MEDIATING MULTILINGUALISM IN ENGLISH LANGUAGE CLASSROOM: PROSPECTS AND CHALLENGES

Literature Review of English Online Learning Using Technological Pedagogical and Content Knowledge

Ana Utami Fatoni, Fuad Abdul Baqi

utamiana3@gmail.com
Unversitas Bina Bangsa, Serang,Indonesia

fuadbaqi80@gmail.com
Universitas Bina Bangsa, Serang, Indonesia

Abstract

The aim of this study is to analyse articles using in online learning using Technological Pedagogical and Content Knowledge (TPACK). This study uses literature review as a foundation for research of perceptions and practices of English online learning using TPACK. It analysed articles in 2020-2022 when Covid 19 pandemic happened over the world especially in Indonesia. The study analysed 10 articles and the most investigations are to the teacher activity in online learning. The results from those articles pandemic Covid 19 had changed most of the teachers' perspectives and practices in online learning. The changes happened on knowledge aspects of technology, pedagogy, and also content. They elaborated their teaching assisted with technology and tried to create online learning fulfilling students learning outcomes.

Keywords: online learning, TPACK, teachers, students, learning outcomes

Introduction

The rapid improvement in this era has brought technology be applied in various aspects including education (Batane and Ngwako, 2017). They said there are some possibilities to integrate technology in teaching design to enhance students learning. The condition caused technology is seen as one of education alternatives. As mentioned in one of 12 abilities in 21st century, technology holds important consideration for teacher to applied into the classroom (Septiyani, et.al., 2020). It is known as a base to bring technology into classroom.

The fast development of this technology caused modern classroom must bring technology into as the essential component education (Inderawati, 2017). It is because exposing technology in for learning opportunities is an essential skill, especially for English teachers. Learning in current situation has improved to be more varied choices, especially for English learning. There are lot of choices to be applied, such as offline, hybrid, blended and online learning. All of them could design English learning which focuses on reading, writing, listening and speaking. Since there are lots of

facilities provided to practice those skills, pandemic Covid 19 brought the teachers to be able to apply their teaching into online learning.

Pandemic Covid 19 is a turning point of learning assisted with technology being used massively (Fuad, et.al., 2020). They said the pandemic affected in most aspects including education which force teachers and students to keep learning activity from their homes. As result, they use technology to assist them learn. The government of ministry of education in Indonesia had decided to launch the new policy of learning from home since March 2020 by conducting the policy of online learning (Menteri Pendidikan dan Kebudayaan RI, 2020). Based on the background, using technology for learning, especially English learning is needed. The technology mentioned is the technology that can assists the teachers to represent the concepts, principles and laws (Knutsots, 2012). By those reasons, the teachers need competencies that cover their needs integrating learning activity to the technology which called as Technological Pedagogical and Content Knowledge (TPACK) for accommodating online learning activities (Chai, et al., 2013).
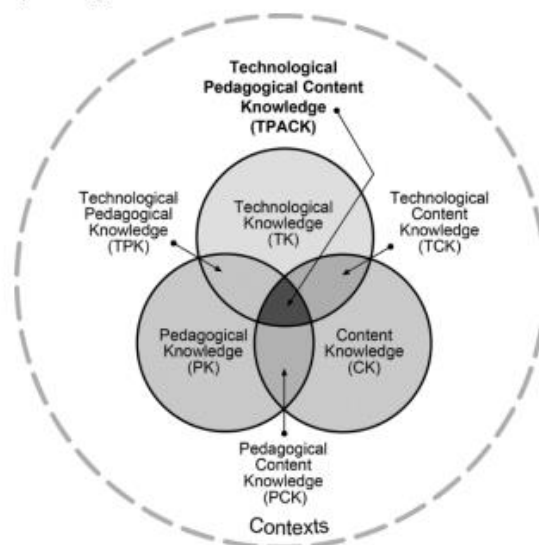

Figure 1 TPACK Model
Koehler and Mishra (2005)

