

**EXPLORING PRE-SERVICE TEACHERS' EXPERIENCE IN USING
MIND MAPPING ONLINE PLATFORM TO DEVELOP ENGLISH
MATERIALS: A CASE STUDY AT ENGLISH LANGUAGE EDUCATION
DEPARTMENT UIN SUNAN AMPEL SURABAYA**

THESIS

Submitted in partial fulfillment of the requirement for the degree of Sarjana
Pendidikan (S.Pd) in Teaching English



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ABSTRACT

Sofitriyani, Virda (2021). “*Exploring Pre-service Teachers’ Experience in Using Mind Mapping Online Platform to Develop English Materials: A Case Study at English Language Education Department UIN Sunan Ampel Surabaya*” A Thesis. English Language Education Department, Faculty of Education and Teacher Training. UIN Sunan Ampel Surabaya. Advisors: Prof. Dr. Mohamad Salik, M.Ag. and Rakhmawati, M.Pd

Key words: *mind mapping online platform, developing English materials*

Appropriate online learning teaching materials is based on objectives which are desired by the teachers’ and students' needs, and also resolve online drawback online learning teaching, one of them is by implementing a mind mapping online platform as a media. The use of mind mapping online platforms has contributed in developing English materials. Thus, the purpose of this research is to interpret the teacher candidates’ experience in developing English teaching materials. This research was studied by using descriptive qualitative studies which involved interview guidelines and observation checklists. Accordingly, this research was composed of pre-service teachers in seventh semester students of State Islamic University of Sunan Ampel Surabaya as participants. These participants are selected by purposive sampling. Based on the result of this research, pre-service teachers showed in the selection of mind mapping referring to the benefits and the features of its online mind mapping platform. Another appearance in this study was experience in developing learning teaching materials by utilizing mind mapping online platforms. There are derived about pre-service teachers' considerations to provide appropriate English materials. In addition, this study also reveals the pre-service teachers successfully in applying and solving e-learning problem after developing English material. This is referring to the pre-service teachers’ lesson plan. Unfortunately, this research demands to be explored deeply in terms of compliment media for supporting offline and online learning teaching materials.

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ABSTRAK

Sofitriyani, Virda (2021). “*Exploring Pre-service Teachers’ Experience in Using Mind Mapping Online Platform to Develop English Materials: A Case Study at English Language Education Department UIN Sunan Ampel Surabaya*”. Skripsi. Program Studi Pendidikan Bahasa Inggris, Fakultas Tarbiyah dan Keguruan. UIN Sunan Ampel Surabaya. Pembimbing: Prof. Dr. Mohamad Salik, M.Ag. and Rakhmawati, M.Pd

Kata Kunci: *platform mind mapping online, pengembangan materi-materi Bahasa Inggris.*

Bahan ajar pembelajaran online yang tepat adalah didasarkan pada tujuan yang diinginkan oleh guru dan kebutuhan siswa dan juga mengatasi masalah pada pembelajaran online, salah satunya adalah dengan mengimplementasikan platform online mind mapping sebagai media. Penggunaan platform online mind mapping turut andil dalam mengembangkan bahan ajar pembelajaran. Dengan demikian, tujuan dari penelitian ini adalah untuk menginterpretasikan pengalaman kandidat guru dalam mengembangkan bahan ajar pembelajaran. Penelitian ini menggunakan metode deskriptif kualitatif yang meliputi pedoman wawancara dan daftar periksa observasi. Oleh karena itu, penelitian ini melibatkan calon guru pada mahasiswa semester tujuh Universitas Islam Negeri Sunan Ampel Surabaya sebagai partisipan. Partisipan ini dipilih secara purposive sampling. Berdasarkan hasil penelitian, calon guru menunjukkan dalam pemilihan mind mapping mengacu pada manfaat dan fitur platform mind mapping online. Tampilan lainnya dalam penelitian ini adalah pengalaman dalam mengembangkan bahan ajar pembelajaran dengan memanfaatkan mind mapping. Ada penjelasan tentang pertimbangan kandidat guru untuk menyediakan materi Bahasa Inggris yang sesuai. Selain itu, penelitian ini juga mengungkapkan kandidat guru dengan sukses menerapkan dan mengatasi masalah pembelajaran online setelah mengembangkan materi Bahasa Inggris. Hal ini mengacu pada Rencana Pelaksanaan Pembelajaran calon guru. Namun, penelitian ini menuntut untuk dieksplorasi lebih mendalam dalam hal media pelengkap untuk mendukung bahan ajar pembelajaran online.

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CHAPTER I

INTRODUCTION

This chapter reveals the background of the study. Thereafter, it continuously presents the research questions and objectives of the study. Moreover, brief explanations about significance of study, scope and limitation of the study, and definition of key terms.

A. Background of Study

The use of technology has widely contributed in various areas these days, including in education. Integrating information and communication technology (ICT) can develop teaching and learning in the classroom extremely.¹ The contribution of ICT in higher education institutions can increase the pre-service teacher's skills in practicing to use ICT during learning teaching. Ahmad in Halimah stated that, the students in higher education programs should have competency in adapting new patterns of work in using technology.² This cannot be denied that technology makes pre-service teachers easier during the learning teaching process. Josef Pavlicek et al mentioned that using technology tools emphasis is more and more simplified to support material during the learning teaching process for educators.³ Many pre-service teachers should determine

¹Sonia, L., Colette, D., Jean, L. ICT Implementation Stages of Primary School Teacher. The Practices and conceptions of Teaching and Learning. (Australia: Australian Association Research in Education National Conference; 2006) p.16.

² Halimah, Hasbu Naim Syaddad. Preparing the Preservice Teachers to be the Industrial Revolution Teacher 4.0 Era. In 3rd International Conferences on Learning Innovation and Quality Education (ICQLE 2019) (Atlantis Press; 2020) p. 1167.

³ Petr, K., Josef, P., Petr, H, Effective Mind Maps in Learning. Acta Informatica Pragensi (Czech: Czech University of Life Sciences Prague; 2014) p.240.

appropriate technology in order to provide meaningful learning. This can make satisfaction of the students in classroom⁴.

In Asia, there are pre-service teachers who still lack insights about digital media tools although their perceptions in using digital visual media was useful to implement in current education and Indonesia education is not the exception. Based on Forkosh-Baruch's statement that this pre-service teachers' problem is dealing with several factors such as time frame, old teaching paradigm, capacity in operating technology media, and lack in understanding ICT for education.⁵ Nowadays, learners' tendency in using technology tools for all day long, one of them is smart phone which can reach a lot of information. This encourages educators to initiate and should develop materials with integrating technology which can create meaningful materials rather than involve to the actual materials in order to increase the learning activities⁶. These three learning activities in lesson plan are dealing with pre-activity, while-activity, and post-activity⁷. This brings out a learning platform for education which is possible to support educators in increasing the quality and scope of resources,

⁴ Tri Ahkmad, Efendi. The Students' Perceptions of The Implementation of ICT-Supported Project Based Learning in English Teaching (Indonesia: Indonesian Journal of English Teaching; 2017) p.181.

See also, Judith J. S., & H. Carol G. Pre-service teachers use e-learning technologies to enhance their learning (Journal of Information Technology Education: Research 12(1); 2013) p.121.

⁵ Alona, Forkosh-Baruch, Preparing Preservice Teachers to transform Education with Information and Communication Technologie (ICT) in: voogt, J., Knezek, G., Christensen, R., Lai, KW. (eds) (Springer International Publishing: Handbook of Information Technology in Primary and Secondary Education; 2018) p.9.

⁶ Zulfah, Fakhruddin., Amzah, S., & Nur Fadillah, N. Technology-Based Teaching Material Development Training for Pre-Service Teachers to Improve Students' Learning Outcomes. (NOBEL: Journal of Literature and Language Teaching, 10(1); 2019) p.88.

⁷ The Ministry of Education and Culture RI. Decree number 22 about standard of process (Jakarta: The Ministry of Education and Culture RI; 2016) p.7.

digital literacy, and other benefits.⁸ It can support pre-service teachers in creating innovative learning for changing teaching time frame to be more up to date. In this online learning, mostly educators deliver all the materials without consider another media to acquire students' need. There are make the students easier to understand, interested in the materials, and enjoy the learning. This can be called as an old teaching paradigm that learning teaching process conducted only in teaching-centered rather than in combining students-centered with in. To change this old teaching paradigm, the educator should develop material in order to meet the students' need.⁹ Therefore, implementing a mind mapping online platform is an alternative way to decrease these problems. Mind mapping online platform can increase students cognitive skills.¹⁰ On the other hand, Martin argued that mind mapping online platform is an imprecision relationship between one idea and another and inconsistent in writing details of ideas.¹¹ However, because of these mind mapping's weaknesses, the students can inspire to analyze, creative thinking, and focus on the content. Mind mapping itself is a media that can visualize the ideas and significant arguments through providing pictures, lines, and colors. The use of mind mapping can recollect and illustrate chunks of information easily by

⁸ Itslearning. The 12 key benefits of learning platforms: How learning platforms support the business of teaching and learning (itslearning AS; 2011) Access at 21 November 2020, 17.23.

⁹ Zulfah, Fakhruddin., Amzah, S., & Nur Fadillah, N. Technology-Based Teaching Material Development Training for Pre-Service Teachers to Improve Students' Learning Outcomes. (NOBEL: Journal of Literature and Language Teaching, 10(1); 2019) p.88.

¹⁰ Dipak Bhattacharya & Ramakanta Mohalik. Digital Mind Mapping Software: A New Horizon in the Modern Teaching Learning Strategy. (Journal of Advances in Education and Philosophy; 2020) p.405.

¹¹ Davies, Martin. Concept mapping, mind mapping, and argument mapping: what are the differences and do they matter?. *Higher education*, 62(3) (Australia; 2011) p.282.

symbol, graphic, or picture.¹² The process of creating mind mapping, the educator can use the existing digital mind mapping platforms. It is referring to the era in which learning media tools should be able to achieve various learning purposes. Petr Kedaj et al viewed that the study proposes by using mind mapping are “brainstorming, visualization, decision-making, and time and project management”.¹³ Furthermore, this possible way to provide meaningful material based on focus syllabus, students’ and teachers’ needs.¹⁴ There online mind mapping platform are in commercial and in free versions.¹⁵ Both versions provide helpful features. However, the commercial one demand to purchase the premier feature. Thus, in this study, the researcher attempts to investigate one of free version which is called Mindomo other than similar application. This because Mindomo obtains easily features and easier to operate in offline mode.

The previous studies implemented mind maps in English vocabulary and grammar lessons for English Foreign Language (EFL) students. In 2018, Xiaojun Wang and Jiri Dostal conducted research entitled “Using a Mind Map to Learn English Vocabulary”. By implementing mind maps in English vocabulary lessons, students can be facilitated to build up their ideas in order to increase their understanding of English vocabulary. Furthermore, mind maps’ function to help teachers in delivering knowledge and communicating

¹² Tony, Buzan. *Buku Pintar Mind Map* (Jakarta: PT. Gramedia; 2005) p.9-13.

¹³ Petr, K., Josef, P., Petr, H, *Effective Mind Maps in Learning*. Acta Informatica Pragensi (Czech: Czech University of Life Sciences Prague; 2014) p.241-242.

¹⁴ Kathleen Graves, Shisheng Xu. *Designing language courses: A guide for teachers* (No. 428 G7) (Boston, MA: Heinle & Heinle; 2000) p.156.

¹⁵ Dipak Bhattcharya & Ramakanta Mohalik. *Digital Mind Mapping Software: A New Horizon in the Modern Teaching Learning Strategy*. (Journal of Advances in Education and Philosophy; 2020) p. 401-405.

to students.¹⁶ In 2019, Tran Thi Yen conducted research that attempted to analyze the effectiveness of mind maps by knowing teachers' teaching techniques and 10-grade students' responses about problems in English grammar learning and feedback of using mind maps in English grammar learning. The result of his mix method research showed that students were more interesting and motivating in the learning teaching process.¹⁷

Another previous study integrated collaborative digital tools and online activities which increase pre-service teacher's communication skill during the learning teaching process conducted in Canada.¹⁸ She conducted qualitative research methods. The finding of this study provided insights about online collaborative mind mapping in forum activity and added to the existing information in online learning, especially concerning the use of visual collaborative tools.

Other previous studies discuss the influence of the integration of technology and the students' contribution and focus on learning. Petr Kedaj, Josef Pavlíček, and Petr Hanzlík explored about mind mapping online platforms for structuring study materials in e-learning of Czech University and this study showed that the effectiveness of mind mapping online platforms for e-learning after practicing in using mind mapping online platforms during learning

¹⁶ Xiaojun Wang, & Jiri Dostal. Using a Mind Map to Learn English Vocabulary. (Czech: Palacky University Olomouc; 2018) p. 3.

