

Research Article

Syofianis Ismail^{1*}, Zhang Ling², Erna Nawir³, Alber Alber⁴, Desna Fauziah⁵

Review of Instructional Digital Media to Path Teachers' Digital Competence on Philosophical Perspective: Distraction or Diversion

*Corresponding Authors: **Syofianis Ismail**; Universitas Islam Riau, Indonesia; syofianis@edu.uir.ac.id

Zhang Ling; Zhengzhou Institute of Technology of China, China; 931221473@qq.com

Erna Nawir; Universitas Negeri Padang, Indonesia; erna.nana97@gmail.com

Alber Alber; Universitas Islam Riau, Indonesia; alberuir@edu.uir.ac.id

Desna Fauziah; Universitas Muhammadiyah Sumatra Barat, Indonesia; desna_fauziah@umsb.ac.id

DOI: <https://doi.org/10.47353/ijedl.v1i4.24>

Abstract: In spite of its emergence in 1980s, digital media has been well known to this day, yet it is still questioned whether its presence is merely a "disturbance" or a "diversion" after contradictory impacts of digital media usage have been found based on several conducted studies. Answering the question, library research was carried out by using some sources and references in getting and analyzing the data. Then, the writers integrated their ideas by synthesizing in drawing conclusion. Delving into the essence of four learning theories (behaviorism, cognitivism, constructivism, and connectivism) and their integration with technology, particular media use and their functions are recognized through a systematic procedure in certain digital learning approach as one alternative for teachers in selecting and utilizing digital media in learning process. It was found that, firstly, the comprehension basic learning philosophy serves as fundamental reasons for teachers in utilizing technology. Secondly, the learning theories play as the base for teachers to develop their teaching approaches by maximizing their digital competence through digital technology use for improving their digital literacy. Lastly, the ownership of knowledge and skill for instructional digital media use develops teachers' digital competence by recognizing students' need in learning. In a nutshell, the choice for digital media utilization has to be supported by understanding the intensive relation between teachers and their learners' roles and the instructional strategies in integrating media and technology used which will awaken not only teachers' digital literacy, but especially their digital competence as well, as displayed through their ability to be intricately connected to digital media use. Therefore, the comprehensive understanding of learning theories approach of teachers and their ways in utilizing media-based technology determines the function of the media itself whether it is distraction or diversion during teaching and learning process.

Keywords: digital media, instructional aid, teachers' competence, digital competence.

Introduction

Time changes and goes by in blink of an eye, so does era. Education is one of human's life aspects which has been mostly affected. How do we notice? A blackboard to write on and a book to read for were two dominant media used by teachers for their learners in teaching and learning process, which then shifted to the revolution use of various of learning media based on technology. Its emergence is one characteristic of the changing era. Consequently, a term of education 4.0 has been an emerging latest era due to the flexibility of the media technology use in assisting teachers as an integral and necessary component of the teaching

and learning process (Yanti & Nurhidayah, 2020). Therefore, the use of media based-technology as a supplement is to enhance teachers' teaching effectiveness in classroom. Digital natives are learners who are accompanied by the widespread of digital media since they are born and grow with it in natural way (Pujasari Supratman, 2018). They are literally aware of media-based technology by letting the media takes part in their daily live (Pendit, 2013). The presence of digital native is an obvious mark symbolizes the transformation of times. In the other words, the changes accompanied by the development of society have become a clear

reflection of the new technologies and innovative practices in language teaching.

Accordingly, in spite of its countless opportunities provided and benefits given, digital media utilization for digital natives is still in doubt regarding to a common portrait of challenge faced by teachers in learning and teaching process, whereas, media in education is a fundamental element scaffolding learners to develop their skills needed (Potter, 2010). Grouping multimedia, they are categorized as instructional in teaching and learning process (Shevchenko, 2017). Playing the roles as instructional aid has taken a new meaning and to be considered as good tools in education. The media born of the communication use between teachers and learners used for instructional purpose alongside all of related aspects involved called instructional technology or educational technology (Almarabeh et al., 2015). However, several studies had been conducted related to the use of media based-technology especially in language teaching.

Reviewing 398 studies, Shadiev & Yang (2020) analyzed the varieties and the ways of technologies used by focusing on language skills due to the fact that the use of technologies found less to be effective in classroom than traditional classroom. Furthermore, investigating the role of digital media, Abbasova & Mammadova (2019) revealed different responses by asking respondents' real reasoning through interview and questionnaires addressed to some particular grouped language teachers depending on their age, years of teaching experience and subject they teach that showing supportive and contradictive sides of digital media as digital teaching devices at the same time. Almost in similar line, excluded of very few students, digital media did support language learning in term of meeting educational needs for Students at al-Baha University, College of Sciences & Arts – Biljurashi Department of English language through their attitudes exploration

based on a conducted study by Abd et al. (2018). On the contrary, teachers' misperception of their students' adoption of digital media as learning tools in EFL classroom in Saudi Arabia as subconscious burden in hindering them to use media based-technology (Allam & Elyas, 2016). In brief, although digital media has displayed its advantageous use in learning process, several related studies had shown its contrary impact of its emergence as well.