TPACK is a conceptual framework for understanding the teachers knowledge in integration to the technology (Wang et al., 2018). TPACK provides a theoretical model for studying the ways for teachers use technology in education (Septiyani et al, 2020). TPACK framework describes the relationships on the basic components of knowledge including technology, pedagogy and content (Koehler and Mishra, 2005). Those components are defined as followed:

a. Technological knowledge is a knowledge that related with ICT both on software and hardware, for example how to use internet and other applications for learning.

b. Pedagogical knowledge defines how to use their pedagogy knowledge to teach students using model approaches such as PBL, inquiry etc., and to deliver the theories, to plan and teach the lesson, handle students diversity, and to conduct the score.

c. Content knowledge depicts on the knowledge of the material or discussion. In this case, the teachers understand on English materials as a subject matter.

d. Pedagogical content knowledge is a knowledge used to explain the materials using pedagogy strategy by creating them become easier to be learnt, such as by giving illustration, model and analogy.

e. Technological pedagogical knowledge is a teachers knowledge about technology to lead them having different learning situations by facilitating pedagogic approach such as using some applications to assist collaborative activities.

f. Technological content knowledge explains how technology represent the materials and create the discussion

g. Technological pedagogical and content knowledge is a knowledge about how to use various technology to facilitate the materials to be learnt and becomes the illustration technology, pedagogy, and content knowledge.
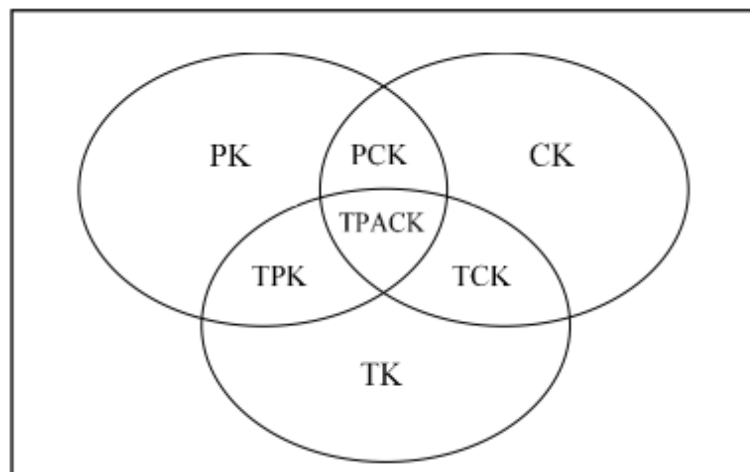
Figure 2 The interaction of TPACK
Koehler and Mishra (2005)

This study will focus on literature review of how TPACK used in English online learning. There are 10 articles as references as the researchers determine for this study.

The first article is written by Mitha Septiyani et al., (2020). They investigated TPACK perception of English Education students at Lampung University, the way the students obtain TPACK in learning, and the role of lecturers in assisting the students to obtain TPACK in learning. The data were gained by mixed method using questionnaire and interview. The result stated the TPACK perception of the students was generally good as the score of all domains measured (Technological Knowledge/TK,

Technological Content Knowledge/TCK, Technological Pedagogical Knowledge/TPK, Technological Pedagogical Content Knowledge/TPCK, and Technology-related Learning Experiences/TLE) categorized as high.

The second article is from Anita Lie et al., (2020). They explored language teachers' online engagement during Covid 19 Pandemic in Indonesia. The result of their study found that there was an interplay of five related factors of offline learning process aiagins five levels of engagement, including students, teachers prior exposure to online learning, technological knowledge, pedagogical knowledge and support system. In this study, the teacher were struggling to enhance the quality of online elarning engagement which gave the awareness of the inadequacy of their online learning delivery and renewed sense of commitment.

The third is from Muhammad Fuad et al., (2020). They analyzed Indonesian Language teachers of TPCK and their readiness to conduct online learning during Covid 19 outbreak. They used quantitative research with survey method to the teachers in Lampung. The result demonstrated that language teachers have adapted to the implementation of online learning using technology with the various learning media and educational p;atforms as well as in TPCK.