¹⁷ Tran, Thi Yen. Using Mind Maps in Teaching English Grammar to Grade-10 Students. (TNU University; 2019) p. 9.

¹⁸ Rosa, Cendros Arajuo. Thesis: Collaborative mind mapping to support online discussion in teacher education (Canada: The University of Western Ontario; 2019) p. 70-71.

teaching.¹⁹ The researchers found out the positive impact for students' examination scores. Other previous studies also applied technology during learning, teaching and conducted in Asia.²⁰ In 2017, Widiyasari conducted collaborative classroom action research (CCAR) which highlighted the enhancement of students' focus on learning process; students' confidence in asking and answering questions, presenting their mind mapping, and making conclusions about the lesson that they have learnt. In 2020, Sidik investigated the results of a mind mapping online platform which is Mindjet Mindmanager based on Islamic Junior High state School students and teacher responses. This study used quantitative design and showed students were paying more attention and attending the lesson.

Mind mapping online platform has contributed to develop materials in two Islamic Junior High Schools namely MTsN 1 Kabupaten Pasuruan and MTsN 2 Lamongan for pre-service teachers. It is because these schools face similar difficulty in providing innovative media for English material. It can be seen through previous teachers' lesson plan which is the lack of an online platform as a media and activities during the learning teaching process. Therefore, the aim of this research is to collect the data to discover pre-service teachers'

¹⁹ Petr, K., Josef, P., Petr, H, Effective Mind Maps in Learning. Acta Informatica Pragensi (Czech: Czech University of Life Sciences Prague; 2014) p. 248-249.

²⁰ Ririn, Widiyasari. Meningkatkan Aktivitas dan Hasil Belajar Mahasiswa Dengan Mind Map Berbantuan E-Learning Melalui Edmodo (Jurnal Teknodik; 2017) p. 30. Jurnal See also, Abu Bakar, Sidik. Pengembangan Media Mindjet Mindmanager Pada Pembelajaran Fikih Materi Shalat di Kelas VII Mts Muhammadiyah Sulit Air Kab. Solok (El-Hekam: Jurnal Studi Keislaman, 4(1); 2020) p.14.

experience in using mind mapping online platform to develop learning materials for English lessons by interviewing and observing.

B. Research Questions

The enlightenment of the background of study can formulate the research questions of the study as follows: how is pre-service teachers' experience to develop English materials by using Mindomo for learning teaching practice?

C. Objective of The Study

Based on the research questions, this study investigates the use of a mind mapping platform in developing learning materials by pre-service teachers in the seventh semester of the English Language Education Department and formulate the objective is to investigate pre-service teachers' experience to develop English materials by using Mindomo for learning teaching practice.

D. Significance of Study

According to the objectives, the researcher conducts deep information about pre-service teachers' consideration in choosing a mind mapping online platform and experience in developing learning material using a mind mapping platform. This study provides the significant role of teacher and future researcher.

1. The Teacher or Pre-service Teacher

This study is expected to become valuable for the teacher who is applying the mind mapping online platform. By knowing the pre-service teachers' consideration, the teacher finds out the insights more about the suitable mind mapping online platform to develop learning materials based on its features in order for the learners to face ease of usage and access.

2. The Future Researcher

The discovery of this research is expected to give the extensive reference for future researchers interested in doing similar research. The future research can develop another focus of the contribution of mind mapping platforms such as for increasing students' skill. Furthermore, the future researcher can discover standards of complimenting tools of online platforms for pre-service teachers that can support online main mapping platforms in offline or online learning.

E. Scope and Limitation

This explores as conduct to explore the pre-service teacher in using a mind mapping platform based on their experience. The feature of this study focuses on developing learning materials through using mind mapping online platforms.

This research has limitations including location, population, area, and evaluation data. The researcher conducts this research in the English Language Education Department of Islamic State University of Sunan Ampel Surabaya

especially in the seventh semester. The area is deliberated about pre-service teachers' experience in using Mindomo in improving learning materials. This study adopted interactive analysis by Miles and Huberman theory for evaluating all the data.

F. Definition of Key Terms

The researcher presents a definition of various key terms to guide the reader understand the components of this study clearly. These are delivered as follows.

1. Pre-service Teacher Program

In this digital era, the pre-service teacher program is an important higher education program that increases teachers' candidate's proficiency in requiring their teaching practice, especially in providing meaningful materials.²¹ In this research, the meaning of pre-service teachers' program is a program which contributes to increasing pre-service teachers' ability in using digital media tools. This is in order to provide learning teaching materials, especially in English lesson.

2. Mind Mapping Online Platform

The meaning of mind mapping online platform is an applicable technology tool for education which has interesting features to visualize branches of ideas and make relationships with each other by conducting

²¹ Judith J. S., & H. Carol G. Pre-service teachers use e-learning technologies to enhance their learning (Journal of Information Technology Education: Research 12(1); 2013) p.121.

procedures.²² In this research, mind mapping online platform means pre-service teachers' digital media tool to develop materials in an innovation which is namely Mindomo. Mindomo is one of digital mind map which contribute to produce mind mapping during offline mode with some easy supporting features.

3. Material Development

Definition of material development is an effort to create innovative material which is not only with appropriate students' and teachers' need but also with suitable learning objectives and syllabus attention.²³ In this research, material development means pre-service teachers' work in considering and creating appropriate learning teaching materials which in order to practice during learning teaching process successfully.

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²² Dipak Bhattacharya & Ramakanta Mohalik. Digital Mind Mapping Software: A New Horizon in the Modern Teaching Learning Strategy. (Journal of Advances in Education and Philosophy; 2020) p. 401.

²³ Kathleen Graves, Shisheng Xu. Designing language courses: A guide for teachers (No. 428 G7) (Boston, MA: Heinle & Heinle; 2000) p.156

CHAPTER II

REVIEW OF RELATED LITERATURE

This chapter presents supporting theories of this study. There consist of two sub-chapters, literature review and previous relevant studies. These are dealing with implementing mind mapping online platforms and developing learning teaching materials in teaching practice.

A. Literature Review

1. The Role of Technology in Pre-service Teacher Program

Pre-service teacher is a student of an education university who has the opportunity to practice teaching before going through performing in a real field. Bransford et al in Amanda et al point out that the meaning of pre-service teacher program is a program in higher education which aims to contribute to inventing the quality of teacher preparation dealing with learning teaching practices that will be implemented to fulfill teaching profession requirements.²⁴ Ali & Ahmad stated that the competency of teachers in modifying the current education movement is important to improve pedagogical education.²⁵ To modify teaching education through

²⁴ Amanda G Mergler., & Rebecca Spooner-Lane. What pre-service teacher need to know to be effective at values-based education (Australian Journal of Teacher Education; 2012) p.66.

²⁵ Afzaal, Ali & Israr, Ahmad. Key factors for determining students' satisfaction in distance learning courses: A study of Allama Iqbal Open University (Contemporary Educational Technology; 2011) p.129.

the existing technologies when there are suitable and appropriate training is provided during the pre-service teacher program.²⁶

To lead students in high learning activities, pre-service teachers should have to be able to provide interesting material which enhances the students to interact with other students in class. Based on Lea et al statement that the principles of high activities refer to higher level of activeness of the students, bring up deep learning and comprehending, increase students' responsibility, improve students' independent learning, independence between teacher and students, difference between teacher and students are mutual, and both teacher and learners reflexive approach to the pedagogical process.²⁷ In other words, pre-service teachers should provide meaningful learning materials to make interactive activities.

Nowadays, the role of technology can facilitate pre-service teachers to prepare meaningful materials in a classroom.²⁸ It is because the ease of accessing and discovering up-to-date information is faster than before.²⁹ This can encourage pre-service teachers to use technology for creating innovative learning materials by choosing appropriate technology.

²⁶ Adedaja, G., & Abimbade, Oluwadara. Pre-service teachers' ease of use and intention to use selected e-learning technologies in designing instruction (*American Journal of Educational Research* 3(10); 2015) p.1320.

²⁷ Susan, J Lea., David, Stephenson., & Juliette, Troy. Higher education students' attitudes to student-centered learning: beyond'educational bulimia'? (*Studies in higher education*, 28(3); 2003) p.322.

²⁸ Judith J. S., & H. Carol G. Pre-service teachers use e-learning technologies to enhance their learning (*Journal of Information Technology Education: Research* 12(1); 2013) p.121. See also Asli, Saylan., Nagihan, Tanik Onal., & Nezh, Onal. "Using Technology in Education from the Pre-Service Science and Mathematics Teachers' Perspectives" (*International Education Studies* 11(10); 2018) p.37.

²⁹ Mohamed, Chaib., & Ann-Katrin Svensson. *ICT in Teacher Education: Challenging Prospects* (Jonkoping University Press/Encell; 2005) p.239.

2. Mind Mapping Online Platform

This point discusses about detail information of mind mapping online platform. This begin with meaning and kind of mind mapping online platforms. Thereafter, this point also reviews procedure in creating mind mapping and advantage of using mind mapping online platform in learning.

a. Definition of Mind Mapping Online Platforms

Buzan stated that Mind mapping is a simple tool to discover information and ideas through creativity brainstorming in written form. Means that, mind mapping contributes to arranging the thoughts easily.³⁰ It is because the mind mapping activates and encourages the brain to focus on the topic. According to Michael Buzan identified that mind mapping can help to illustrate and gather the information and ideas in order to do comparisons of them. In other words, mind mapping has contributed to stimulate the brain in describing branches of information or ideas.

In this digital era, many platforms are accessible and have a big contribution for education. Xu et al defined that digital platform is “a set of subsystems and interfaces that form a common structure for/from which derivative applications can be developed and distributed”.³¹ This definitely also helps educators to increase their ability in learning

³⁰ Tony, Buzan. *Buku Pintar Mind Map* (Jakarta: PT. Gramedia; 2005) p. 9.

³¹ Tony, Buzan. *Buku Pintar Mind Map* (Jakarta: PT. Gramedia; 2005) p. 3.

teaching design. Online platforms which are suitable for learning are social media platforms. It has the positive impact for increasing students' motivation and effectiveness of students' learning.³² These social media platforms have contributed to facilitate the students' communication practice in forum or discussion activity during the learning teaching process.³³ Other examples of online platforms for learning which able operate in cross-platforms, windows, OS X, Linux, Web Application³⁴. This online platform provides features that can help to create engaging and informative mind maps easily. For example, charts, diagrams, graphs, and other similar structures.

b. Kind of Mind Mapping Online Platforms

In this modern era mind mapping online platforms have been used to help educators in learning teaching in venal or open version. These digital platforms are available to desktop and smartphone. The following brief explanations are about some kind of online mind

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³² Abdulvahit Cakir., & Cagla, Atmaca. Pre-service teacher perceptions about the use of Facebook in English language teaching (Digital Culture & Education, 7(2); 2015) p.118.

See also, Muhammad, Luthfi., Wibowo, Heru P., & Jan, Wantoro. Pre-service Student Teachers' Perception of Using Google Classroom in A Blended Course (Humanities & Social Sciences Reviews 7(2); 2019) p. 367.

³³ Abdulvahit Cakir., & Cagla, Atmaca. Pre-service teacher perceptions about the use of Facebook in English language teaching (Digital Culture & Education, 7(2); 2015) p.127.

³⁴ Petr, K., Josef, P., Petr, H, Effective Mind Maps in Learning. Acta Informatica Pragensi (Czech: Czech University of Life Sciences Prague; 2014) p. 249.

Ayoub, Salim Al-Badwoi. Using e-mind mapping in learning at IBRI college of applied sciences (Global Journal of Computer Science and Technology; 2015) p.4.

mapping platforms based on Dipak Bhattacharya & Ramakanta Mohalik statement³⁵.

1. Coggle

This online mind mapping is a commercial mind mapping which can be accessed in a free version for trial. It produces mind maps in various forms such as Doc, PDF, JPEG, link, etc. that can export during online or offline mode. Users can utilize this commercial mind mapping media by using desktop and smartphone. Coggle allow users to create mind mapping manually because this media has not layout of brunches or diagram to modify. This digital mind map was invented by three graduates of Cambridge University in 2013. They are James Crosby, James Osborne, and John Pritchard.

2. SmartDraw

SmartDraw is a mind mapping tool to develop and construct charts and maps for free and venal version. This tool can be run easily on desktop or smartphone with more than 4000 different diagram templates. This mind mapping online platform has several features such as symbols, colors, and even user can modify existing templates. Users can catch and involve additional features by

³⁵ Dipak Bhattacharya & Ramakanta Mohalik. Digital Mind Mapping Software: A New Horizon in the Modern TeachingLearning Strategy. (Journal of Advances in Education and Philosophy; 2020) p. 401-405.

purchasing first. This media is possible to import in PDF and PNG form during online utilization. SmartDraw was released in 1994.