Along the side of the studies conducted abroad concerning effectiveness of digital media use, particularly in Indonesia, currently and commonly, the use of digital media is still technically limited based on fulfilling a life style or a trend for the digital generation or digital native, without appropriate consideration of the value and the essence of the true existence of or and information technology itself in teaching and learning process. Similarly put, digital media as learning aids cannot provide the most essential essence of teaching and learning process (Pujasari Supratman, 2018). Consequently, the use of digital media yields a new concept of challenge in the formation of existing formal education (Maysarah et al., 2020). The fact is supported by survey study conducted in 34 provinces in Indonesia at the end of last year, in November 2020, to be precise, by using a digital literacy measurement framework that refers to "A Global Framework of References on Digital Literacy Skills" of Unesco 2018 (Anna, Arlin, 2022). The result of the study proves that digital literacy in Indonesia has not yet reached the 'good' level which is characterized by a sub-index on information and data literacy with the lowest score. And digital literacy index correlates with young age, male gender, higher education, and less intensive internet use. To sum up, the presence of digital media does not seem to reach its potential utilization yet, particularly in Indonesian context.

Nevertheless, the successful implementation of digital media has been

claimed, yet it still questioned due to the fact its less effectiveness in some cases and is still beyond what have been expected. Therefore, in this recent study, the writers would like to find out whether digital media is a mere distraction or simply a diversion as part of learners' focus transition during teaching and learning process by delving into the essence of the presence of media based-technology and to explore the role of teachers within which in turn will lead them to a path of being teachers with digital competence to achieve digital literacy, by addressing three questions:

How do philosophies of learning theories contribute to teachers' digital competence?

How do philosophies of learning theories awaken teachers' digital literacy?

How does digital media as instructional media path teachers' digital competence?

Literature Review

Digital Media

Digital media as the combination of computer with other distinct media begun to be combined in 1980s, eg. textbook, audio, visual and motion media (An, 2019). Digital media is one form of innovative learning assistance introduced in 1990s, is not only familiarly known as media commonly used to symbolize the presence of computers use along with the combination of media variety, but also popularly known as "New Media" or "Love Bird" (Iwuoha, 2020). Digital media is also called as online media that is presented online on the internet divided into general and specific meaning. Generally, digital media relates to all types or media formats which can only be assessed through internet containing text, photos, videos, and sounds. In this general sense, online media or digital media can also be interpreted as a means of online communication. Therefore, email, mailing list, website, blog, whatsapp, and social fall into category of the media.

Specifically, digital media or online media relates to the notion of the media in the context of mass communication. Media is an abbreviation of communication media in the field of mass communication science which has certain characteristics such as publicity and periodicity (LUMSDAINE & MAY, 1965). Digital media contents combination of data, text, voice and various types images stored in digital format and disseminated via broadband optical cable-based networks, satellite, and microwave system (Jerslev, 2014). Consequently, there are some characteristics of digital media or internet as a medium, namely as a computer based technology; hybrid, not delicate and flexible; interactive potential; public and private functions; no strict rules; interconnected; independent based on location; accessible to individuals as communicators; and mass and personal communication media (Letters, 2023). In other words, digital media is combination of computerized device to assess data through internet connection.

Media as Instructional Aid

Media which is used for instructional purposes and utilized to canalize teacher students communication is categorized as instructional media (Smaldino et al., 2012). Media as instructional aid is also defined as anything used to send information from the sender (s) to the receiver (s) which is not only to arise learners' curiosity but also to encourage them to learn (Wulandari et al., 2023). In the same line, Reisser and Dick in (Gana et al., 2018) assert the purpose of media as instructional aid which is to deliver the lesson including teachers, chalkboard, textbooks, and other printed materials or new instructional media such as CD room, computer, interactive video and multimedia system. There are some reasons for teachers instructors and learners for using media as instructional aids, namely to solve the lack of learners' experience, to reach everything out of the class, to create the

possible direct interaction between the learners and their environment, to produce some observation, to be kept as the basic, concrete, and real concept of teaching, to arise learners' learning motivation, and to integrate the experience from the concrete things to the abstract ones. Furthermore, Ruis et al in Tanggoro (2015) propose some advantages of using media in teaching and learning process, for instance to increase learners' motivation, to avoid boredom, to make the learners easy to understand the instructional material and to make the teaching learning process more systematic. In brief, the importance of media as instructional aid assists not teachers themselves but students as well particularly in ensuring the teaching and learning process runs well.

Furthermore, Vernon in Yana & Darwati (2018) states there are six kinds of instructional media, namely 1) Drawing or teacher made drawings (constructed media and supported topic being taught), 2) Still pictures (shown in the real objects or the even outside of the class), 3) Audio Recording (magnetic, on disc or on motion picture soundtracks as the reproduction of actual event of sounds effect), 4) Motion picture and TV (also known as tape recording in a moving image on colour or black and white produced from live action or graphic presentation, 5) Simulation, real objects, and models, 6) Programmed and computer-assisted instruction [26]. Instructional media can also be in form of games and simulation (e.g Simon says, Scrabble Bingo, Words Puzzle, Role Playing, Socio Drama, Psycho Drama, Puppet Show), visual media (e.g a blackboard, flannel board, magnetic board, wall chart, flash card, reading box, reading machine, module, picture card, slide, film, OHP), audio media (e.g radio, recordings, record player), and audio-visual media (e.g voiced slide, film, TV, video tape recorder) (Aisyah & Haryudin, 2020). Therefore, to sum up, instructional media or media as instructional aids is media used in teaching and learning

process to assisting not only teachers but particularly learners to understand material being delivered as well, and the media can be in form of visual, audio or even audio-visual media.