The fourth article is written by Lailatun Nurul Ariq et al., (2021) exploring on the teachers belief anout TPACK in teaching writing during Covid 19 pandemic era. They obtained the content, technology and pedagogy for in-service EFL teachers as technology integration reflection and proper teaching strategy for teaching writing during the Covid 19 pandemic era. They used semi-structured interview and artefact analysis. The result of study fiund teachers elaborate their belief in teaching writing by utilizing familiar applications, engaging content-based curriculum and applying student-oriented method.

The fifth is written by Nur Arifah Drajati et al., (2021). They analyzed is focused to English pre-service teachers TPACK-21CL in Teaching Practicum. The result found the pre-service teachers demonstrated varying degrees of the knowledge and practice in designing lesson plan with TPACK-21CL framwork, the adoption of TPACK-21CL framework into lesson plan had a positive impact on English pre-service teachers to solve the problems and learning values.

The sixth article is written by Tommi Fajero et al., (2021). The study analyzed on the implementation of online learning in Covid 19 Era in all of state senior high school in Tegal. The result found the implementation of online learning at state senior high schools in Tegal is high (the average result categorize as high) on thoose seven aspects of TPACK.

The seventh is conducted by Endah Juwandani et al., (2021). The study described for investigating the ideas of teachers strategy in one of elementary school in Jakarta in preparing blended learning in the new normal era. For the analysis, they used qualitative reasearch using observations and interviews. The result mentioned that the preparation of blended learning in new normal has been design quite well by the teachers by planning and preparing facilities, carrying out conditioning Covid

19 of 5M, conducting online and offline learning for students and parents, applying technological competence, pedagogical and knowledge content in blended learning and applying the evaluation of the learning outcomes.

The eighth is the article from Yatun et al., (2021). They examined the teachers TPACK in practice used in blended learning course. The qualitative descriptive was used to analyze the phenomena in teaching learning process by seeing on the observation with three components practice of TPACK, including technological tool, content material and learning activity. The result of the analysis showed that TPACK helped the teachers conducted an effective teaching with technology as they were able to apply the framework in practice for blended learning.

The ninth is the article from Sofia Imania et al., (2022). The study investigated EFL teachers skill on technology integration and their preferable ICT based learning system amidst distance education. Besides that, the study also analyzed TPACK on the teachers in a significant different gap in terms of teaching categories and gender. The findings described that the EFL teachers TPACK was decent, the gender and teaching categories were not regarded as the factors that influence their TPACK. The preferable of the analysis was also perceived on Google Classroom.

The last article is written by I Nyoman Arga Wijaya et al., (2022). The research focused on finding out the perception of student-teachers towards TPACK. The study uses quantitative design to determine student-teacher perceptions of the TPACK framework using quantitative design questionnaire. The result showed student-teachers have a positive perception regarding the imprementation of TPACK in teaching process.

Methodology

This study used literature analysis reviewing previous articles focusing on TPACK framework on students, in-service or pre-service teachers. The analysis was based on the following steps:

a. Browse the articles in Indonesia journal database. The writers depicted on online learning happened in Indonesia, thus all of the articles were using Indonesian teachers as participants.

b. Review the articles from 2020-2022 using the categories as writers and year of publishing, research object, subject, research methods, result of analysis and future work.

Discussion

The reviewed articles were consisted of 10 articles from 2020-2022 as a prior for further research for perceptions and practices of English online learning using TPACK. The objects of study are students, pre-service and in-service teachers. The subject was focused on English subject as the writers focus. The studies used various approach, qualitative, quantitative and mixed method with surveys, observations and interviews. The result of analysis were described on the table below:

Table 1. Analysis Summary

Description		Numbers of article
Year of publish	2020	3 articles
	2021	5 articles
	2022	2 article
Research object	Students	2 articles
	Pre-service teachers	2 articles
	In-service teachers	5 articles
	Students and teachers	1 article
Subject	English	9 articles
	Multi subjects	1 article
Research design	Quantitative	5 articles
	Qualitative	3 articles
	Mixed method	2 articles

