meet the students' learning needs. In other words, students learning in professional work situations including for Public Health Students need to be provided with such a contextualized model which could help them to achieve the learning goal.(Johnson, et al. 2008; Mardiah 2020).

However, there have been very few models of material development which had been well-designed to meet the for Public Health Students. These existing models have not provided such a thorough analysis toward the students' needs (Paltridge & Starfield 2013). The needs analyses are crucial to set the learning goals which, in turn, can provide suitable materials, teaching method, and evaluation strategies. Additionally, they have not provided meaningful and real materials which are relevant to the students' life experiences. Tomlinson (Tomlinson 2011) argued that many students fail to understand why they should learn English which is irrelevant with their daily life and their future career, yet it is simply in curriculum. This is worsened by the fact that the existing models have not provided students with varied and interesting learning activities (Basturkmen 2013).

From the description above, the researcher wants to conduct further research using a systematic literature review to determine the effectiveness of the synchronous model and language used more in ESP learning for Public Health Students (Raes et al. 2020). To begin with, in this focus of the current research, the Synchronous Model is a media and model that was established by researchers as the website, where it is being developed and where it has been popular in Indonesia. In addition, the online media platform known is a course management system based on Moodle or e-learning (CMS). The e-learning process is developed as a collection of processes and applications connected to learning and training that may be completed through computer-based learning, online, virtual courses, and other forms of digital collaborative learning. The primary focus of Synchronous is on providing students with access to online English classes for EFL that make use of the most cutting-edge technologies. These classes are designed to help students improve their communication abilities by encouraging them to engage in daily conversation with an English instructor about topics that are relevant to their daily lives and places of employment. Students will be able to exercise (Practice) with English lecturers even if they do not understand the theory in depth, followed by exchanges and discussions with classmates and lecturers (Interaction) which will help them recognize their mistakes, and then the instructor will evaluate their performance in class. This new method of learning will be made possible thanks to the implementation of online learning through Synchronous, which will offer a different approach to education. Following that, the instructor will provide a synopsis of the material covered in the lecture, and then students will complete their periodic tests (Exam).

Method

The method of this current research that is performed is known as the Systematic Literature Review (SLR), and the type of study that is conducted is descriptive research. Using the application known as Harzing's Publish or Perish, a thorough search of the existing body of research was conducted on a number of databases, including Google Scholar, Scopus, and Crossref. Using the keywords "ESP AND "Public Health" OR "English Teaching Material", we gained the data as needed. The flow of selecting articles is using the Preferred Reporting Items for Systematic Reviews and Meta-analyses (PRISMA).

Inclusion criteria in this study included: research articles with publication years 2018 to December 2022, articles in Indonesian and/or English; the types of research in the articles used are True Experimental, Quasi Experimental, Randomized Controlled Trial (RCT), and Cohort; articles with a critical appraisal score of \geq 50%; as well as articles that meet the PICO (Population: college students in public health study programs; Intervention: first and second semester students taking ESP For Public Health courses; Comparations: Synchronous Models in Learning English; Outcome: the effectiveness of the Synchronous Model and language used more in ESP learning for Public Health Students Data quality analysis in this study used the Joanna Briggs Institute Critical Appraisal for Quasi-Experimental Studies which contained 9 questions. Each question with a "yes" answer will get +1 points and "no", "unclear" answers.", and "not applicable" get 0 point (Institute 2017).

Results and Discussion

Result of Data Synthesis

The search results for articles on the Google Scholar, Crossref, and Scopus databases are shown in the diagram below (Figure 1). It is shown in the Prisma Diagram that the 1211 were identified from coming from three different sources. These three sources are Google Scholar, Crossref, and Scopus. After that, a total of 199 articles were selected for screening based on these three sources. Following that, the eligibility stage revealed that there were a total of six full articles that were feasible, and those six articles were suitable as required.

In the results of the articles obtained in these four stages, there are three articles that have a Citation Index (IS) of (45) citations by Abdulaziz F.T et al. (2011), Then the journal published by Fahad Alqurashi (2016) also cited (26) citations, then Pavel S et al. (2020) his research has been cited as many as (176) citations, and these articles are worthy articles as references for research in terms of the quality of their When looking at the phenomenon of the six articles in greater detail, we find that three of the pieces that have been cited were published in the illustrative category with a combined total of 247 citations, and three additional articles were also published in indexed journals in Indonesia and across the international journals (Maryono & Junandi 2012).