Teachers' Digital Competence

According to Jansen et al that digital competence is competence which encompasses wide educational conceptualization including knowledge, skill and attitudes towards digital technologies (Janssen et al., 2013). Digital competence is also defined as the integrated and functional use of digital knowledge (Aesaert et al., 2013). Then, a more traditional definition was proposed in defining digital competence by Gentikow in (Harmoko, 2021) focusing on developing the skills to retrieve, assess, store, produce, present and exchange information by using technology. In the same line, digital competence is a competence that involves a wide range of skill which are not only cognitive skill, emotional skill, but sociological knowledge as well in using digital environment effectively (Røkenes & Krumsvik, 2014). And as an additional, digital competence is also termed to be more focused on critical thinking in using technology in order to build new knowledge as asserted by Instefjord (2015). In conclusion, it can also be stated that teachers' digital competence is a competence possessed by teachers which reflects knowledge, skill (cognitive, emotional), and attitudes construction in social and digital environment in utilizing digital technologies in teaching and learning process.

Mastering the competence, teachers need to be familiar with some dimensions included in digital competence. There are some various components identifying different skills and knowledge, as well as attitudes as proposed by Ala-mutka (2011). Whereas, Calvani et al. (2008) highlighted technological, ethical, and cognitive aspects as parts of competences of digital. And in similar vein, Ng (2012) listed

down digital competency in three interrelated components as well as can be seen from the Figure 1 below:

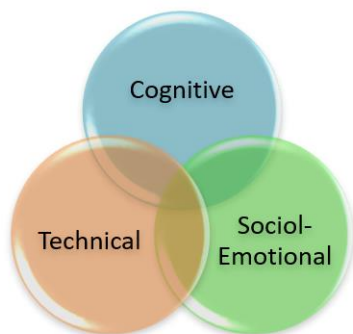


Figure 1: Digital Competence Model

The three components of Figure 1 above shows an interrelated relationship among cognitive aspects as knowledge, technical ability and socio-emotional ability in mastering digital competence by expecting some abilities from teachers, namely 1) the ability to carry out basic computer-based operations and access resources

for everyday use, 2) the ability to search, identify, assess information effectively for the purposes and content learning, 3) the ability to select and develop competency in the use of the most appropriate technological tools or features to complete tasks, solve problems or create products to demonstrate new knowledge or understanding. 4) and the ability to behave appropriately in online communities and protect oneself in digital environment from harm.

Others components of digital competencies are proposed as well, however, components highlighted by Ala-Mutka offers the most comprehensive models by recognizing the convergence of information, digital and media literacies as a result of evolving technologies especially for the 21st century as can be seen from the framework on Figure 2 below:

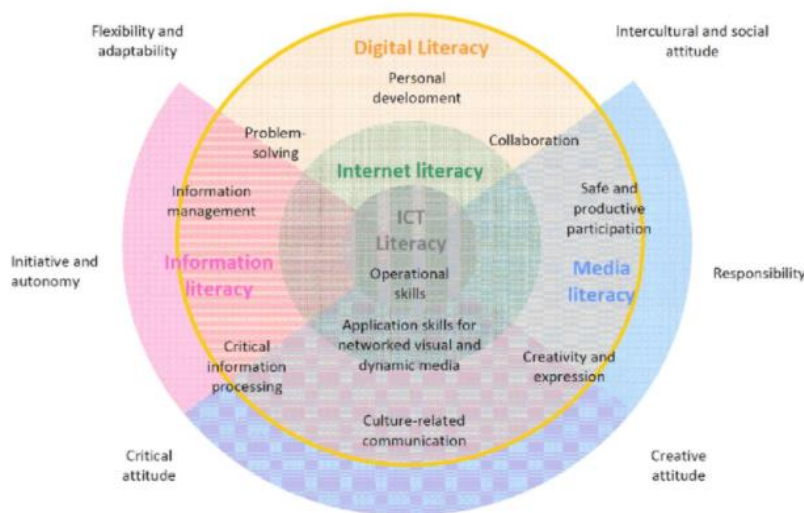


Figure 2. Digital Competence Landscape

The above model from Figure 2 shows many different components included in digital competence and the consensus in relation to it. However, in general, the model focuses initiated by the broadest concept which is digital literacy as the digital domain which is assigned to use digital tools responsibly and effectively for

personal tasks and development by benefiting from social network. Furthermore, digital literacy also as the basic concept in understanding information and communicating with culturally agreed symbols and rules to support other components. Whereas, information literacy and media literacy cover both digital and

non-digital domain such as issues that are not in digital domain which are still important to be put into consideration in mastering digital domain.

Having the components of digital competence little bit explored, the bottom line is that it is worth noting that the importance of digital competence of teachers is to ensure that teachers have a common set of technology competences to prepare the students in all means, especially their motivation in learning. Therefore, there are some challenges for teachers in owning technology competencies as described by Foulger et al. (2017) such as 1) The ability to design instruction which will utilize content-specific technologies to enhance teaching and learning, 2) The ability to incorporate pedagogical approaches that will prepare teacher candidates to use technology effectively, 3) The ability to support the development of the knowledge, skill, and attitudes of teachers candidates as related to teaching with technology in their own area, 4) The ability to use online tools to enhance teaching and learning, 5) The ability to use technology to differentiate instruction to meet diverse leaning needs of students', 6) The ability to use appropriate technology tools for assessments, 7) The ability to use effective strategies for teaching online and or blended/hybrid learning environments, 8) The ability to use technology connect with a variety of regions and culture globally, 9) The ability to address the legal, ethical, and socially-responsible use of technology in education, 10) The ability to be engaged in ongoing professional development and networking activities to improve the integration of technology in teaching, 11) The ability to be engaged in leadership and advocacy for using technology, and 12) The ability to apply basic troubleshooting skills to resolve technology problems. Summarily, to all intents and purposes, the digital competences possessed by teacher ensure their own success for reaching their teaching and learning goals.