Table 2 Article analysis 2020-2022

	Researcher and year of publication	Research object	Subject	Publisher/Journal	Research design	Future work
1.	Mitha Septiyani et al., (2020)	225 English Education undergraduate students and 3 lecturers	English	Journal of English Education Volume 8, Issue 2, June 2020	Mixed method	-
2.	Anita Lie et al., (2020)	18 language teachers from four regions	English	Journal of Information Technology Education: Research Volume 19, 2020	Quantitative design	Inviting to involve non-language teachers so that more conclusive findings can be obtained.
3.	Muhammad Fuad et al., (2020)	318 teachers	English	Universal Journal of Educational Research 8(11B): 6091-6102, 2020	Quantitative design	Expecting the result could be used as an evaluation by Policymakers in Indonesia to improve

						the learning system.
4.	Lailatun Nurul Ariq et al., (2021)	Three in-service EFL teachers	English	Al-Ishlah: Jurnal Pendidikan, Vol.13 (1) June, 2021	Qualitative design	Giving the implication for the institutions to have better improvement of facilities and training.
5.	Nur Arifah Drajati et al., (2021)	20 English pre-service teachers	English	Indonesian Journal of Applied Linguistics, Vol. 11 No. 1, May 2021	Qualitative design	Developing broader research in more than artefacts provides better English pre-service teachers' TPACK-21CL capability.
6.	Tommi Fajero et al., (2021)	375 students	English	Jurnal Pendidikan Kesehatan Rekreasi, Vol. 7, No. 2, Juni 2021	Qualitative design	-
7.	Endah Juwandani et al., (2021)	All teachers in SDN Kapuk Mutiara 3	Various subjects	Prosiding Seminar Nasional Ilmu Pendidikan dan Multidisiplin Esa Unggul, vol 4, 2021	Qualitative design	Developing innovations for learning strategies in new normal era, and analysing the research with different object.
8.	Yatun, et al., (2021)	two teachers	English	Linguistic, English Education and Art (LEEA) Journal Volume 5 (1), Juli-Desember 2021	Qualitative design	-
9.	Sofia Imania et al., (2022)	139 in-service EFL teachers	English	Jurnal Pendidikan: Teori, Penelitian, dan Pengembangan Volume: 7 (2) Februari, 2022	Quantitative design	Suggesting teachers to optimize their ICT knowledge, especially in TCK. It would and getting involved in professional

						development activities (joining teacher training, or collaborating with universities)
10.	I Nyoman Arga Wijaya et al., (2022)	141 participants of 2017-years students-teachers	English	The Art of Teaching English as a Foreign Language, Vol 3. No.1 2022	Quantitative design	Using this research as motivation and self-reflection for English teachers in carrying out the teaching and learning process. Institutions can illustrate how to improve student-teachers ability to integrate TPACK in the learning process.

Result

1. Year of publication

The research was analysed mostly in 2021 when Covid-19 pandemic increased, it caused almost all of schools uses online learning. This condition caused lots of researchers investigated the phenomenon happened. Meanwhile in 2020 the research found less rather than in 2021 focusing on online learning analysis, especially using TPACK analysis. In 2022, the research found the least using TPACK analysis as online learning since offline learning was started to run in the beginning of 2022.
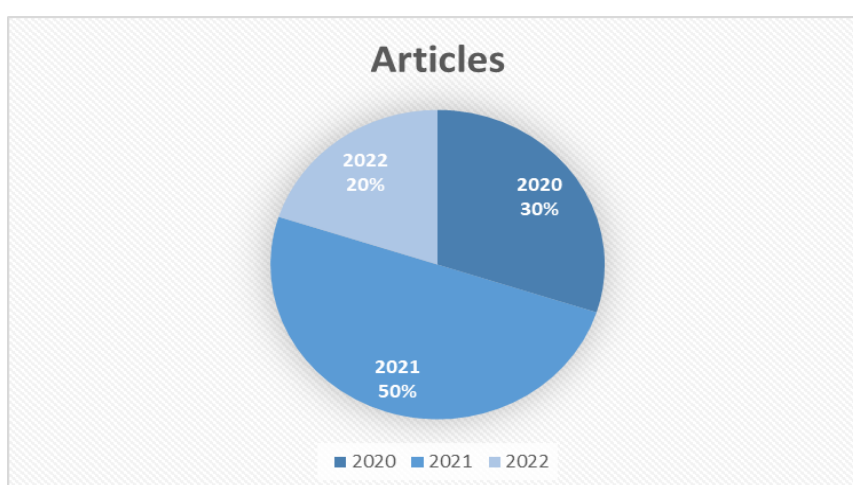