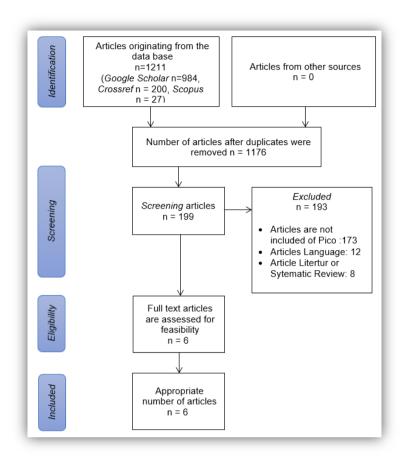


Figure 1. Prisma Diagram

Result of Quality Data Analysis

Articles that have the results of data quality analysis with a percentage of 80-100%, are considered to have very good quality, 50-79% have fairly good quality and <50% have poor quality. The final score of the data quality assessment if it reaches at least 50%, then the article meets criteria (7). There were 6 articles that had a score percentage of $\ge50\%$ (Table 1).

Writer (Years) **P6 P9** Score Conclussion Abdulaziz F.T et al. 8/9 Very Good (88,89%) (2011)Fahad Alqurashi et 7/9 al. (77,78%)Good (2016)Pavel S et al. 7/9 Very Good (2020)(77,78%)Sri Sukarni et al. 8/9 Very Good (88,89%) (2022)Risa Arroyyani et 8/9 Very Good (88,89%)al. (2022) Shan Li et al. 9/9 Very Good (2022)(100%)

Tabel 1. Data Quality Analysis

Article Search Profile

In the article search profile (Table 2), 6 articles were found that matched the inclusion and exclusion criteria. The research of the six articles was entirely conducted in Asian countries, namely 2 Saudi Arabia,

1 United States, 1 China, and 2 Indonesia. The research design of the six articles (Abdulaziz F.T et al. 2011, (Alfehaid 2011) Fahad Alqurashi et al. 2016, (Alqurashi 2016) Sri Sukarni et al. 2022, (Sukarni 2022) Shan Li et al. 2022) (Li 2022) uses Research and Development while 1 article (Risa Arroyyani et al. 2022), (Arroyyani, Widiyati, and Maryani 2022) Pavel S et al. 2022), (Blagov 2021) uses qualitative discrete. The six articles obtained by the researcher are journals that have been cited to determine how good the journal is so that it causes the researcher to publish articles in that journal. However, the impact factor has no effect on the quality of the article because it is only an attempt to measure the ranking of published journals in a certain timeframe.

Tabel 2. Article Search Profile

Researcher (Years)	Country	Research Desain	Research Objectif	Theme Classification
Abdulaziz F.T et al. (2011)	Saudi Arabia	A mixed- Methods Approach	 246 Questionnaires 6 Students 1 ferviews 7 graduate Students 6 Languange Teacher 5 Hospital Manager 11 Health Profesional English 	 Evaluate the ESP course Investigate the needs ESP students and health professionals
Fahad Alqurashi et al. (2016)	Saudi Arabia	A mixed- Methods Approach	156 QuestionnairesDoctorsStudents of medical majors	 Evaluate language subskills Improving language-related aspects like fluency, understanding, accuracy, and structure.
Pavel S et al. (2020)	United States	A mixed- Methods Approach	 502 online participants Doctors Medical professionals 	 Evaluate language subskills Improving communicative competence aspects by English for competence
Sri Sukarni et al. (2022)	Indonesia	A mixed- Methods Approach	133 Students1 English Lecturer	 Evaluate of English Teaching Implementing of ESP For public health The Effectiveness of ELT in public health
Risa Arroyyani et al. (2022)	Indonesia	Discriptif Qualiatatif	150 Students4 English Lecturer	 Evaluate of English Teaching Evaluate language subskills
Shan Li et al. (2022)	China	Discriptif Qualiatatif	112 Students5 English Lecturer	 Evaluate of English Teaching Constructs an Innovative System