Method

This study employed a qualitative approach with the design of library research which is a research getting the data by using library sources (Chu, 2015). The design utilized data collected from printed materials through documents. The data obtained in this study design has three characteristics. Firstly, the researcher examined texts related to the topic which means that the data obtained was not data from the field. Secondly, the data obtained was pre-existing data, indicating that the researcher did not engage in fieldwork. Lastly, the data obtained was not limited by space and time, showing that the data was permanent and unchanging. In other words, the technique used to collect data in this study is through the process of documentation. Additionally, the procedure for analyzing the data involves reading and identifying the entire set of documents, then categorizing the required data, analyzing, and finally drawing conclusions (Ngulube, 2015). In other words, the writers used some sources and references in getting and analyzing the data. And then, the writers integrated their ideas by synthesizing in drawing conclusion.

Result and Discussion

Concerning to this central topic of this study by addressing the questions previously stated, the writers revealed an interrelationship between digital media as the instructional aid in teaching and learning process, teachers' competence, and teachers' literacy. The relationship was framed after figuring out the contribution of learning theories not only to teachers' digital competence, which and but proceeded by teachers' digital literacy as well. In the long run, the recognition of both teachers' digital possession leads the ability of the teachers in making the best use of digital media as instructional aid in language teaching and

learning process. The following sections are the elaboration of the findings.

Contribution of Learning Theories to Teachers' Digital Competence

Utilized in creating suitable and adaptable instructional environment for learners' learning purposes, as part of psychology, learning theories apparently are identified into four kinds of theories which are used as the ground or basic perspective in terms of viewing media as an information and communication technology in learning environment, namely behaviorism, cognitivism, constructivism, and connectivism theories (Mattar, 2018)(Readings, 2008). Nevertheless, the four learning theories had actually been preceded by the emergence of the two basic learning theories which was affirmed by Smaldino et al. (2012), especially, in linking the use of technology in education. Smaldino propose Directed Instructional Method (behaviorism-based) and Constructivist Instructional Method (cognitivism & constructivism-based) which each of its philosophical foundation highlights the nature of each method diversion into opposite direction. Directed instructional strategies which are based on behaviorist perspective, are primarily based on the teacher-delivered presentation design and concluded as not the most effective way to improve learning by helping learners performing the lower sub-skills automatically (Koç, 2005), while on the other hand, constructivism believers propose that learning occurs when all knowledge are constructed in human's mind, therefore learners' background, experience, and aptitude are fused together with learners' learning mechanism and their unique knowledge version while they are learning in their learning process (Tam, 2000).

Furthermore, the unification of the two approaches makes it possible for learners for finding the connection between the knowledge they have acquired through directed instructional

strategies and the practical benefits of the knowledge in their daily life practical application. Strictly speaking, unpractical and unrelated abstract knowledge becomes functional and applicable knowledge for the learners. In consequence, the incorporation of the two integrated approaches is utilized as the basis or basic foundation in integrating learning theories with the use of media-based technology for its pedagogical beliefs on learning and instruction (Levin & Wadmany, 2006). And after the development over the past 30 years, a new theory was born and introduced as a learning theory premises that knowledge presents in the world in the head of individual as a learning theory for the digital age which sees learning as the process of creating connections and developing a network known as connectivism. Hence, concerning the philosophical basic of the reason for a teacher to implement certain learning theories in utilizing technology, particularly in media use in education, in a learning process, a teacher will be guided and able to create and conducive learning atmosphere to reach learning goal effectively and efficiently, for instance learning through one of the use of mobile learning's media which offers flexibility and portable convenience in learning process (Huff, 2016). In short, addressing the use of technology in teaching and learning process on chosen learning theories-based enables teachers to be more critical in conducting favorable learning environment for students.

Contribution of Learning Theories to Teachers' Digital Literacy

Due to the use of technology, meeting growing learners' continuous need for rapid life-long learning, particularly in present e-learning environment, learning theories are increasingly demanded for a more suitable, adaptable and convenient forms. As a result, the emergence of e-learning theories are inevitable that leads to emergence of digital learning methodologies and

tools (Buzzetto-More, 2008). In teacher-centered instruction, integrating instructional technology and media for learning is a supplemental support and for student-centered instruction, students are the primary users (Smaldino et al., 2012). Therefore, the well-known attribute of the use of technology pushes the pedagogical stakeholder, such teachers and educators to adjust and up-date their teaching attitudes in integrating ICT into teaching and learning tasks in their instructional process since the role of technologies has developed into interactive media in material delivery (Sindi Alivi, 2019). The advantages offered in technology, particularly in language teaching and learning, have been suggested to be put into main consideration in enhancing teachers' competence and integrating it into pedagogical practice. Consequently, the good comprehension of teachers in teaching materials will assist them to plan critical and innovative teaching activities and strategies including the utilization of teaching and learning media by using appropriate technologies to scaffold

learners to reach their learning goals, for instance in current development of the utilization invented digital or online media within one of the use of the technology in language learning by embedding teachers' technology skill into their learning process in the classroom (Nyayu et al., 2019). It can be concluded that with the existing learning theories that are not only used as a philosophical basis in teaching and learning, but also as a basis for developing approaches to teaching and learning that are adapted to today's technological developments, teachers can utilize these technology-based learning products into their learning process by maximizing their pedagogical competence so that all components used in the learning process can be utilized efficiently and effectively to achieve learning goals through the use of digital learning technologies such as RAT, TPACK, Digital Blooms, Design Thinking, Peeragogy and others like as can be seen as shown from the Figure 3 below.