Figure 3. The description of year of publication

2. Research object

    Research object was based on four types, consisting of teachers, students and pre-service teachers, and teachers and students. Based on the analysis consisting of 10 articles, the research was dominated by teachers as the objects. There were 6 articles (60%) that investigated teachers in online learning. Meanwhile, the students were obtained only in one article (10%). For the pre-service teachers, they were investigated into two articles (20%). The last, the investigation between teachers and students was only 1 article (10%).
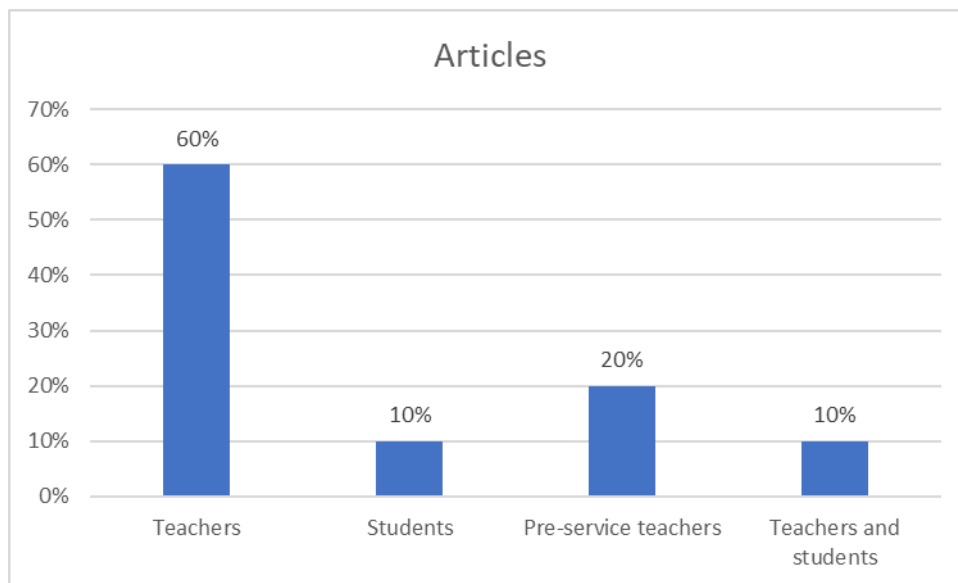

Figure 4. Research Object

3. Subjects of the analysis

    This article analysis was divided into two subjects. Almost all the data investigated English subjects as the focus of the research, it was 90% of the data focused on English subjects. And the last was focused on various subjects (10%) since the analysis focused on the teachers.
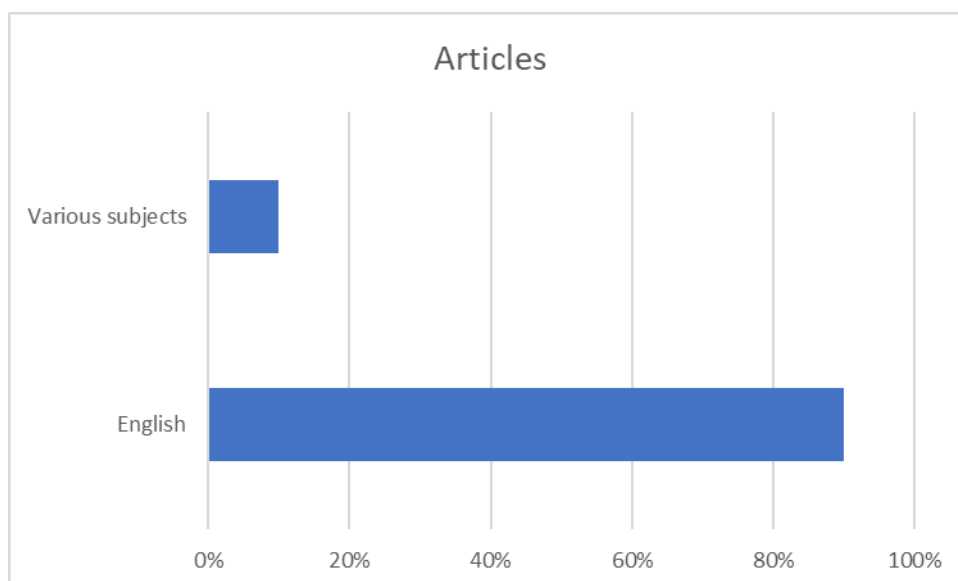