3. XMind

This is available to operate in iPhone, iPad, and android which can access free and commercial. It has features to generate ideas in various brunch models. Such as tree maps, fish bone maps, cards, and so on. Users can use colors, import images, size, lines, and shapes for modifying mind mapping. Furthermore, XMind offers to export product in PDF and PNG form by using online mode. This online mind mapping was established in 2007.

4. Edraw Max

This is one kind of free mind mapping online platform which can present interesting mind maps through using the features easily.

It enables generating ideas by coloring, edit and insert symbols, and providing links. Here users can involve 280 types of diagrams and upload the products in offline mode. Moreover, Edraw let users to export mind mapping in some forms in online mode for instance, Word, PowerPoint, PDF, and SHV or EPS. This mind mapping online platform has existed since 2019.

5. LucidChart

LucidChart is a media which can offer real-time collaboration to revise existing document, draw, share charts and

diagrams in free and paid subscriptions. This mind map has hundreds of templates and examples. This digital mind map helps users to attach and generate live information to the mind map automatically by revising existing document and templates; and adjusting shapes and colors. LucidChart was released in 2008. This mind map can export in document, PDF, and Link by connecting to internet. Lucid Chart can operate in desktop and smartphone.

6. Microsoft Visio

It is a flowchart maker and diagramming media which was released by Visio Corporation in 2000. This kind of platform can help users to create diagrams in simple or complicated ways through using various templates and layouts. Microsoft Visio has some features such as size and shapes. This platform can create mind mapping by using desktop.

7. Mind42

Mind42 is a web-based media for free mind maps. It is because users will find and use layout or template freely but allow advertisement in it. This online mind map allows to import pictures from another site and URL links. Furthermore, users can involve symbols and icons to modify mind mapping creatively. By using this mind map, users can share visual ideas and products with many people worldwide.

8. Mindjet MindManager

Mindjet is a commercial mind mapping which provides the features to visualize and organize the thoughts or information easily, effectively, and efficiently for brainstorming, managing, and planning projects by involving various template of brunches. Here, users can add links, images, and notes. Mindjet MindManager offers to export product in Doc, Power Point, PDF, Image, Excel, and zip form. This mind map was released in 1998 and can access stabilization for Windows in 2016.

9. MindMapper

It is an interactive online mind mapping media for commercial version. In 2016 this digital mind map was stabilized for Windows. This commercial tool is used to visualize and organize ideas by adding clip art, shapes, and links. Here users can create effectively through using layouts and templates that have been provided in it. The product of MindMapper is able to export in Doc, Power Point, and PDF form.

10. MindMeister

It is a platform for imagining, communicating, and interpreting ideas. This commercial digital platform provides a chance for the user to create or design a mind map by using icons, colors, notes, links, attachment, mind maps' style and themes. These features will be provided after upgrading to Personal and Pro level.

Mindmeister has a big contribution to several activities. For instance, brainstorming, recording, generating schedules and online activities. This is one of real-time collaborative media for operating in desktop and smartphone. It is because there is real interaction through integrating the internet, such as exchanging information, solving problem and so on.

11. Mindomo

It is a digital mind map which develops information analysis, description and comprehension. This is because Mindomo has supporting features other than multiple layouts for example, icons, colors shapes, mind maps' styles and themes, notes, link, file attachments (Doc, PDF, Power Point, Video, Image), multi-level numeration, and spell search. The icons, colors shapes, mind maps' styles and themes features are potential to produce attractive mind maps. Basically, the icons refer to represent particular symbols or emoticons and colors shapes possible to enhance the visual representation and organization of ideas. This digital mind map offers mind maps' style and themes with interesting colors to adjust borders and shapes of branches itself. The helpful features also present in Mindomo are likely to insert notes, link, and file attachment for additional information. Mindomo helps users easier to produce mind mapping in desktop or smartphone and export it in

Image and PDF form during offline mode. This online mind map was released in 2007.

12.TheBrain

It is a digital tool for the development of mind maps by connecting thoughts. With TheBrain, users can import the ideas from web pages, documents, images, notes, and so on instantly and export mind mapping in text form. Furthermore, users can upload product on cloud in online mode. This free and venal media is available in Windows, web browser, and mobile devices.

13.Visual Mind

Visual Mind is a commercial mind mapping online platform that ideal for organizing, brainstorming, mind mapping, and so on by using desktop. This mind mapping helps users to organize thoughts, information, plans, and knowledge by using the features in it. For example, allows users to insert images, symbols, and links. Visual Mind allow users to import various format files such as Word, PDF, PPT, txt, and so on. Users also can export in Power Point, Document, and PDF form. This digital mind map was developed by Mind Technologies in 2007.

14. Mind Genius

MindGenius is a commercial platform for designing mind mapping in real-time activities. MindGenius contributes to gather

and reveal mind map which users can definitely involve them into realistic projects and tasks. Here, users can use the different documents in a word form, images form, and even mind mapping products in their library or history of products to organize thoughts in a creative and engaging way. This platform includes a number of visual brunches that allow users to develop and implement ideas faster than a blank canvas. Furthermore, Mind Genius provides users' opportunity to export in various forms by using desktop. For instance, Word, Power Point, Excel, Image, PDF, and Link easily.

The list of mind mapping online platforms above is possible to operate by using desktop and smartphone in application version. These digital media have many features for supporting the users to generate their thoughts. However, there are amount of mind mapping online platforms that are demand to be purchased such as Coggle, SmartDraw, Mindjet MindManager, MindMapper, MindMeister, Visual Mind, and MindGenius. The following explanation provide the similar and differentiate of each commercial mind mapping digital platforms.

Coggle and MindGenius have similar premier features that distinguished to others commercial mind mapping online platform such as history of mind mapping that users have already created and also able to import pictures on the devices. This can help users to find, remind, and modify their products easily. Furthermore, by using Coggle and MindGenius users can export mind mapping through several form. For

instance, Word, PDF, Image, and Link. On the other hand, these two media have the comparison features. Coggle only can import images while Mindjet MindManager can simply import images and documents in the worksheet. Moreover, Coggle gives users' opportunity to generate the ideas manually rather than provides diagram models as a feature on MindGenius. However, Coggle is more flexible to operate in two devices rather than MindGenius that only can run on desktop.

Other commercial mind mapping online platforms are SmartDraw, Mindjet MindManager, and MindMeister which have similar features like adjust the color of brunches and add hyperlink. This can help users to think creativity and provide idea from many sources clearly. Moreover, these media are possible to operate in two devices either desktop or smartphone. Thus, users are definitely access these mind map digital platform wherever and whenever. On the other hand, these three commercial mind mapping have difference features. Those are about layout templates of diagram and export form of product. SmartDraw, Mindjet MindManager, and MindMeister offer various diagram templates. Furthermore, exporting is the last step in creating mind map and these three venal mind mapping platforms have different ability to export in various form. SmartDraw only can export the product to PDF and document form while Mindjet MindManager and MindMeister can export to document, PDF, PPT, Images and ZIP form.

However, in using MindMeister users should upgrade to premium version to obtain various templates and export in various forms.

The last two commercial mind mapping online platforms are namely MindMapper and Visual Mind that contribute to produce and modify mind mapping by adding clipart and symbols. There are a lot of clipart and symbols freely to find and insert in order to make clearly thoughts. Furthermore, MindMapper and Visual Mind provides various layout template that easy to utilize. Meanwhile, layout templates in Visual Mind are from mind mapping's feature on Microsoft Office. Moreover, by implementing these media users can transfer the product to several forms such as Word, PDF, and Power Point form. However, these two mind mapping platforms are lack in flexibility access because the users limit to operate by using their smartphones.

Other than commercial mind mapping online platforms, Dipak Battcharya and Mohalik Ramakanta provide additional mind mapping online platform which is in free version. There are XMind, Edraw Max, LucidChart, Mind42, Mindomo, TheBrain, Microsoft Visio. These free mind mapping online platforms can easily operate in two devices except Microsoft Visio which only can access in desktop. Most of them have similar features but undoubtedly, they have premier features that become distinguish between others. This will clarify as follows.

LucidChart and TheBrain are potential free mind mapping online platforms for generating ideas. These media are possible to practice easily in desktop or smartphone. Moreover, these two mind mapping online platforms offer features to import documents on devices and allow to modify them easily. On the other hand, LucidChart and TheBrain provide comparison in two aspects. There are about features and export forms. The additional features of LucidChart offer the users to insert and adjust shapes, colors, and templates of diagram while TheBrain provides additional features to import image, link, and note. In exporting product, users of LucidChart can simply export mind mapping in PDF and Word during online utilization. Meanwhile, TheBrain only admit users to export in txt form which consist of outline text of mind mapping.

Other free mind mapping online platforms are XMind and Microsoft Visio that let users to adjust size and shapes during creating mind mapping. Thereafter, XMind and Microsoft Visio simply utilize various templates to brunch the thoughts and import images. However, these free mind mapping online platforms have distinguish parts such as modifying, mode in exporting product and practicing tools. By using XMind, users can insert colors, and lines while Microsoft Visio lack of these features which is for modifying mind mapping. Second part is about exporting product mode. Essentially, these media can export similar forms for instance, in PDF and Image form but in XMind, users

should connect to online mode during exporting product. Last difference part between XMind and Microsoft Visio is about practicing tools to operate these media. XMind's users have opportunity to practice by using desktop or smartphone. Meanwhile, users of Microsoft Visio only allow to produce mind mapping by operating desktop.

The last three free mind mapping online platforms are Edraw Max, Mind42 which allowed advertisement, and Mindomo. These media provide numerous of templates. Furthermore, these free media offer users easily to upload and reach the mind mapping that have already made before. On the other hand, there are the distinguish between them that is about additional features, exporting mode, and practicing devices. Adjusting mind mapping demand to several features in order to visualize creatively. For instance, colors and symbols in Edraw Max; symbols and icons in Mind42; and icons, colors, and shapes in Mindomo. Secondly, these three free mind mapping have different mode of exporting product. Mind42 is potential to exporting offline mind mapping only in PDF form. Edraw Max and Mindomo are possible to export in PDF and Image form but in Edraw Max, users should be exporting mind mapping in online mode.

To sum up, it means that both commercial and free mind mapping online platforms have some similar and different features. Both media provide several helpful and easier utilize the features for generating

ideas. However, compare with commercial mind mapping online platforms, free mind mapping online platforms have more powerful features to contribute either in modifying and exporting mind mapping or operating the media itself. Here, in this study, Mindomo takes into consideration media that provide the greatest features and allow to involve freely in offline mode.

c. Procedure in Creating Mind Mapping

Creating mind mapping is an activity that needs the creativity of users in visualizing their ideas or thoughts, and this undeniably occurs when using online mind mapping. Bhattacharya stated that five procedures in creating online mind mapping will be refined as follows.

1. Begin with a blank space. Usually online mind mapping reveals blank space before writing words for brainstorming themes in the middle.
2. Fill in the central topic. Write ideas that become a brainstorming theme.
3. Connected the ideas. Here write ideas which become the main topic and subtopic. This should be related to each other.
4. Illustrate lines. Adjust the line and determine correlate mind topic and subtopic. Add additionally information that can be passable to support sub-topic.

5. Organize and symbolize the ideas visually. Use the tools menu to adjust line and shape. For instance, colors and size. To modify line and shape can insert icons and pictures, etc.³⁶

An additionally Bhattcharya's statement is these steps are not the "one-way" for producing mind mapping. Means, it can be out of turn or only few of these steps which users can do. This is because dealing with creators' need and the features of online mind mapping itself.

d. Advantage of Using Mind Mapping Online Platforms in Learning

Mind mapping online platform has contributed in learning teaching, either for pre-class usage or in-class usage. Based on Dipak Bhattcharya & Ramakanta Mohalik that mind mapping online platform potentials to decrease paper-based work and avoid the time of educators during preparing, delivering; and generating independent's student thinking in lessons.³⁷ These will be clarified as follows.

- Preparing Lesson

Teaching preparation is a crucial process for pre-service teacher in practicing teaching. Here, pre-service teachers have a lot of ideas about plans which can formulate dozens of notes. By using mind mapping online platforms, pre-service teacher can decrease the

³⁶ Dipak Bhattcharya & Ramakanta Mohalik. Digital Mind Mapping Software: A New Horizon in the Modern Teaching Learning Strategy. (Journal of Advances in Education and Philosophy; 2020) p. 403.

³⁷ Dipak Bhattcharya & Ramakanta Mohalik. Digital Mind Mapping Software: A New Horizon in the Modern Teaching Learning Strategy. (Journal of Advances in Education and Philosophy; 2020) p. 405.

amount of teaching planning notes into visual sign, concise, and clear summary. Compared with paper work, mind mapping online platforms' advantage lies in its effectiveness of drawing lines and shapes. Inside the shape automatically provides a text box which can fill the ideas about topic and learning materials.