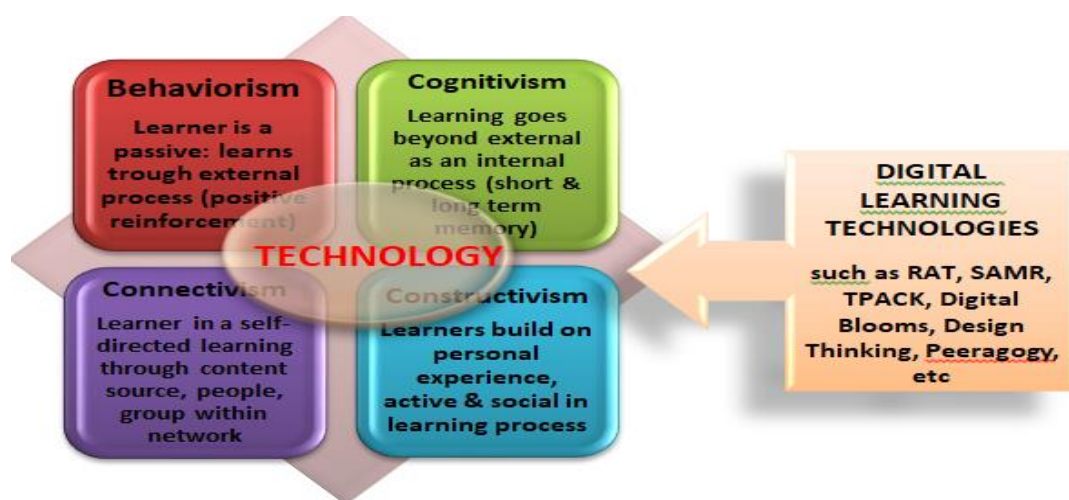


Figure 3. Learning Theories and Technology Integration

Digital media as Instructional Media to Path Teachers' Digital Competence (Linking to Teach: Using Technology to awaken and build Teachers' Digital Competence)

In addition, apparently, there are two commonly used well-integrated models for

technology can be claimed to be successful which are readily and accessible available to help learners in achieving their learning goals effectively, namely the Substitution, Augmentation, Modification, Redefinition Model (SAMR) and the Technological

Pedagogical Content Knowledge Model (TPACK). Nonetheless, particularly, in English instruction, the SAMR model which contains Substitution, Augmentation, Modification, and Redefinition is used to frame how technology especially in learning media usage in learning English by infusing them into teaching and learning activities (Wahyuni et al., 2020). In substitution level, some media are used to substitute the learning activities without changing the function, for example online checking attendance instead of paper-based one,

then the use of PPT to replace white board presentation, the language activities are done by using multimedia, PDF and so on, and finally for evaluation process, teacher utilizes Edmodo, Quizzesland Google Forms. In other three levels of the model (augmentation, modification, redefinition), teacher make use of the media which are considered proper and suitable to carry the task for each activity as can be seen from the table below:

Table 1. Media-based Technology Utilization in English Instruction based on SAMR Model

Class Activities	Substitution	Augmentation	Modification	Redefinition
-Roll Call -Recording Tool	Cell Phone	Cell Phone Camera		
-Presentation -File Sharing	-PPT -Email, Whatsapp, Instagram, Line, Google Drive	Edmodo, Google Classroom, Google Drive, Google Dows, Google Slides, Cell Phone Camera	Edmodo, Google Classroom	Edmodo, Google Classroom
Speaking			Edmodo, Google Classroom	Edmodo, Google Classroom
Reading	Word Files, PDF Files			
Writing	Google Drive, Google Slides, Google Docs	Google Drive, Google Slides, Google Docs	Google Drive, Google Slides, Google Docs	Google Drive, Google Slides, Google Docs. Edmodo, Google Classroom
Assessment	Edmodo, Google Classroom, Quizzes, Google Form, Kahoot	Edmodo, Google Classroom		

Table 1 displays a model of SAMR for using technological-based media according to the class activities planned by teachers which is

still in the same line with Wahyuni et al. (2020) that in the 21st century, ICT or Information and Communication technology is believed to have

vital role in instructional process along with all the learning components involved, including in teachers' professional development program which focuses on technology integration which is a must and takes a big part in educational field, for instance in teacher education program. Accordingly, there are 14 characteristics of 21st century teachers for having technological knowledge, to be specific, learning new technologies, going digital, going global, learner-centered classroom performance, personalized instruction, and innovating which require technology mobilization. However, the integration of technological knowledge of teachers means that their awareness in realizing the potential of ICT in teaching and learning process by developing a knowledge that shows a connection and interaction among technological knowledge, content knowledge, and pedagogical knowledge (Jan, 2017). Therefore, by acquiring the knowledge and skills in ICT field, teachers have possessed a prerequisite for having the ability of digital literacy which means the ability to use information and communication technology safely and critically which led to change of teachers and learners' role in instructional process (Anggeraini et al., 2019). In other words, meeting learning needs as the main goal in teaching, teachers have to put ICT skill as their competence as the main consideration in their teaching and learning process.