Figure 5. Subjects of the analysis

4. Kinds of research

The articles used qualitative design three research designs, qualitative, quantitative and mixed method. The qualitative design found 5 (50%), quantitative design investigated into 4 articles (40%), and mixed method analysed in 1 article (10%).
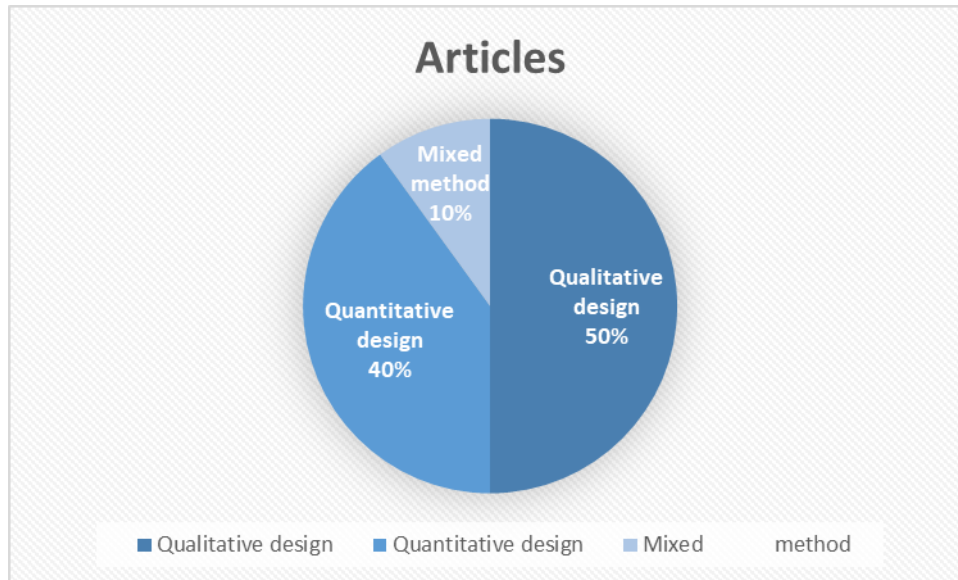

Figure 6. Kinds of research

Conclusion and Suggestion

The study literature from 10 articles was described 50% in 2021because the Covid-pandemic was raising and forced the government to keep learning online. There are several articles published in 2020, the articles were less than 2021 because the policy was forecasted change for the high and low case of Covid-19 pandemic. In 2022, the research is lower since the online learning in most of provinces in Indonesia was changed onto learning in the class. The research objects were dominated by teachers on how they held online learning in the class and their understanding of TPACK. The study also dominated by mostly of English subjects. There was only one subject different, using various subjects in elementary school. For the last analysis, the writer found the research use qualitative to describe the phenomenon of online learning in teachers perspective and practice using TPACK.

The result above showed the analysis of online learning using TPACK obtained high attention from the researchers. The analysis mostly saw the teachers as the object of research. Since Covid-19 pandemic affects to the learning, and the case is still rising and falling, online learning will be one of solutions. Moreover, because there are lots of online learning happening and are predicted as future learning solution. Further investigation of the teachers perspective and practice are needed to know how far online learning would be a choice in the future.