- Delivering Lesson

Well delivered lesson is the primary pre-service teacher skill during teaching practice. Pre-service teachers' insights influence their classroom teaching and his/her students during learning teaching. Mind mapping online platforms are ideal for showing complicated ideas through providing an interesting picture and appropriate description in order to catch the students' focus in the classroom. Furthermore, through using mind mapping online platforms to deliver curiosity ideas can keep students engaged and amazed. It because pre-service teacher is able to explain the material in sequence. Moreover, using digital mind mapping contributes in improving class activities such as brainstorming in order to increase students' critical thinking, creative thinking, focus on the content etc.

- Encouraging the Students' Independent Learning

Referring to the movement of education today that is encouraging students-centered learning which can bring up students' participation during learning teaching. By using mind mapping platforms, pre-service teachers can provide interactive

brainstorming activity and then continuity to encourage students to do discussion with others in the classroom. Meaning that, mind mapping can contribute to increasing self-learning of students by writing down, clarification, and learning.

3. Material Development

The following topic will be explained about description, principle, and advantages on developing material.

a. Definition of Material Development

Providing materials are pivotal efforts for facilitating and supporting educators during teaching practice. Cunnings points out the role of materials in language teaching, providing resources for delivering materials, doing learners' practice interaction activities, doing innovative learners' activities on grammar, vocabulary, and pronunciation, and inexperienced teachers' support.³⁸ Brian clarified that "material development refers to anything which is done by writers, teachers, or learners to provide sources of language input and to exploit those sources in ways which maximize the likelihood of intake".³⁹ Means that the classroom component includes teacher or learner can generate information about their experience as the way to plan language learning teaching material. The information might take from their opinion, belief, and necessity to support their learning teaching.

³⁸ Jack, C. Richards. Curriculum Development in Language Teaching (Ernst Klett Sprachen; 2001) p.251.

³⁹ Brian, Tomlinson. Developing materials for language teaching (Ed) (A&C Black; 2014) p.479.

Many optional materials are available for educators to choose and apply in a classroom. Related to that, materials can be classified into several types including printed, audio, audio visual, authentic materials, and created materials. According to Brian stated that materials for learning of language can be presented in printed form, live performance or display or traditional material, cassette, CD-ROM, DVD, or the internet.⁴⁰ These materials can supply and stimulate students' experience of using language. Besides, these materials also increase students' insights about their language.

b. Principle of Material Development

Generally, educators tend to focus on need analysis as their starting process to develop learning material. However, the educators should also consider using principle as his/her guidance in developing materials. Brian suggested some primary principles introducing materials development for language teaching.⁴¹ These will be listed as follows.

1. Material should realize impacts, help students to face easiness and increase their confidence.
2. Educator or teacher should consider that his/her teaching is relevant with material and useful material for students.

⁴⁰ Brian, Tomlinson. English Language Learning Materials: A Critical Review (Bloomsbury Publishing; 2008) p.183.

⁴¹ Brian, Tomlinson. English Language Learning Materials: A Critical Review (Bloomsbury Publishing; 2008) p. 263.

3. Materials should involve and ease learner self-investment, provide the learners communicative activities with giving their opportunities to use the target language.
4. Materials should establish positive effects of delayed teaching, different learning styles for students and different students' affective attitudes.
5. Materials should give students a chance to practice barely and replace this with providing chances to acquire their feedback in the beginning of teaching.

Furthermore, Richard stated that in developing learning materials based on curriculum used.⁴² This in order to ensure that students acquire knowledge and capacity based on the aim of learning.⁴³ In addition, Crawford stated that materials definitely refers to the writer's perspective of language and learning and the components in the classroom include teachers and students who will give their opinion based on how suitable they are with their own beliefs and expectations.⁴⁴ This because the result of developing materials as learning sources is not only help the teacher but also the students to

⁴² Jack, C. Richards. *Curriculum Development in Language Teaching*. (Ernst Klett Sprachen; 2001) p.252.

⁴³ Nurhidayati, Nurhidayati., & Siti Kustini. *Pengembangan Bahan Ajar Bahasa Inggris Berbasis Keterampilan Abad 21 pada Perguruan Tinggi Vokasi: Sebuah Kajian Literatur* (Proceeding of National Conference on Asbis 3; 2018) p.421.

⁴⁴ Jane, Crawford. *The role of materials in the language classroom: Finding the balance*. (Methodology in language teaching: An anthology of current practice; 2002) p.28.

learn.⁴⁵ There are several points to be considering in providing effective materials that is suitable for EFL learners, such as:

1. Language is functional and should not be isolated; it demands to be realistic and authentic, increasing students' occupation in deliberate use of language.
2. Endeavor to lend an audio-visual strand for the material in the classroom
3. Materials should be adaptable enough to provide individual and contextual differences in usage.

Based on Graves' statement that "materials development means creating, choosing or adapting...". Meaning that adaptation activity is one of an educator's effort in developing learning materials.⁴⁶ To adapt materials demand to make considerations in order to develop materials successfully which is according to the students' needs, learning goals and objectives, and syllabus focus. The following list is offered by Graves as considerations in developing materials.

1. Learners
 - a. Make them relevant to their experience and background of knowledge.

⁴⁵ M, Syahran Jailani., & Abdul Hamid. Pengembangan sumber belajar berbasis karakter peserta didik (ikhtiar optimalisasi proses pembelajaran pendidikan agama islam (PAI)) (Jurnal Pendidikan Islam 10(2); 2016) p. 182-183.

⁴⁶ Kathleen Graves, Shisheng Xu. Designing language courses: A guide for teachers (No. 428 G7) (Boston, MA: Heinle & Heinle; 2000) p.150.

- b. Make relevant to their target needs. For example, by brainstorming and answering question sessions.
- c. Associate them with their emotional needs. For instance, receiving, responding, appreciating, organizing, and forming students' character.

2. Training

- a. Participate in discovery, problem solving, analysis. This is crucial to engage their confidence to use language and then build up their language skills.
- b. Acquire particular skills and strategies by collecting specific information from what the students have watched. This in order to make the students able to learn in a particular situation.

3. Language

- a. Target related aspects. For example, grammar, functions, vocabulary, and so on.
- b. Incorporate speaking, listening, reading, and writing skills.
- c. Practice or comprehend authentic texts by analyzing how to write text in a particular context in real life.

4. Social context

- a. Lend intercultural focus by introducing your own culture to increase the students' confidence and knowledge about their culture.

- b. Develop critical social awareness by stimulating how to respect, know whether these rights are issues or not, and so on. The aim of this consideration is to achieve target culture.

5. Activity/ Assignment Form

- a. Desire for authentic assignments
- b. Variety of roles and groupings
- c. Variety of activities and aims

6. Materials

- a. Authentic which means materials that are related to real life. Such as websites and other digital information both written and spoken.
- b. A range of forms (print, visuals, audio, etc.)⁴⁷

c. Advantages of Developing Material

By designing the materials effectively, the teachers can face some crucial advantages.⁴⁸ These will be explained as follows.

1. Contextualization

Many materials that support the learning teaching process but dissonant concert of educational context. Such as characteristics of learners and acculturation of learners. Thus, educators should develop learning materials in order to manage a flexible learning environment based on educational circumstances.

⁴⁷ Kathleen Graves, Shisheng Xu. Designing language courses: A guide for teachers (No. 428 G7) (Boston, MA: Heinle & Heinle; 2000) p. 156.

⁴⁸ Jocelyn, Howard & Jae, Major. Guidelines for designing effective English language teaching materials (The TESOLANZ Journal; 2004) p. 101-102.

2. Individual needs

To develop materials, educators should consider individual learner's needs and experiences. This is dealing with various learners' background knowledge for instance their acquisition and culture. It can help educators to design and organize materials and activities for his/her lesson.

3. Personalization

The aim of the learning teaching process is undeniable which expects students to be active in every single activity. Thus, developing materials is a possible way to provide materials which contribute to increasing students' motivation and engagement in learning.

4. Timelines

As an educator, materials not only consider the aim but also consider up-to-date content in order to build up students' interest topics and tasks.

4. Adapting Material

In this part reveals the clarity of adapting material that also offers suggestion. Moreover, this part provides factors of adapting material which depends to seven reasons and the last is five techniques of adapting material. This will be defined as follows.

a. Definition of Adapting Material

As a teacher definitely attempts to achieve a particular goal of a lesson successfully, adapting materials is not the exception. By adapting materials, the teacher can modify the content and activities in published materials to be more accessible and suitable for students' needs. Duddley-Evans and St. John in Richards state characteristics of a good provider has abilities to "select appropriately from what is available, be creative with what is available, modify activities to suit learners' needs, supplement by providing extra activities (and extra input)"⁴⁹

b. Factors of Adapting Material

There are a number of factors in adapting material in order to provide suitable material for students, teachers, and learning teaching aims. Carlos Islam and Chris Mares in Brian viewed that adapting material is need to depend on several reasons as clarified in the following.⁵⁰

1. Methods. It refers to how the material can be easier for the students to understand, for example a task is meaning absence, too complex, and so on.
2. Language content. It is dealing with how to emphasize the material for students to learn. For example, grammar, pronunciation, etc.
3. Subject matter. It is about how the material can increase students' curiosity or not.

⁴⁹ Jack, C. Richards. Curriculum Development in Language Teaching. (Ernst Klett Sprachen; 2001) p.260.

⁵⁰ Brian, Tomlison. Developing Materials for Language Teaching. (Bloomsbury Publishing; 2014) p. 88.

4. Balance of skills. It emphasizes the material on language skills. such as listening, reading, speaking, and writing
5. Progression and grading. Language element's arrangement needs to be suitable for syllabus.
6. Cultural content. Referring to the students' culture, it needs to be replaced or misplaced.
7. Image. It is about the appearance of the published materials, for example the visual quality, and so on.

c. Techniques of Adapting Material

After knowing the reasons for adapting material, the educators should also know techniques when adapting materials. According to McDonough and Shaw and Cunningsworth statement in Brian that adapting material should need these five techniques, such as.⁵¹

1. Adding

In adding materials, the teachers are able to choose one of two techniques, there are extending or expanding techniques. Extending technique can be implemented when the teachers need to add tasks in similar language content. For example, a grammar task in published material which asks the students to make ten sentences and the teacher may emphasize this topic for increasing students' language skill, such as in expressing opinion. Thus, the teachers adapt five additional

⁵¹ Brian, Tomlison. *Developing Materials for Language Teaching*. (Bloomsbury Publishing; 2014) p. 91-92.

expressions to deliver opinion and make the students create more sentences by using those expressions.

Whereas, in expanding technique the teachers have to add expressing opinion in different opinion expressions, for example not only agree but also half agree and disagree opinion expressions. Means that, expanding technique is the teachers' effort to provide more detailed material.

2. Deleting

It is the same with adding technique, the teacher can select one of two different deleting techniques during adapting material. Such as, subtracting and abridging. Subtracting technique is able to be conducted when the teachers determine five sentences as the tasks rather than ten sentences in the published material. While abridging technique the teachers only need to focus on half agree and disagree expression of opinion rather than agree expression of opinion.

3. Simplifying

Simplifying is the teachers' struggle to summarize the words of instructions or complex activities in order to be practicable for the students and the teachers. However, it perhaps can make the words have different meanings.

4. Reordering

In reordering, the teachers formulate a sequence activity. For example, build students' critical thinking by brainstorming before reading. This also may evolve students' understanding of the materials.

5. Replacing Material

Here a teacher is able to determine suitable instructions or activities for achieving the aim of the lesson. Commonly it is because of inappropriate time-allocation. A teacher may also replace the material content which more reflects real-life activity in order to provide more accessible information for students.

5. Learning Teaching Process

Most of country that takes English for foreign language rely on English material for education area which offers abundant knowledge of language skills to deliver during learning teaching process. Learning teaching process demand to intertwine two aspects such as teach and learn.⁵² Means that educators not only rely on teaching the learners but also learn on the previous teaching process that becomes a reflection.

During learning teaching process, educators undeniable demand to lesson plan for guiding activities. Based on Decree number 22 of Ministry of

⁵² Jim, Scrivener. Learning Teaching: The Essential Guide to English Language Teaching [Third Edition]. (MacMillan; 2011) p.380.

Education and Culture that lesson plan provides three stages⁵³. They are namely pre-, while, and post activity. These will be explained detail as follows.