On top of that, the linkage of digital literacy to digital competence of teachers lies on teachers' ability as individual in finding, evaluating, utilizing, sharing and creating content by using information come from technology and the internet (Pagani et al., 2016). The ability of teachers in utilizing those processes requires teachers' competence in using tools and applications supported as commented by Janssen et al. (2013) that:

...digital competency clearly involves more than knowing how to use devices and applications... which is intricately connected

with skills to communicate with ICT, as well as information skills. Sensible and healthy use of ICT requires particular knowledge and attitudes regarding legal and ethical aspects, privacy and security, as well as understanding the role of ICT in society and a balanced attitude towards technology...

On that account, Janssen et al. further propose 'a building block' in establishing digital competence in a model which highlighting how elements work together considered essential as can be noticed from the following table:

Table 2. The Explanation area of Digital Competence

Competence	Knowledge and understanding of
Function	Formulation for the utilization of digital technology as the main goal achievement.
Integration	Integrated utilization of digital technology in daily life.
Specialization	Maximizing the creative utilization of digital technology for work achievement.
Collaboration and communication	The use of technologically-enabled networks in collaborative knowledge science.
Management of information	The use of technology in accessing, organizing, analysing, and making relevant and accurate assessments in acquiring digital information.
Security and privacy	Appropriate steps to ensure personal identity, data, and security.
Ethics and Legality	Appropriate social behaviour in using technology and content acquired in digital environments
Society and technology	Lifelong learning obtained from the context and use of

	digital technology seen from the individual and societal impacts.
Learning about and with technology	Developing digital technologies that can be used throughout life.
Decision making informed	Critical use of digital technology tailored to needs and goals.
Self-efficacy/Coherence	improving personal and work quality by using digital technology
Dispositional	Aligning goals and perspectives on digital technology to gain confidence in understanding their potential.

In accordance to Table 2 above, regarding to the use of media-based technology in learning process, teachers' digital literacy was mapped out based on their understanding of their own digital competence categorization. Each area of their competence has its own term. The understanding of teachers in operating their competence serves as their base to decide which kind of learning digital media as instructional aid placed in which area of their competence takes role. It means that once teachers are aware of their competencies, they will be able to determine each aspect involved in their teaching process, one of which is determining what kind of digital learning tools can assist them in achieving learning objectives. In other words, with their digital competencies, teachers can fulfill their students' needs in reaching learning goals. This is in line with a recent systematic review study conducted by Nguyen & Habók (2023) on teachers' digital competence in implementing digital learning tools for learning enhancement in 33 studies published within the past 10 years (2011-2022). In addition to highlighting the demands of teachers' digital competence, this study provides opportunities as

well for teachers to develop their existing digital competencies by promoting self-evaluation. Hence, digital literacy through digital competencies possessed by teachers, they will not eventually only be able to prevent the negative impacts created by technology, but can direct themselves to find the right literacy model as well (Pagani et al., 2016). Briefly speaking, the awareness of one's digital competencies provides guidance for acquiring and developing digital literacy.

Conclusion

This article is addressed to look bit deeper into the basic concept of the use of media-based technology in teaching learning process so that the identity of the media use can be identified more clearly, whether it functions as a disturbance or a diversion. Media-based technology in various forms is commonly referred to as multimedia attaching to its functions and benefits. In the learning and teaching process, the selection of this media must be based on the approach chosen through learning theories that are adapted to the conditions and needs of the learner. The aim is that the selected media can be efficiently used and can be used as a good 'diversion tool' to maintain consistent learning retention from learners in the learning process, so that the use of the media will not interfere the activity in the learning process, especially in terms of efficiency and effectiveness of time as well as in terms of the material's connection with the media. The use of technology-based media requires users who are able to operate it optimally which 'forces' teachers to have digital literacy through their digital competencies. With the availability of media that can be used in available learning platforms and by having better understanding the actual function of these media, the next question is how teachers can help students navigate the digital environment around

them effectively and whether there are other digital competencies of teachers that can be developed to respond to the digital environment and how the digital environment should be created so that the learning process can run effectively. To answer this question, further research is needed that focuses more on clarifying best practices that are more learner-focused.

Acknowledgements

The researchers express gratitude to the Almighty God who had made it possible to complete this manuscript. Syofianis Ismail, Zhang Ling, Erna Nawir, Alber, and Desna Fauziah conceived and planned the article. Syofianis took the lead in writing the manuscript. All authors provided critical feedback and helped shaping the manuscript.