The Effectiveness of the Synchronous Model

Tabel 3. The Effectiveness of the Synchronous Model

Researcher (Years)	Types of Products	Research Purposes	Design of Treatment and Measurement of Research Objects	Research result
Abdulaziz F.T et al. (2011)	ESP Course Book & Curriculum	To evaluate a and recommends the ESP Course and Curriculum	 To Find of the language needs analysis → It attempts to evaluate the ESP course and to investigate the needs of two groups of stakeholders The data collected from the documents and interview transcriptions were analysed qualitatively by hand, while those collected from the questionnaires were analysed quantitatively using the SPSS program. 	 Findings of the language needs analysis show that all four of the language skills were important. Both for the students' academic studies and for their target careers. Speaking, the evaluation results indicate that while the ESP course was helpful to some extent, it had some limitations including its curriculum, the teaching-learning materials used and the assessment procedures adopted.
Fahad Alqurashi et al. (2016)	ESP Course Book & Contents Material	To Improve language in related in for aspects in English like fluency, understanding, accuracy, and structure.	 Treatment of research subjects: → Participants' responses showed the most frequently used language subskills were those sub-skills they considered highly important. The Data were collected via a questionnaire adopted from Saudi fellowship doctors and students of medical majors who are enrolled at medical and training programs in Australian hospitals and universities. 	 findings suggest current college English language courses for medical majors need to focus more on improving language-related aspects like fluency, understanding, accuracy, and structure. The point that the materials need to restructure English for medical purposes programs in Saudi Arabia to make better course design, content, and materials responsive to target language learners' own future goals.

Researcher (Years)	Types of Products	Research Purposes	Design of Treatment and Measurement of Research Objects	Research result
Pavel S et al. (2020)	ESP Course Book	To extend the parallel process model (EPPM)	 Treatment of research subjects: → Normal-range traits (ESP agreeableness and conscientiousness) predicted endorsement of social distancing and hygiene, as well as the appeal of health messages in general. The Data were collected by questionnaire and Most participants preferred feedback 	• findings of this research English speaking-based Personality appears relevant to epidemiology and public-health communication in a contagious-disease context occurred.
Sri Sukarni et al. (2022)	ESP Course Book & Curriculum	To evaluate the implementation of English Language Teaching To identify its effectiveness in achieving the objectives of the Public Health Study Program curriculum.	 Treatment of research subjects: → This study was an evaluative study utilizing a mixedmethod research design. The data gained from the questionnaire were analysed by using descriptive quantitative whereas, The data obtained from interview and class observation were analysed qualitatively. 	• The findings of this research, it was found that for context dimension got a Percentage of Effectiveness of 78.52; input dimension got a Percentage of Effectiveness of 59.47; process dimension got a Percentage of Effectiveness of 76.74, and product dimension got a Percentage of Effectiveness of 51.86.
Risa Arroyyani et al. (2022)	ESP Course Book	To find out the students' needs in learning English	 Treatment of research subjects: → This study was a qualitative descriptive study The data were collected by using a questionnaire. A semi-structured questionnaire was distributed to the participants to gather information related to the students' needs and wants 	• The Findings showed that the students were confident in their Reading skills but not in Grammar, they also perceived that writing skill is the most important skill to learn. For each sub-skill, the students perceived that the most important skills to learn are including understanding vocabulary from the context (reading), writing correct

Researcher (Years)	Types of Products	Research Purposes	Design of Treatment and Measurement of Research Objects	Research result
Shan Li et al. (2022)	ESP Course Book & Contents Material	To improves the scientific nature of English education in the field of public health in colleges and universities.	 Treatment of research subjects: → This study was a qualitative analysis The data were collected by using a questionnaire. 	sentences (writing), pronouncing words correctly (speaking), and listening to English media (listening). The findings showed comprehensively analyses the impact of artificial intelligence and technology on the English education model in colleges and universities can be increase the student's skill.

It is possible to draw the following conclusion from the data shown in table 3 that the findings of the study indicated that the incorporation of English language instruction into the Public Health study program was successful but may benefit from further development. In other findings, language skills and language components need to be integrated since these components can support the communication skills that are included in the curriculum of the Public Health study program. This is one of the findings. Therefore, between the test and the treatment and the desire must be juxtaposed, students must not only learn English to support their academic field, but also for preparation after they apply for a job and graduate from university, particularly in the area of public health, they must have an advantage, specifically an advantage in four English skills beyond his major talents. This is because students in this sector are expected to have a higher level of proficiency in the language.

Conclusion

It is conceivable to draw the conclusion, on the basis of the findings of a a systematic literature review, that there are three findings in the Synchronous Model that have the potential to be applied and improved. To begin, the Synchronous Model is the model that has seen the most use in the field of learning and education, particularly in the field of public health ESP. Second, the Synchronous Model and language are being utilized in ESP education for public health in an increasingly widespread manner. Third, the Synchronous Model in ESP can be applied in the form of online learning both during and after the Covid-19 epidemic. This is something that can be done during the pandemic. Based on these three discoveries, it can be deduced that the Synchronous Model and ESP studies still have some holes in them. In general, this study is highly useful for practitioners since it allows them to choose whether Synchronous Model is ready to be used and improved, and it can also reveal research gaps in the field of public health as in ESP. When it comes to English language education in public health at the college and university level, this SLR is very closely interwoven in technology-based learning with English language education.

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