- a. Pre-activity is the beginning activities of lesson that educators should stimulate learners' psyche and physique to learn actively; motivate learners based on their characters and levels; remind previous lesson and connect to newest material that will learn; clarify the aim of lesson; and provide explanation about the number of materials and activities based on syllabus.
- b. While-activity contains the main activities that educators are able to definitely implement teaching paradigm, teaching method, learning teaching media, and various source of material related to learners' characteristic and subject learning. Applicable teaching approaches are possible to apply in order to unearth learners' proficiency which can apply realm of competencies. Such as attitude, knowledge, and skill. These three aspects have different features of learning target. Firstly, teachers are possible to provide attitude aspect in learning by utilizing some verbs such as, accept, conduct, appreciate, internalize, and practice. Secondly, knowledge aspect can be required by using several verbs for example, remember, understand, apply, analyze, and evaluate. Third aspect also can offer domain competency during learning is skill.

⁵³ The Ministry of Education and Culture RI. Decree number 22 about standard of process (Jakarta: The Ministry of Education and Culture RI; 2016) p.11-12.

Skill aspect can contribute in lesson plan by applying one of various verbs for instance, observe, ask, attempt, interpret, serve, and create.

- c. Post-activity consists of reflection activities that potential to accomplish in individual or group. These are as an evaluation of all tasks and projects which can reach useful outcomes for further practice. In this phase, educators have opportunity to ask and answer questions of learners for indicating learners' comprehension. Furthermore, educators allow to present individual or group assignments and close the lesson by notifying the teaching activities of the next meeting.

B. Previous Relevant Studies

The following researchers have conducted into nearly the same topic as this study, there are:

Previous researcher was using mind maps for learning English grammar which will be done in 2019. This research was written by Tran Thi Yen to discover the efficacy of mind mapping technique for grade-10 students. She had analyzed students' reaction and attitude in learning grammar. This research used a mixed method by doing observations to discover the teachers' technique in teaching grammar and distributing questionnaires about the problem in studying grammar. The result of this study showed that mind maps could increase students' interest and motivation in grammar lessons. Furthermore,

students were also showing the improvement questionnaire score from pre-test and post-test.

The next previous study was written by Xiaojun Wang and Jiri Dostal which was entitled “Using a Mind Map to Learn English Vocabulary”. This study was done in 2018. This study attempted to encourage EFL teachers and students to incorporate the Mind Map as an effective strategy during learning teaching practices of English vocabulary learning. This study adopted a qualitative method by providing detailed clarification of mind map’s features and mind map’s possibility in learning teaching processes of English vocabulary. The findings of this study revealed that mind maps have a big contribution in learning process with helpful functions such as, gathering, organizing and managing ideas. Moreover, a mind map is possible to facilitate teachers in conveying, sharing, and communicating to students. It means that a mind map can take into deliberation to create effective learning teaching.

The qualitative research paper which has the title “Collaborative mind mapping to support online discussion in Collaborative mind mapping to support online discussion in teacher education” was written in 2017 by Rosa Cendros Arajuo. This paper’s objective was to explore the use of online collaborative mind mapping activities in a mathematics teacher education program. In this research, she described the roles of online mind maps for forum activities after threading forums and providing topics of collaborative mind maps. Furthermore, this implementation from experiences of teachers’ candidates in face-to-face sessions, online activities, and practicum

developments. Means that the implementation of collaborative mind mapping online can increase students' activities during discussion sessions in while-activity.

The research by the title "Effective Mind Maps in E-Learning" written by Petr Kedaj, Josef Pavlíček, and Petr Hanzlík in 2014. The research attempts to investigate the effectiveness of mind map online platforms as a solution in e-learning courses problem. The result of this study described that students' examination scores were greater than before. It was because the researchers successfully in providing material used Effective Mind Map tool and Moodle as the media.

The study "Meningkatkan Aktivitas Dan Hasil Belajar Mahasiswa Menggunakan Mind Map Berbantuan E-Learning" by Widiyasari in 2017 conducted Classroom Action Research (CCAR). This study attempt to discover the capacity of mathematics education department students in using Mind Mapping with Edmodo as a Learning Management System (LMS) and showed that students accomplished positive activities such as focus on lecturer's explanations, asking and answering questions, presenting their mind mapping, and making conclusion of what they have learnt.

Another study that used a mind mapping online platform in learning teaching was written by Abu Bakar Sidik. This study was entitled "Pengembangan Media Mindjet Mindmanager Pada Pembelajaran Fikih Materi Shalat di Kelas VII Mts Muhammadiyah Sulit Air Kab. Solok". His study aimed to create and apply Mindjet Mindmanager media on Fikih

learning, especially about Shalat. The method of his study was the Research and Development (R&D) method and he only conducted three models namely Define, Design, and Development. In conclusion, Sidik found positive responses from teachers which were about their interest in using Mindjet Mindmanager. Furthermore, students were also shown enthusiasm in the learning teaching process because the media was exciting and created an enjoyable learning.

The mind mapping online platforms have already been conducted by previous studies, exploring the use of Mindomo mind mapping online platforms based on pre-service teachers' experience to develop English materials has not been conducted yet. Many previous studies only focus on providing students' impact of implementation of online mind mapping such as increase students' communication skill and students' enthusiasm during learning teaching. Researcher argues that in developing materials demand to consider appropriate factors. Moreover, researcher assumes that mind mapping is potential media to practice during learning teaching activities based on curriculum which demand to integrating knowledge aspect. Thus, this study investigates pre-service teachers who have been using Mindomo mind mapping online platform descriptively with the aim to develop English material and reveal valuable insights for educators and further researchers.

CHAPTER III

RESEARCH METHOD

This chapter reveals and deliberates several strands of research methods in this study. There are research design, research setting, data and source of data, research instrument, data collection technique, data analysis technique, and trustworthiness data.

A. Research Design

The purpose of this study is to explore the experiences of pre-service teachers in choosing and employing mind mapping online platforms to apply in learning teaching practice. Qualitative research method adopted for this research. Creswell stated that qualitative is a procedure to identify human problems by recording detailed views of informants and interpreting the meaning.⁵⁴ Descriptive qualitative is a suitable approach to describe and analyze the pre-service teachers' experiences in selecting and using mind mapping online platforms to develop learning material. According to several qualitative theories which address various ways to collect the data such as questionnaire, interview guideline, observation guideline, document and so on. By referring to the objective, the researcher collected the data by interviewing pre-service teachers to discover deep information about developing learning material and by observing pre-service teachers' lesson plan during implementing Mindomo mind mapping online platforms.

⁵⁴ John, W. Creswell. Educational Research: Planning, conducting, and Evaluating Quantitative and Qualitative Research (Forth Edition) (Boston: Pearson Education; 2012) p.626.

B. Research Setting

This study was conducted at the English Language Education Department of State Islamic University of Sunan Ampel Surabaya. This major has a program that takes a potential part to collect the data about pre-service teachers' experience who have already learnt and used a mind mapping online platform for developing material. Thus, it potentials to do deep exploration about pre-service teachers' experience in using Mindomo mind mapping online platform for developing learning materials which is for learning teaching process.

C. Data and Source of Data

According to the research question: how do pre-service teachers' experience in developing English materials by using Mindomo for learning teaching practice? The researcher collects the data to answer this question about pre-service teachers' experience in implementing mind mapping online platforms for developing English material for utilization during the learning teaching process. Furthermore, the source of data for solving research questions took two pre-service teachers of junior high school that they have taught English. These participants are chosen by using a purposive sampling method. Purposive sampling means "the researcher decides what needs to be known and sets out to find people who can and are willing to provide the information by

virtue of knowledge or experience.”⁵⁵ Thus, these pre-service teachers are taken because they have practiced using Mindomo mind mapping online platforms to develop English materials for learning teaching process.

D. Research Instruments

The meaning of a research instrument is a written guideline for interview, observation, and list of questions that have prepared to discover abundant information. The researcher conducted an interview. Undoubtedly, the researcher demanded interview guidelines and audio recordings. Furthermore, the researcher also demanded an observation checklist of pre-service teachers' lesson plans.

1. Interview Guideline

Interview guideline consists of seven open-ended questions that are addressed to pre-service teachers. These questions improved based on mind mapping theory of Dipak Bhattcarya and Ramakhanta Mohalik; and development material theory of Kathleen Graves, Jocelyn Howard & Jae Major and Brian Tomlison. There are two aspects obscure on these questions such as, two questions are about role of mind mapping during learning teaching process, and five questions are about the way in formulating material. This instrument has been validated by a practitioner who is expert in teaching practice technology media. This research used

⁵⁵ Ilker Etikan, Sulaiman Abubakar Musa, & Rukayya Sunusi Alkassim. Comparison of Convenience Sampling and Purposive Sampling (American Journal of Theoretical and Applied Statistic 5(1); 2016) p.2.

semi-structured interviews. Semi-structured interview here began with the issue of core interview guidelines and the sequence of questions are based on the individual interviewee's response and interview process. In other words, the researcher was addressing the questions disarray.⁵⁶

2. Audio Recorded

Referring to the interview guideline that addresses open-ended questions, the researcher demanded to use audio recording. Audio recording is a necessary tool for verification of the data. In audio recordings, the researcher recorded the answers of pre-service teachers about their experience in choosing and using a mind mapping platform for developing learning material. During asking and answering questions, researchers utilized online social media features which namely Voice Notes on WhatsApp to be more efficient and easier to access.

3. Observation Checklist of Pre-service Teachers' Lesson Plan

This instrument contributed to collecting the information about utilization of mind mapping in pre-service teachers' lesson plan with the aim to verify when and how to deliver the materials during the learning teaching process. The researcher adapted the observation checklist by the Ministry of Education and Culture which contains three stages of the learning teaching process. There are pre-activity, while-activity, and post-

⁵⁶ Imami, Nur Rachmawati. Pengumpulan data dalam penelitian kualitatif: wawancara (Jurnal Keperawatan Indonesia 11(1); 2007) p.36.

activity. In this instrument, the researcher provided the feature for determining and checking the pre-service teachers' lesson plan easily.

E. Data Collection Technique

In collecting the data of pre-service teachers' experience implement the mind mapping online platform to develop English material for learning teaching practice, the researcher demanded a day for each participant. The researcher conducted an interview for two pre-service teachers. Here, the researcher interviewed pre-service teachers through WhatsApp after obtaining the permission.

Furthermore, the researcher also used an audio recorder to verify the data from the pre-service teachers' response. The researcher delivered questions by typing and pre-service teachers can use Voice Notes feature on WhatsApp application for answering the questions. This was conducted during an interview for each pre-service teacher.

After the interview section, the researcher directly asked the pre-service teachers' lesson plan for verifying that they have used online mind mapping during learning teaching practice. Here the researcher used an observation checklist which was adapted from the Ministry of Education and Culture and conducted on the same day after the interview segment.

F. Data Analysis Technique

In processing the data analysis, the researcher needs to collect the data by writing a transcription of the interview. Moreover, in the process of data analysis of this study, the researcher used interactive analysis which is a qualitative analysis technique model by Miles & Huberman. This includes three phases; data reduction, data display, and conclusion drawing or verification.

1. Data Reduction

In this phase, all the data collection demands to be reduced in a clear and meaningful way. According to Miles & Huberman that data reduction is defined as the process of choosing, directing, simplifying, conceptualizing, and converting the data.⁵⁷

In reducing data, the researcher chose what strands of the loomed data in the interview transcriptions which cover the objective of this study by selecting sentences and categorizing them. The categories are purpose of Mindomo; factor in developing English material; pre-service teachers' experience in developing materials by using Mindomo mind mapping online platforms. Then, the researcher summarized them all in order to make it easy to analyze the data and continue the next phase.

⁵⁷ Matthew, B. Miles., & A Michael, Huberman. Qualitative data analysis: An expanded sourcebook (Arizona: Sage) p.14.

2. Data Display

The second phase of data analysis, the researcher provided assembly data that has already been cleared, compressed, and is possible to generate the conclusion. Thereafter, the researcher displayed these data for data interpretation about in what experience pre-service teachers implemented Mindomo mind mapping online platforms to develop English material for learning teaching practice. Here, the researcher explored the reason why those sentences included in that categorizes and enhanced the meaning of those sentences based on the theory.

3. Conclusion Drawing or Verification

The third phase is conclusion drawing or verification. This phase, the researcher emphasized how to refer back to the meaning of data in data display and evaluated the implication for research questions.

G. Trustworthiness Data

The researcher has used triangulation strategies to certify data validation. According to Moleong, the meaning of triangulation is a strategy that validates and approves findings by multiple sources and indications.⁵⁸ The researcher assessed numerous sources such as interview guideline and observation checklists of pre-service teachers' lesson plans in order to verify data for the finding of this study.