References

- Abbasova, M., & Mammadova, N. (2019). The Role of Digital Technology in English Language Teaching in Azerbaijan. *International Journal of English Linguistics*, 9(2), 364. <https://doi.org/10.5539/ijel.v9n2p364>
- Abd, A., Salih, A., Abd Allah Salih, A., & Sabah Elsaid, A. (2018). Students Attitude Towards the Use of Social Media for Learning Purposes (Case Study : Al-Baha University , College of Sciences & Arts-Biljurashi). *Journal of Literature, Languages and Linguistics*, 50(2006), 31–36. https://www.academia.edu/38173686/Students_Attitude_Towards_the_Use_of_Social_Media_for_Learning.pdf
- Aesaert, K., Vanderlinde, R., Tondeur, J., & van Braak, J. (2013). The content of educational technology curricula: A cross-curricular state of the art. *Educational Technology Research and Development*, 61(1), 131–151. <https://doi.org/10.1007/s11423-012-9279-9>
- Aisyah, S., & Haryudin, A. (2020). Instructional Media Used in Teaching English. *PROJECT (Professional Journal of English Education)*, 3(6), 737. <https://doi.org/10.22460/project.v3i6.p737-742>
- Ala-mutka, K. (2011). Mapping Digital Competence : Author : Kirsti Ala-Mutka. JRC European Commission, January 2011, 1–60. <https://doi.org/10.13140/RG.2.2.18046.00322>
- Allam, M., & Elyas, T. (2016). Perceptions of Using Social Media as an ELT Tool among EFL Teachers in the Saudi Context. *English Language Teaching*, 9(7), 1. <https://doi.org/10.5539/elt.v9n7p1>
- Almarabeh, H., Amer, E. F., & Sulieman, A. (2015). The Effectiveness of Multimedia Learning Tools in Education. *International Journal of Advanced Research in Computer Science and Software Engineering*, 5(12), 761–764.
- An, Y. (2019). History of Instructional Instructional Design , and Theories Media , To cite this article : of A History of Instructional Media , Instructional Design , and Theories. *International Journal of Technology in Education*, 4(1), 1–21.
- Anggeraini, Y., Faridi, A., Mujiyanto, J., & Bharati, D. A. L. (2019). The teachers' perceptions on digital literacy competences in EFL classroom. *Asian EFL Journal*, 24(4), 5–12.
- Anna, Arlin, R. (2022). Pemasaran Era Kini : Pendekatan Berbasis Digital (Issue February).
- Buzzetto-More, N. (2008). Student Perceptions of Various E-Learning Components. *Proceedings of the 2008 InSITE Conference*, January 2008. <https://doi.org/10.28945/3204>

- Calvani, A., Cartelli, A., Fini, A., & Ranieri, M. (2008). Models and Instruments for Assessing Digital Competence at School. *Journal of E-Learning and Knowledge Society*, 4(3), 183–193. <https://doi.org/10.20368/1971-8829/288>
- Chu, H. (2015). Research methods in library and information science: A content analysis. *Library and Information Science Research*, 37(1), 36–41. <https://doi.org/10.1016/j.lisr.2014.09.003>
- Foulger, T. S., Graziano, K. J., Schmidt-Crawford, D. A., & Slykhuus, D. A. (2017). Teacher educator technology competencies. *Learntechlib.Org*, 25(4), 413–448. <https://www.learntechlib.org/p/181966/>
- Gana, M., Haryanto, & Salija, K. (2018). Teachers' Strategies in Teaching Speaking (a Case Study of an English Teacher in Sma Negeri 1 Toraja Utara). *Teachers' Strategies in Teaching Speaking*, 1–10.
- Harmoko, D. D. (2021). Digital Literacy As A Solution To Improve The Quality Of Indonesia's Human Resources. *Research and Development Journal of Education*, 7(2), 413. <https://doi.org/10.30998/rdje.v7i2.10569>
- Huff, A. S. (2016). Project Innovation | PMI. August. <https://www.pmi.org/learning/library/project-innovation-11633>
- Instefjord, E. (2015). Appropriation of digital competence in teacher education. *Nordic Journal of Digital Literacy*, 2015(4), 155–171. <https://doi.org/10.18261/issn1891-943x-2015-jubileumsnummer-11>
- Iwuoha, J. C. (2020). Electronic Research *Journal of Social Sciences and Humanities* ISSN: 2706 – 8242 www.eresearchjournal.com Vol. Covid-19: Challenge to SDG and Globalization, 2(III), 103–115.
- Jan, H. (2017). (PDF) Teacher of 21 st Century: Characteristics and Development. *Research on Humanities and Social Sciences*, 7(9), 1–6.
- Janssen, J., Stoyanov, S., Ferrari, A., Punie, Y., Pannekeet, K., & Sloep, P. (2013). Experts' views on digital competence: Commonalities and differences. *Computers and Education*, 68, 473–481. <https://doi.org/10.1016/j.compedu.2013.06.008>
- Jerslev, A. (2014). New media talk - An introduction. *Northern Lights*, 12(1), 3–9. https://doi.org/10.1386/nl.12.1.3_7
- Koç, M. (2005). Implications of Learning Theories for Effective Technology Integration and Pre-service Teacher Training: A Critical Literature Review. *Journal of Turkish Science Education*, 2(1), 2–18.
- Letters, I. S. (2023). The Convergence of Traditional Media to the Digital Communicative Environment- The Reality and Gap. *Information Sciences Letters*, 12(4), 1827–1839. <https://doi.org/10.18576/isl/120408>
- Levin, T., & Wadmany, R. (2006). Teachers' beliefs and practices in technology-based classrooms: A developmental view. *Journal of Research on Technology in Education*, 39(2), 157–181. <https://doi.org/10.1080/15391523.2006.10782478>
- LUMSDAINE, A. A., & MAY, M. A. (1965). Mass Communication and Educational Media. *Annual Review of Psychology*, 16, 475–534. <https://doi.org/10.1146/annurev.ps.16.020165.002355>
- Mattar, J. (2018). Constructivism and connectivism in education technology: Active, situated, authentic, experiential, and anchored learning. *RIED. Revista Iberoamericana de Educación a Distancia*,