References

Aniq, Nurul Lailatun., et.al. (2021). Unravelling Teachers' Beliefs about TPACK in Teaching Writing during the Covid-19 Pandemic. Al- Ishlah: Jurnal Pendidikan, June 2021, 13 (1), Pages 317-326. DOI: 10.35445/alishlah.v13i1.423

Batane, T., & Ngwako, A. (2017). Technology use by pre-service teachers during teaching practice: Are new teachers embracing technology right away in their first teaching experience? Australasian Journal of Educational Technology, 33(1), 48–61. Doi 10.14742/ajet.2299

C. S. Chai, C. K. Chin, J. H. L. Koh, and C. L. Tan, "Exploring Singaporean Chinese Language Teachers' Technological Pedagogical Content Knowledge and its Relationship to the Teachers' Pedagogical Beliefs.," Asia-Pacific Educ. Res., vol. 22, no. 4, pp. 657–666., 2013, doi: https://doi.org/10.1007/s40299-013-0071-3.

Drajati, Nur Arifa,. Et al. (2021). Investigating the adoption of TPACK-21CL by English pre-service teachers in a COVID-19 teaching practicum. Indonesian Journal of Applied Linguistics Vol. 11 No. 1, May 2021, pp. 124-133. Doi /10.17509/ijal.v11i1.34625

Fajero, Tommi,. Et al. (2021). Analisis Technological Pedagogical Content Knowledge (TPACK) dalam Implementasi Metode Pembelajaran Daring pada Era Covid-19 di SMA Negeri se-Kota Tegal. Jurnal Pendidikan Kesehatan Rekreasi P-ISSN 2337-9561 Vol. 7, No. 2, Hal. 342-353, Juni 2021. DOI : 10.5281/zenodo.4914831

Fuad, Muhammad,. Et al. (2020). Exploring Teachers' TPCK: Are Indonesian Language Teachers Ready for Online Learning during the COVID-19 Outbreak?. Universal Journal of Educational Research 8(11B): 6091-6102, 2020. DOI: 10.13189/ujer.2020.082245

Imania, Sofia,. Et al. (2022). Unpacking EFL Teachers' TPACK Thru the Distance Education. Jurnal Pendidikan: Teori, Penelitian, dan Pengembangan Volume: 7 Number: 2 moth Februari year 2022 page: 51—60

Juwandini, Endah, et al,. (2021). Pendidikan Guru Sekolah Dasar, Fakultas Keguruan dan Ilmu Pendidikan, Universitas Esa Unggul, West Jakarta.

Lie, A,. Et al. (2020). Secondary School Language Teachers' Online Learning Engagement During The Covid-19 Pandemic in Indonesia. Journal of Information Technology Education: Research, 19, 803-832. Doi 10.28945/4626

M. J. Koehler and P. Mishra, "Teachers Learning Technology by Design.," J. Comput. Teach. Educ., vol. 21, no. 3, pp. 94–102, 2005, doi: https://doi.org/10.1.1.130.793 7.

O. Knutsson, M. Blåsjö, S. Hållsten, and P. Karlström, "Identifying different registers of digital literacy in virtual learning environments," Internet High. Educ., vol. 15, no. 4, pp. 237–246, 2012, doi: 10.1016/j.iheduc.2011.11.002. [9]

Septiyani, Mitha et al. (2020). Technological Pedagogical and Content Knowledge (TPACK) perception of English Education Students. English Review: Joourbal of English Education Volume 8 Issue 2 June 2020.

Susilawati, Endang et.al. (2022). Pengintegrasian TPACK dan TALULAR dalam Mengembangkan RPP Bahasa Inggris di Masa Pandemi. Acitya Bhakti. Volume 2 Nomor 2, Agustus 2022

Wijaya, I Nyoman Arga, et al. (2022). English Language Education Student-Teachers' Perception on TPACK. The Art of Teaching English as a Foreign Language, Vol 3. No.1 2022 DOI: 10.36663/tatefl.v3i1.193

Yatun,. Et al. (2021). Teachers' TPACK Practice of English Blended Learning Course in The Midst of Covid-19 Pandemic. Linguistic, English Education and Art (LEEA) Journal Volume 5 Nomor 1, Juli-Desember 2021 Doi. 10.31539/leea.v5i1.2754