⁵⁸ J. Lexy, Moleong. *Metode Penelitian Kualitatif* (Bandung: Remaja Rosdakarya; 2009) p. 330

CHAPTER IV

RESEARCH FINDING AND DISCUSSION

In this chapter, the finding and the discussion clarify about pre-service teachers' experience in developing learning teaching materials by implementing mind mapping online platforms. This also reveals the analysis data from collected data and analyzes it by selecting, categorizing, and evaluating based on research questions.

A. Research Finding

Research findings reveal the result of data which the researcher gathered through interviewing pre-service teachers who had experienced in developing English materials. Furthermore, the researcher also gathered the data by observing pre-service teachers' lesson plans in implementing Mindomo during learning teaching process. These two instruments were distributed to two pre-service teachers. To analyze the data, researchers used a semi-structured interview and observation checklist that had been validated. The researcher collected data on 4th - 5th October 2021. Moreover, research findings have two aspects to discuss. The following explanation describes the categorization which becomes data display from interview transcription and observation checklist.

Based on interview and observation, pre-service teachers develop materials and conduct several manners. The result will be explained as follows.

1. Realizing Principle of Material Development by Interview

Referring to the interview revealed that pre-service teachers' demand to realize the principle before starting to develop materials. Here pre-service teachers can focus on considering learning goals about the target language that is grammar and focus syllabus.

Besides, the pre-service teachers realize the positive effects for both class components, either students or teachers. These are dealing with teachers' needs which can achieve learning goals by providing materials based on students' experience and students' needs which can understand the materials easily. After that, pre-service teachers can formulate keywords of mind mapping based on the reason for it.

PT 1. ... *Means that teacher should consider the aims of teaching learning. Do they achieve the learning aim or not? Then I think, they material should be based on students' need. Besides, the material should be based on students' experience. Have they ever got the material or not?* (Pre-service Teacher 1, Question Interview 3)

She also stated,

I take the keywords of topic and sub topic from one of material in students' book, there is "Asking and Giving Opinion" that I have modified from words "Ask and Give Opinion." Because the meaning of those words are similar. This material explains about expression in asking and giving opinion. For each sub topic are presented in sentence of expression of asking and giving opinion. Because the students easier to analyze, easier to differentiate which one sentence to express asking and giving opinion. For example, "if you totally agree with the opinion". (Pre-service Teacher 1, Question Interview 6)

PT 2. *We should consider the purpose of our lesson. Do the material that we going to learn suitable to be applied using mind map online platform. The materials should be based on the students'*

need and should be based on lesson plan that were already made before... (Pre-service Teacher 2, Question Interview 3)

She also stated,

I take the keyword from the grammar materials that including in this Base Competency. There are Article, Singular and Plural, There is There are and anything. But I think that focus on There is and There are but also including Singular and also Plural material. Because the point of defense lies in the use of there is and there are to show something around... (Pre-service Teacher 2, Question interview 6)

2. Determining Technique and Factors in Adapting Materials by Observation

The pre-service teachers reflect technique in adapting materials, especially adding, extending; and deleting, subtracting and abridging. These are undeniable that the pre-service teachers realize some reasons in adapting materials. Pre-service teachers argue some factors in adapting materials. There is language and cultural content which deals with focus materials for learners. Here, pre-service teachers emphasize grammar; those are about expression; and articles and singular-plurals which relate to students' real-life activity.

PT 2. *I think I choose deleting subtracting. Because, I choose most of the conversation is related to the students' real-life context. I mean the conversation can be used in daily conversation of the students. (Pre-service Teacher 1, Question Interview 4)*

PT 3. *First, I think I used the adding one. In this meeting, the teacher focus on the material There is and There are material. Because I have limit time to meet the students, I add more example take from another source like internet for the materials. So that the students have more examples about that topic. And the second is deleting. In this Base Competency, there are many topics that need to be focused, but once I said the limit of the time. I just*

focus on There is and There are materials. Because these materials are taking important part among others... (Pre-service Teacher 2, Question Interview 4)

3. Determining Mind Mapping Online Platform

According to the interview, pre-service teachers mentioned one kind of mind mapping online platform which is Mindomo and has been chosen based on the features and explained benefits of the mind mapping online platform as a consideration.

PT 1. *...So, Mindomo has many features that are easy to adjust. Such as size, font, coloring the branches it should be appropriate in order to easy for the students to understand... size and font should be accessible for students. Moreover, I can choose and the worksheet can be exported into PDF or PNG form... (Pre-service Teacher 1, Question Interview 2)*

She also said,

... I taught students when in online class, I think this is suitable technology media that is easy to deliver material in sequence and achieve the aim of lesson. (Pre-service Teacher 1, Question Interview 3)

PT 2. *When I used Mindomo online mind mapping platform, it's a funny way of learning and also delivering the material. When we and the students enjoying something, we more deeply invested in it and to promote deeper learning. So the students deeply more understand, satisfying in during the learning process. Another the benefits of mind mapping is that it has to create that meaningful engagement during the process of teaching and learning. (Pre-service Teacher 2, Question Interview 2)*

She also said,

I think there are should consider is first Mind Mapping make material more structured... Mind mapping make the material more structured to deliver and also deliver the material. When we have an interesting media, the students will easily to follow the process of learning and make them easy understand about the materials. (Pre-service Teacher 2, Question Interview 3)

Pre-service teachers used Mindomo as a media that has the useful features for providing meaningful materials and engagement. This makes students more understanding and interested in the materials during the learning process. Besides, pre-service teachers clarified the advantages of Mindomo. Pre-service teachers argued that the media should be able to guide the students to follow and understand the materials during online class certainly. Furthermore because of the sequencing materials, it can help pre-service teachers to achieve the learning goals easily.

Thus, the results of the interview showed the kind of mind mapping that pre-service teachers used in online learning is Mindomo. They argued that this media has easy utilization by implementing features of mind mapping online platform itself such as, linking one branch with others by modifying the size, color; regulating text by choosing style of font; and exporting the worksheet. Furthermore, pre-service teachers also discovered the benefits of Mindomo that are about delivering materials structured in order to achieve the aims of the lesson; and contributing in creating meaningful materials to increase students' curiosity and understanding the materials.

4. Integrating Material Form and Supporting Media and Tools

Pre-service teachers experience in integrating materials from the internet and utilizing media for complementing materials that can contribute in developing learning teaching materials such as comic

(visual), audio, internet, and video editor as a tool that is to collect and provide audio-visual material. They argued that these complimentary learning materials are able for pre-service teachers to deliver the materials clearly; and for students to increase their language skill, curiosity, and understanding.

PT 1. *I found the material from the internet in order to the students know more new vocabulary.* (Pre-service Teacher 1, Question Interview 5)

She also said,

I used another media as a brainstorming activity before main activity. The media that I used for brainstorming activity is comic... about asking and giving opinion. Furthermore, I also add audio to make material more interesting and easier to understand... So I collect them become a learning teaching material by using video editor. (Pre-service Teacher 1, Question Interview 7)

PT 2. *I take the source from internet.* (Pre-service teacher 2, Question Interview 5)

She also said,

...the audio in the voice note feature. The reason is because I send the materials is only mind mapping. Then I think it is better to give them an explanation about the materials through an audio. The students could be more understand about the materials that they learn, also the students can listen it repeatedly on the audio if they still don't understand on it. I think it is more suitable for them. Beside I also can explain as I want through the audio or voice note because it's easy to use. (Pre-service Teacher 2, Question Interview 7)

5. Implementing Mindomo during Learning Teaching Process

Researcher also discovered the pre-service teachers' experience in using Mindomo mind mapping online platforms for developing learning teaching materials for learning teaching practice by conducting

observations on the pre-service teachers' lesson plan. This observation consists of three activities of lesson plan with the aim to know that the pre-service teachers delivered the materials during online class. Furthermore, pre-service teachers also provided aspect of knowledge in competency's domain of learning teaching.

Figure 4.1. The First Pre-service Teacher's Lesson Plan

RENCANA PELAKSANAAN PEMBELAJARAN (RPP)	
Nama Madrasah	: MTs Negeri 1 Pasuruan
Kelas/Semester	: VIII/ Ganjil
Mata Pelajaran	: Bahasa Inggris
Tahun Pelajaran	: 2020/2021
Waktu	: 1 JP
A. Tujuan Pembelajaran Target yang diharapkan setelah pembelajaran siswa dapat menganalisis tiga ekspresi meminta dan tiga ekspresi memberi pendapat sesuai dengan konteks.	Link: http://quizizz.com/join?gc=11460624
B. Kompetensi Dasar 3.1 Menerapkan fungsi sosial, struktur teks, dan unsur kebahasaan teks interaksi interpersonal lisan dan tulis yang melibatkan tindakan meminta perhatian, mengecek pemahaman, menghargai kinerja meminta dan mengungkapkan pendapat, serta menanggapiinya, sesuai dengan konteks penggunaannya 4.1 Menyusun teks interaksi interpersonal lisan dan tulis sangat pendek dan sederhana yang melibatkan tindakan meminta perhatian, mengecek pemahaman, menghargai kinerja, serta meminta dan mengungkapkan pendapat, dan menanggapiinya dengan memperhatikan fungsi sosial, struktur teks, dan unsur kebahasaan yang benar dan sesuai konteks	G. Kegiatan Pembelajaran Pendahuluan: - Menyapa peserta didik, terutama mengenai kesehatannya. - Mengarahkan peserta didik melakukan presensi Online melalui group WhatsApp. - Do'a bersama sebelum pembelajaran online (Daring) dimulai. - Menyampaikan maksud dan tujuan materi. Kegiatan Inti: - Meminta peserta didik untuk menganalisis ekspresi meminta dan memberi pendapat dengan melihat video yang telah diberikan oleh guru. - Meminta peserta didik untuk menganalisis tiga ekspresi memberi dan tiga meminta pendapat dengan melihat video yang telah diberikan oleh guru. - Meminta peserta didik untuk membuka link kuis tentang meminta dan memberi pendapat yang telah diberikan oleh guru. - Meminta peserta didik untuk mengumpulkan tugas pilihan ganda dengan mensunting nilai hasil kerja mereka. Penutup: - Guru bertanya kepada peserta didik melalui online tentang manfaat dan hal yang sulit mempelajari materi yang telah dipelajari. - Guru membimbing peserta didik untuk menyimpulkan materi secara klasikal melalui online. - Guru menutup pembelajaran dengan do'a dan hamdalah kemudian mengucapkan salam melalui online.
C. Indikator 3.1.1 Menganalisis ekspresi tiga memberi pendapat pada video dengan teliti. 3.1.2 Menganalisis tiga meminta pendapat pada video dengan teliti. 4.1.1 Mengumpulkan tugas pilihan ganda tentang memberi dan meminta pendapat dengan mesunting nilai hasil kerja.	Penilaian - Penilaian Sikap Penilaian kedisiplinan dalam mengisi presensi online dan tanggung jawab mengerjakan tugas. - Penilaian Pengetahuan Penugasan: Penilaian tugas online. - Penilaian Keterampilan Kinerja: Lembar laporan tugas/Unjuk kerja kegiatan mengirim jawaban via Whatsapp
D. Materi Asking for and giving opinion	
E. Metode/Model Daring Model Discovery Learning dan Problem Based Learning	
F. Media/Sumber Belajar HP, Laptop, Gambar/Foto, Film/Video. Buku Siswa Passport to the World 2: A Fun and Easy English Book; Tiga Serangkai Video Materi: Link: https://drive.google.com/file/d/1nM24MOB9Ln-uziorZtbETX7LFWiRCh/view?usp=drivesdk Penugasan: Quizizz	

While-activity
(Knowledge aspect of competency's domain)

Figure 4.1. reveals that pre-service teacher 1 asked the students to analyze the asking and giving opinion expression on mind mapping that students have got before. Because the pre-service teacher 1 gave the instruction before asking the students to analyze the material, this can be called knowledge aspect of competency's domain. This referred to the beginning of while-activity that pre-service teacher 1 asked the students to analyze all the materials by watching a video. Similar result about implementation of mind map in while-activity and knowledge aspect of the lesson plan also revealed in the lesson plan of pre-service teacher 2 as follows.

Figure 4.2. The Second Pre-service Teachers' Lesson

IV. Kegiatan Pembelajaran

Pertemuan Pertama:

1. Kegiatan Pendahuluan

- a. Guru membuka kelas dengan salam, lalu menanyai kabar peserta didik. Dilanjutkan dengan mengingatkan peserta didik untuk selalu mematuhi protokol kesehatan selama masa pandemi untuk memutus penularan rantai COVID-19.
- b. Guru mengecek kehadiran peserta didik dengan meminta mereka mengetik nama lengkapnya untuk menyatakan kehadiran di WhatsApp group pada saat awal kegiatan pembelajaran.
- c. Guru memulai kelas dengan membaca doa bersama peserta didik
- d. Guru memberikan motivasi kepada peserta didik untuk tetap bersemangat belajar walaupun masih dalam masa pandemi COVID-19.