- 21(2), 201.
<https://doi.org/10.5944/ried.21.2.20055>
- Maysarah, A., Rahim, R., & Wahyuni, D. (2020). Media Sosial Dan Media Sosial Dalam Pembelajaran Bagi Siswa / Siswi Smk Negeri 5 Medan. *Reswara: Jurnal Pengabdian Kepada Masyarakat*, 1(1), 1–11.
- Ng, W. (2012). Can we teach digital natives digital literacy? *Computers and Education*, 59(3), 1065–1078.
<https://doi.org/10.1016/j.compedu.2012.04.016>
- Ngulube, P. (2015). Qualitative data analysis and interpretation: systematic search for meaning. *Addressing Research Challenges: Making Headway for Developing Researchers*, June, 131–156.
<https://doi.org/10.13140/RG.2.1.1375.7608>
- Nguyen, L. A. T., & Habók, A. (2023). Tools for assessing teacher digital literacy: a review. In *Journal of Computers in Education (Issue December 2022)*. Springer Berlin Heidelberg.
<https://doi.org/10.1007/s40692-022-00257-5>
- Nyayu, S. Y., Heru, S., & Masagus, S. (2019). the Use of Technology Integration Samr Model in Teaching English. *IDEAS: Journal on English Language Teaching and Learning, Linguistics and Literature*, 7(1), 1–5.
<https://doi.org/10.24256/ideas.v7i1.720>
- Pagani, L., Argentin, G., Gui, M., & Stanca, L. (2016). The impact of digital skills on educational outcomes: evidence from performance tests. *Educational Studies*, 42(2), 137–162.
<https://doi.org/10.1080/03055698.2016.1148588>
- Pendit, P. L. (2013). Digital Native , Literasi Informasi dan Media Digital – sisi pandang kepastakawanan. Seminar Dan Lokakarya Perubahan Paradigma Digital Natives Perpustakaan Universitas - Universitas Kristen Satya Wacana Salatiga 17 - 18 Januari 2013, 1–32.
<https://www.semanticscholar.org/paper/Digital-Native%2C-Literasi-Informasi-dan-Media-%3A-sisi-Pendit/1ed653f61ce6ce178dee0cb255419d0492a92afc>
- Potter, W. J. (2010). The state of media literacy. *Journal of Broadcasting and Electronic Media*, 54(4), 675–696.
<https://doi.org/10.1080/08838151.2011.521462>
- Pujasari Supratman, L. (2018). Penggunaan Media Sosial oleh Digital Native. *Jurnal Ilmu Komunikasi*, 15(1), 47–60.
- Readings, S. (2008). Unit 3 Learning Theories : Implications for Ict. 53–69.
- Røkenes, F. M., & Krumsvik, R. J. (2014). Development of student teachers' digital competence in teacher education. *Nordic Journal of Digital Literacy*, 2014(4), 250–280. <https://doi.org/10.18261/ISSN1891-943X-2014-04-03>
- Shadiev, R., & Yang, M. (2020). Review of studies on technology-enhanced language learning and teaching. *Sustainability (Switzerland)*, 12(2).
<https://doi.org/10.3390/su12020524>
- Shevchenko, M. (2017). Multimedia as an ESP teaching aid at technical universities. *ScienceRise: Pedagogical Education*, 0(4 (12)), 4–8. <https://doi.org/10.15587/2519-4984.2017.100042>
- Sindi Alivi, J. (2019). a Review of Tpack and Samr Models: How Should Language Teachers Adopt Technology? *Journal of English for Academic and Specific Purposes (JEASP)*, 2(2), 1–11.
<https://doi.org/10.18860/jeasp.v2i2.7944>
- Smaldino, S. E., Lowther, D. L., & Mims, C. (2012). *Instructional Media and Technology for Learning*. International

- Journal of Distributed and Parallel Systems, 3, 8.
- Tam, M. (2000). Constructivism , Instructional Design , and Technology : Implications for Transforming Distance Learning & RQVWUXFWLYLVP , QVWUXFWLRQDO ' HVLJQ DQG 7HFKQRORJ \ , PSOLFDWLRQV IRU 7UDQVIRUPLQJ ' LVWDQFH / HDUQLQJ. Educational Technology & Society, 3(2), 50–60.
- Tanggoro, U. (2015). the Use of Instructional Media To Improve Students' Motivation in Learning English. Urip Tanggoro 100 Dialektika Journal, 3(1), 100–107.
- Wahyuni, S., Mujiyanto, J., Rukmini, D., & Fitriati, S. W. (2020). Teachers' Technology Integration Into English Instructions: SAMR Model. 443(Iset 2019), 546–550.
- <https://doi.org/10.2991/assehr.k.200620.109>
- Wulandari, A. P., Salsabila, A. A., Cahyani, K., Nurazizah, T. S., & Ulfiah, Z. (2023). Pentingnya Media Pembelajaran dalam Proses Belajar Mengajar. Journal on Education, 5(2), 3928–3936. <https://doi.org/10.31004/joe.v5i2.1074>
- Yana, D., & Darwati, F. F. (2018). The Implementation of Android-Based Application as a Media for Teaching English in Simple Present Tense. ANGLO-SAXON: Jurnal Ilmiah Program Studi Pendidikan Bahasa Inggris, 8(2), 158–165. <https://doi.org/10.33373/anglo.v8i2.1215>
- Yanti, G. S., & Nurhidayah, R. (2020). Practices on Technology Integration in ELT: A Review on Existing Researches. Brilliant: Jurnal Riset Dan Konseptual, 5(2), 292. <https://doi.org/10.28926/briliant.v5i2.467>