2. Kegiatan Inti

- a. Guru menanyai peserta didik tentang materi yang dipelajari satu minggu yang lalu.
- b. Peserta didik merespon guru dengan memberikan opini tentang materi yang dipelajari peserta didik satu minggu yang lalu.
- c. Guru meriview pembelajaran satu minggu yang lalu dengan mengajukan beberapa pertanyaan kepada peserta didik.
- d. Guru menginformasikan peserta didik untuk membuka dan membaca ringkasan materi baru tentang *The Use of Articles A/An and The* yang telah dibagikan di E-Learning.
- e. Guru memberikan voice note ke grup whatsapp sebagai tambahan penjelasan terkait materi yang dipelajari
- f. Guru menanyai peserta didik tentang ringkasan materi yang telah dibaca.
- g. Guru dan peserta didik bersama-sama mendiskusikan ringkasan materi tentang *The Use of Articles A/An and The*.

While-activity
(Knowledge aspect of
competency's domain)

Based on Figure 4.2. shows that pre-service teacher 2 delivers material about countable and uncountable nouns which are conducted in the second meeting of the article topic. The pre-service teacher 2 directly asked the students about the summary of material that they have read before. This reflects on the feature of realm competency which is namely knowledge aspect.

To sum up, the result of interviewing pre-service teachers' experience in using mind mapping online platforms for developing English materials showed the way how can they be. There are recognizing the principles that emphasize on target language and the benefits of materials development which refers to creating materials based on students' need; and the adding and deleting techniques of adapting materials. Furthermore, pre-service teachers focused on language and cultural content for the lesson which can be the factors of adapting materials. Thereafter, pre-service teachers can formulate materials and determine the complimenting media for increasing students' language skill, curiosity, and understanding. Meanwhile, the result of observing pre-service teachers' lesson plan can conclude that they provide knowledge aspect of realm competency on the lesson plan.

B. Discussion

The discussion clarifies the relationship between the findings and the theory on chapter two. In analyzing this data, the researcher conducts interview.

Referring to the result of the interview which about pre-service teachers' experience in developing learning teaching materials, they believe to realize the principal and effect of materials development. Thereafter, they also determine techniques and factors of adapting materials; and practically determine mind mapping online platform in order to formulate the materials by integrating the varied material form and complimenting media. These results will deliver in the following explanation.

1. Realizing Principal and Effect of Material Development by Interview

Principal of material development is commonly used for guiding the pre-service teachers and cannot be inseparable with the advantages of materials development. The pre-service teachers argued that recognizing the principles before developing materials can catch the advantages of it. For instance, considering the aim of the lesson.

The pre-service teacher 1 stated that “... *Means that teachers should consider their aim before teaching practice. Do they achieve the learning aim or not?*” Then she practically to apply these principals during formulating keywords for her mind mapping “... *For each subtopic are presented in sentence... Because the students (can) easier to analyze, easier to differentiate which one sentence to express asking and giving opinion*”

The pre-service teacher 2 said that “*We should first consider the purpose of our lesson*” and she practiced it during creating the keywords

on her mind mapping *“I take the keywords from the grammar materials that including in this Base Competency”*

Thus, it can be implied that the principal in developing materials is based on Kathleen Graves and Shisheng Xu theory in their study which is *“Designing Language Courses: A Guide for Teachers”*. To develop materials effectively educators demand to identify the learning goals and syllabus focus. These are dealing with focusing on language aspects, one of them is grammar. Moreover, the pre-service teacher referred to Dipak Battcarya and Ramakanta Mohalik theory in their study *“Digital Mind Mapping Software: A New Horizon in the Modern Teaching Learning Strategy”* that is about the procedure in creating mind mapping in order for the material to be structured.

This finding is related to the previous study by Tran Thi Yen in *“Using Mind Maps in Teaching English Grammar to Grade-10 Students”*. Her study revealed the findings about applying mind maps in grammar lessons that similar to this study. Yet there is a difference in this study is focused on learning aim which refers to Base Competency on syllabus. Meanwhile, in Tran Thi Yen study not refers to Base Competency as a guide in teaching grammar. Another similar finding from previous study by Xiaojun Wang and Jiri Dostal study in *“Using Mind Map to learn English Vocabulary”*. Their study showed that mind map features are useful functions for learning teaching processes such as

gathering, organizing, and managing ideas. However, there is a different aspect of their research finding is in language focus which is vocabulary.

Thereafter, the pre-service teachers are recognizing learners' needs and experiences. These can contribute to modify the activities for teaching learning practice easily for the pre-service teachers. The pre-service teacher 1 stated that *"Then I think, the material should be based on students' need. Besides, the material should be based on students' experience. Have they ever got the material or not"* The pre-service teacher 2 said that *"The materials should be based on the students' need and it should be based on the lesson plan that already made before"*

Therefore, it can be implied that the effect of developing English materials according to Jocelyn Howard and Jae Major which is entitled "Guidelines for Designing Effective English Language Teaching Materials." After developing materials effectively by considering students' needs and experiences, the pre-service teachers definitely face the ease to design the lesson plan which is especially for providing materials and managing the learning teaching activities. It is mainly individual needs which reflect the students' needs.

2. Determining Techniques and Factors in Adapting Materials by Observation

During developing materials, the pre-service teachers consider which appropriate techniques for adapting materials. This deals with adding and deleting techniques. The pre-service teachers 1 stated that *"I*

think I choose deleting subtracting. I choose most of the conversation is related to the students' real-life context.” The pre-service teacher 2 said that *“First, I think I used the adding one. In this meeting, the teacher focus on the material There is and There are material... I add more example take from another sources like internet for the material... And the second is deleting. In this Base Competency, there are many topics that need to be focused, but once I said the limit of the time I just focus on There is and There are materials...”*

Thus, it can be implied that the techniques of adapting materials are based on Brian Tomlison in his book “Developing Materials for Language Teaching”. There are two of five techniques that the pre-service teachers implement in adapting materials. For instance, adding, extending; and deleting, subtracting and abridging. Based on the pre-service teacher 2, she used published material and provided additional material from the internet. This is called adding extension in Brian’s book. She added more example sentences which emphasized on *There is and There are* material rather than other topics in published material. This is in Brian’s book namely deleting abridging. Meanwhile, the pre-service teacher 1 only prefers to decide by selecting expressions which relate to the students’ real-life situation in doing conversation.

This is based on the pre-service teachers’ main reasons to adapt materials. The pre-service teacher 1 said that *“... I choose most of the conversation is related to the students' real-life context. I mean the*

conversation can be used in daily conversation of the students.” The pre-service teacher 2 said that “... the students have more example about that topic... Because these materials are taking important part among others...”

Thus, it can be indicated that the main factors to adapt materials are according to Brian Tomlison’s book which is the title similar to adapting materials’ theory above. Based on the pre-service teachers’ statement that the main reason in adapting material should be to consider cultural and language content. They focused on increasing students’ proficiency in grammar and realizing on syllabus. The pre-service teacher 1 emphasized the material which is about how to express asking and giving opinions for applying on student’s daily conversation. On the other hand, the pre-service teacher 2 focused on There is and There is material based on the Base Competency.

3. Determining Mind Mapping Online Platform

Before utilizing a mind mapping online platform, the pre-service teachers should realize the ease of operation for the pre-service teachers and the advantages for pre-service teachers and students. Based on the finding of this study that at that time, the pre-service teachers used Mindomo and there are some features of mind mapping online that can be contributed to providing meaningful learning teaching materials. This can be proven that pre-service teacher 1 is able to determine the appropriate style of the branches by coloring. Furthermore, the pre-

service teacher 1 also adjusted text by defining font style and size of the text. Moreover, pre-service teacher 1 able to keep her mind mapping in PDF or PNG form. In addition, these pre-service teachers have similar opinion that the features of mind mapping can support to provide and deliver meaningful materials in sequence and enjoyable learning in order to increase students' curiosity and understanding of the materials. Even, the features of mind mapping maintain to achieve learning goals.

In conclusion, the pre-service teachers who as educators should consider appropriate mind mapping online platforms. That is dealing with the functions of the feature and benefits of the mind mapping, either for students or educators. Mindomo is one of pre-service teachers' media that has some features on it. These features contributed in creating meaningful materials during teaching practice. For example, graphics (text, style of brunches) and visual or picture. It can be indicated that contribution of these features based on Dipak Bhattcarya & Ramakanta Mohalik theory in their research "Digital Mind Mapping Software: A New Horizon in the Modern Teaching Learning Strategy". These features possible to deliver materials in sequence and create pleasurable learning which can increase students' understanding and interest. This study is similar to the previous study's result that was written by Abu Bakar Sidik in "Pengembangan Media Mindjet Mindmanager Sulit Air Kab. Solok". The result of his study is increasing students' enthusiasm and creating enjoyable learning during the teaching process because of exciting media

that have already been provided by the teachers. In addition, there are positive responses from teacher who interested in using MindJet Mindmanager. However, there is a different aspect of Abu Bakar's study which is the name of the mind mapping online platform. Another difference from this study is about the educators' consideration of mind mapping online platforms which only focus on practical use of that media during create and apply the material without any consideration in achievement of lesson. It because Abu Bakar's research appear about students' response who enthusiasm on the media other than about students' comprehension of the material.

4. Integrating Material Form and Supporting Media and Tools

Material can be supported by integrating online materials and it became another source. The pre-service teacher 1 stated that *"I found the material from the internet in order to the students know more new vocabulary.*

Moreover, procedures in developing materials can be modified by providing varied media. The pre-service teacher 1 stated that, *"I used another media as a brainstorming activity before main activity. The media that I used for brainstorming activity is comic... about asking and giving opinion. Furthermore, I also add the audio to make material more interesting and easy to understand... So I collect them become a learning teaching material by using video editor."* The pre-service teacher 2 stated that *"...the audio in the voice note feature. The reason is because I send*

the materials is only mind mapping. Then I think it is better to give them an explanation about the materials through an audio. The students could be more understand about the materials that they learn, also the students can listen it repeatedly on the audio if they still don't understand on it. I think it is more suitable for them. beside I also can explain as I want through the audio or voice note because it's easy to use."

Hence, it can be indicated that various form and media for supporting materials based on Kathleen Greaves and Shisheng Xu in "Designing language courses: A guide for teachers" that they offered various forms of materials. For example, internet, visuals, and audio. This is useful for the pre-service teachers in order to deliver materials evidently and increase the students' language proficiency and students' insights which can influence over the students' experiences. Besides, this can be implied that by integrating online material the pre-service teacher is able to conduct brainstorming activity at the beginning of lesson. Based on Rosa Cendros Arajuo theory in her result of study "Collaborative mind mapping to support online discussion in teacher education", but her distinguished focus is in threading forum activity. The feature of this forum is discussing online posting on a specific topic directly before go through forum session.

5. Implementing Mindomo during Learning Teaching Process

In teaching online learning, educators challenge to combine teacher-centered and student-centered through modify activity in order

to reach students' need and competency, and using mind mapping online platform can pass this challenge. In observing the lesson plan of pre-service teachers, the researcher discovers a competency during while-activity. The results will be explained as follows.

Based on the lesson plan of pre-service teacher 1, she has two activities for analyzing the materials.

“Meminta peserta didik untuk menganalisis ekspresi meminta dan memberi pendapat dengan melihat video yang telah diberikan oleh guru” (The first activity)

“Meminta peserta didik untuk menganalisis tiga ekspresi memberi dan tiga meminta pendapat dengan melihat video yang telah diberikan oleh guru” (The second activity)

Here, during the learning teaching process, the pre-service teacher 1 provides the knowledge competency through the instruction to analyze all the materials by watching the video and then the pre-service teacher 1 leads the students to analyze six expressions of asking and giving opinion. Means that the pre-service teacher 1 reflected on Decree number 22 of Ministry of Education and Culture about knowledge aspect. So, the pre-service teacher can resolve the challenge in e-learning courses. It is indicated that mind maps can solve online learning based on Petr Kedaj et al in their study “Effective Mind Maps in E-Learning”. However, Petr Kedaj et al focused-on students' examination scores other than students' need.

According to the lesson plan of the pre-service teacher 2 has a questioning activity.

“Guru menanyai peserta didik tentang ringkasan materi yang telah dibaca”

The pre-service teacher 2 asked the students about a summary that they have already read before. Means that this is related to the theory of Decree number 22 of Ministry of Education and Culture. Moreover, this finding similar to previous study by Ririn Widyasari in her study *“Meningkatkan Aktivitas dan Hasil Belajar Mahasiswa Menggunakan Mind Map Berbantuan E-Learning”* she found that students are able to practice asking and answering questions during while-activity. However, there are different aspects about the subject of her study and supporting media by using Edmodo as LMS that is Math subject.

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CHAPTER V

CONCLUSION AND SUGGESTION

This chapter provides the conclusion of study which is dealing with pre-service teachers' experience in using mind mapping online platforms for developing learning materials. Furthermore, this chapter also offers researcher's suggestions.

A. Conclusion

This research showed that developing learning materials involves mind mapping online platform which called Mindomo. It derived two pre-service teachers' experiences in engaging mind mapping to develop English material. There are process in practicing developing English material through selecting appropriate mind mapping.

The pre-service teachers not only determined the suitable mind mapping online platform but also emphasized on identifying the learning goals and syllabus focus. These are as pre-service teacher's guidance in order to develop English material especially in grammar learning. Referring on that, the pre-service teachers applied several techniques in adapting which are namely deleting subtracting. It related and can be practiced by students in daily conversation. Other collaboration techniques are called adding extending and deleting abridging can contribute the material suitable for language content based on Base Competency. To create successfully material development, the pre-service teachers demand to consider in choosing a mind mapping online platform for learning teaching materials first. This is not only dealing with the

implementation of the final product but also about the benefits of online mind mapping platform features during creating the materials. These are useful either for the learners and the pre-service teachers during deliver materials. Thereafter, pre-service teachers determined the appropriate form and media for supporting materials. Therefore, by practicing these all way the pre-service teachers are not only able to achieve learning aims but also pass e-learning nowadays challenges that one of them is to provide knowledge competency. According to the pre-service teachers' lesson plan, there consist of instructions to analyze and summarize the materials that have made by using mind mapping online platform.

It can conclude that, as a pre-service teacher commonly demand experience to develop materials in order to provide appropriate learning teaching materials. Developing learning materials involves creating resources and materials that can use online platform, and mind mapping online platforms is not the exception. These two pre-service teachers have experienced in operating Mindomo to develop English material successfully for online learning activity.

B. Suggestion

According to the result of this study, the researcher offers several suggestions which is clarified as follows:

1. Pre-service Teacher

Pre-service teachers can pay more attention and more exploration on the mind mapping online platform's features before selecting a mind mapping online platform. This is dealing with the easiness to utilize and access for

creating mind mapping by using anything devices. This can be a measure that the materials are easily accessible by students' devices.

2. Future Researcher

Future researchers can develop this study because there are a lot of limitations. Exploring pre-service teachers' experience in other aspects especially in determining the criterion of good compliments media for supporting learning teaching materials can provide more appropriate materials based on students' and teachers' needs either for face-to-face or online learning.



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REFERENCES

- Abdul Cakir & Cagla Atmaca. (2015). Pre-Service Teacher Perceptions about The Use of Facebook in English Language Teaching. *Digital Culture & Education*, 7(2), 110-130.
- Ahmad, I. (2018). Proses Pembelajaran Digital Dalam Era Revolusi Industri 4.0. Direktur Jenderal Pembelajaran dan Kemahasiswaan. Kemenristek Dikti.
- Ahmad, D., & Nur, H. K. (2015). Developing English Lesson Plans For The First Year Students Of SMA 18 Makassar Based On The 2013 Curriculum. *ETERNAL (English, Teaching, Learning, and Research Journal)*, 1(2), 187-200.
- Ali, A., & Ahmad, I. (2011). Key factors for determining students' Satisfactions in distance learning courses: A study of Allama Iqbal Open University. *Contemporary Education Technology*, 2 (2).
- Al-Badwoi, A. S. (2015). Using E-mind mapping in learning at IBRI College of applied sciences. *Global Journal of Computer Science and Technology*.
- Albaqami, Haya M. (2019). Preparing Pre-service Teachers to Use Digital Visual Media for Twenty-first Century Teaching and Learning: Practices and Visions of Teacher Preparation Programs in Saudi Arabia. Colorado: University of Northern Colorado.
- Asli Saylan., Nagihan Tanik Onal., & Nezhil Onal. (2018). Using Technology in Education from the Pre-service Science and Mathematics Teachers' Perspectives. *International Education Studies*, 11(10), 28-41.
- Buzan, T. 2005. *Buku Pintar Mind Map*. Jakarta: PT. Gramedia
- Bhattacharya, Dipak & Mohalik, Ramakanta. (2020). Digital Mind Mapping Software: A New Horizon in the Modern Teaching-Learning Strategy. *Journal of Advances in Education and Philosophy*, 4(10), 400-406.
- Chaib, M., & Svensson, A. K. (2005). *ICT in Teacher Education: Challenging Prospects*. Jönköping University Press/Encell.
- Crawford, J. (2002). *Role of materials in language classroom: Finding the balance*. In J. C. Richards & W. A. Renandya, (Eds.), *Anthology of Current Practice*, 80-91.
- Creswell, J.W. (2012). *Educational Research: Planning, Conducting, and Evaluating Quantitative and Qualitative Research (Forth Edition)*. Boston: Pearson Education.
- Davies, M. (2011). Concept mapping, mind mapping and argument mapping: what are the differences and do they matter?. *Higher education*, 62(3), 279-301.

- Efendi, T. (2017) "The Students' Perceptions of The Implementation of ICT-Supported Project Based Learning in English Teaching", *IJET (Indonesian Journal of English Teaching)*, 6(2), pp. 167-183. doi: 10.15642/ijet2.2017.6.2.167-183
- Etikan, I., Musa, S. A., & Alkassim, R. S. (2016). Comparison of Convenience Sampling and Purposive Sampling. *American Journal of Theoretical and Applied Statistics*, 5(1), 1-4.
- Fakhrudin, Z., Selle, A., & Nurchalis, N. F. (2019). Technology-Based Teaching Material Development Training for Pre-Service Teachers to Improve Students' Learning Outcomes. *NOBEL: Journal of Literature and Language Teaching*, 10(1), 87-102.
- Forkosh-Baruch A. (2018) Preparing Preservice Teachers to Transform Education with Information and Communication Technologies (ICT). In: Voogt J., Knezek G., Christensen R., Lai KW. (eds) *Handbook of Information Technology in Primary and Secondary Education*. Springer International Handbooks of Education. Springer, Cham.
- Gloria, A., & Oluwadara, A. (2015). Pre-service teachers' ease of use and intention to use selected e-learning technologies in designing instruction. *American Journal of Educational Research*, 3(10), 1320-1323.
- Gaves, K., & Xu, S. (2000). *Designing Language Courses: A Guide for Teachers* (No. 428 G7). Boston, MA: Heinle & Heinle.
- Hidayat, M. L., Prasetyo, W. H., & Wantoro, J. (2019). Pre-service Student Teachers' Perception of Using Google Classroom in A Blended Course. *Humanities & Social Sciences Reviews*, 7(2), 363-368.
- Howard, J., & Major, J. (2004). Guidelines for designing effective English language teaching materials. *The TESOLANZ Journal*, 12(10), 101-109.
- Itslearning. (2011). The 12 key benefits of learning platforms: How learning platforms support the business of teaching and learning, accessed 21 November 2020,
<https://taltech.ee/public/h/haridustehnoloogiakekus/img/12_reasons_web_final-3.pdf>
- Jailani, M. S., & Hamid, A. (2016). Pengembangan sumber belajar berbasis karakter peserta didik (ikhtiar optimalisasi proses pembelajaran pendidikan agama islam (PAI)). *Jurnal Pendidikan Islam*, 10(2), 175-192.
- Kemendikbud. (2018). *Buku Pegangan Pembelajaran Berorientasi pada Keterampilan Berpikir Tingkat Tinggi*. Direktorat Jenderal Guru dan Tenaga Kependidikan.

- Kholisho, Y. N., & Arianti, B. D. D. (2016, October). E-Learning System Development with Moodle Based as Learning Tool in STKIP Hamzanwadi Selong. In International Conference of Teaching and Education (ICETE) 2016 (Vol. 2, Pp. 544-541). Universitas Hamzanwadi.
- Kopzhassarova, U., Akbayeva, G., Eskazinova, Z., Belgibeyeva, G., & Tazhikeyeva, A. (2016). Enhancement of Students' Independent Learning through Their Critical Thinking Skills Development. *International Journal of Environmental and Science Education*, 11 (18), 11585-11592.
- Lea, S. J., Stephenson, D., & Troy, J. (2003). Higher education students' attitudes to student-centered learning: beyond educational bulimia'?. *Studies in higher education*, 28(3), 321-334.
- Lefebvre, S., Deaudelin, C., & Loiselle, J. 2006. *ICT Implementation Stages of Primary School Teacher. The Practices and Conceptions of Teaching and Learning*. Australia: Australian Association for Research in Education National Conference.
- Moleong, J. Lexy. 2009. *Metode Penelitian Kualitatif Rev.* Yogyakarta: PT. Remaja Rosdakarya.
- Mergler, A. G., & Spooner-Lane, R. (2012). What per-service teachers need to know to be effective at values-based education. *Australian Journal of Teacher Education*, 37(8), 5.
- Miles, M. B., & Huberman, A. M. (1994). *Qualitative data analysis: An expanded sourcebook*. sage.
- Nurhidayati, N., & Kustini, S. (2018). Pengembangan Bahan Ajar Bahasa Inggris Berbasis Keterampilan Abad 21 pada Perguruan Tinggi Vokasi: Sebuah Kajian Literatur. In *Proceeding of National Conference on Asbis* (Vol. 3, pp. 417-424).
- Omariba, A. (2019). Technology-Enhanced Classroom to Enhance Critical Thinking Skills: Teachers' Perspectives. In *Handbook of Research on Promoting Higher-Order Skills and Global Competencies in Life and Work* (pp. 225-244). IGI Global.
- Pegy S, C., Haryanto, E., Ulfiati, L. (2018). English Pre-service Teachers' Strategy in Teaching Speaking for Tenth Grade Students of Senior High School 10 Jambi City. *Educational research third edition quantitative, qualitative, and mixed approaches*. Indonesia: Jambi University.
- Petr Kedaj, Josef Pavlíček, and Petr Hanzlík. (2014). *Effective Mind Maps in E-learning*. Acta Informatica Pragensi. Czech: Czech University of Life Sciences Prague.

- Rachmawati, I. N. 2007. *Pengumpulan data dalam penelitian kualitatif: wawancara*. Jurnal Keperawatan Indonesia Vol. 11, No 1. Indonesia: University of Indonesia.
- Radifan, M. F., & Dewanti, R. (2020). The Incorporation of 4C Skills in Senior High School English Teachers' Lesson Plans. In STAIRS (Vol. 1, No. 2, pp. 75-87)
- Richards, Jack C. (2001). *Curriculum Development in Language Teaching*. Ernst Klett Sprachen.
- Rosa Cendros Araujo. (2019). Collaborative mind mapping to support online discussion in Collaborative mind mapping to support online discussion in teacher education. Canada: The University of Western Ontario.
- Saleh, S. E. (2019). Critical Thinking as A 21st Century Skill: Conceptions, Implementation and Challenges in The EFL classroom. *European Journal of Foreign Language Teaching*.
- Sidik, A. B. (2020). Pengembangan Media Mindjet Mindmanager pada Pembelajaran Fikih Materi Shalat di Kelas VII Mts Muhammadiyah Sulit Air Kab. Solok. *El-Hekam: Jurnal Studi Keislaman*, 4(1), 11-30.
- Smith. J, Judith & C. Greene, H. (2013). Pre-service teachers use e-learning technologies to enhances their learning. *Journal of Information Technology Education: Research*, 12(1), 121-140.
- Syaddad, H. N. (2020). Preparing the Preservice Teachers to be the Industrial Revolution Teacher 4.0 Era. In *3rd International Conferences on Learning Innovation and Quality Education (ICLIQE 2019)* (pp. 1165-1173). Atlantis Press.
- Tomlinson. B. (2008). *English language learning materials: A critical review*. Bloomsbury Publishing.
- Tomlison, B. (2014). *Developing materials for Language Teaching* (Second Edition). A&C Black.
- Tomlison. B. (2014). *Developing Materials for Language Teaching*. Bloomsbury Publishing.
- Widiyadari, R. (2017). Meningkatkan Aktivitas dan Hasil Belajar Mahasiswa Dengan Mind Map Berbantuan E-Learning melalui Edmodo. *Jurnal Teknodik*, 21(1), 027.
- Xiaojun Wang, & Jiri Dostal. (2018). *Using a Mind Map to Learn English Vocabulary*. Czech: Palacky University Olomouc
- Yen, T. T. (2019). *Using Mind Maps in Teaching English Grammar to Grade-10 Students*. The Neotia University.

Zhao, C., Pandian, A., & Singh, M. K. M. (2016). Instructional Strategies for Developing Critical Thinking in EFL Classrooms. *English Language Teaching*, 9(10), 14-21.



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