

Teacher's understanding of teaching models and students' human literacy

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ABSTRACT

The strengthening of students' human literacy can be done through appropriate learning processes and models of teaching. The purpose of this study is to explore teachers' understanding of models of teaching and whether the applied models can strengthen students' human literacy. This qualitative case study of two vocational high schools in Surakarta used semi-structured interviews and documentation for data collection purposes. The results of this study found that teachers have an unsuitable understanding of models of teaching employed in Basic Accounting subject. In the interviews, the respondents of this study explained the types of learning media used (PowerPoint, Zoom, recordings, WhatsApp Group, and Quizizz) and methods of teaching (lectures and assignments), instead of models of teaching (discovery learning, inquiry-based learning, project-based learning, and problem-based learning). Even though the lesson plans they compiled have mentioned models of teaching, teachers felt that these models were not sufficient to strengthen students' human literacy. These findings can help teachers to revisit the models of teaching used in the classroom with a proper understanding. Teachers are advised to improve their understanding of concepts related to teaching and learning activities. In addition, it is highly necessary for teachers to apply different models of teaching to strengthen students' human literacy.

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1. INTRODUCTION

Industry 4.0 and society 5.0 pose challenges to the world of education, especially for vocational education whose main objective is to prepare graduates to become job-ready. These challenges may cover technical, resource, and technological aspects including mastery of technology [1], [2]. In this regard, Suharno, Pambudi, and Harjanto [3] stated that inadequate facilities, teachers, and industrial supports are among the problems encountered by vocational education.

Several solutions have been proposed to overcome the challenges by vocational high schools in facing Industry 4.0 and society 5.0. First, the government needs to review the compatibility between vocational education and the world of professional work while paying attention to the human aspect [4]. Second, the curriculum of vocational education needs to be developed so that it adapts to Industry 4.0 era and becomes relevant in responding to the needs for new skills, such as coding, big data, and artificial intelligence [5]. The curriculum should contain the mastery of skills needed in the Industry 4.0, including

data literacy, technology literacy, and human literacy [5]. Furthermore, Prabowo *et al.* [6] added that there is a need to improve the learning process in vocational high schools in order to be able to face the challenges of the 21st century and the Industry 4.0. In this regard, the quality and competence of teachers are also extremely crucial. Teachers are declared ready to face Industry 4.0 era if they can use the three types of literacy that emerged as a result of the Industry 4.0, namely data literacy, technology literacy, and human literacy [7]. Third, the government needs to plan the implementation of a new literacy movement which covers digital literacy, technology literacy, and human literacy [1]. The solutions offered focus more on the need for a relevant curriculum and mastery of data literacy, technology literacy, and human literacy.

Among the three solutions, human literacy is the most interesting topic of discussion. According to Aoun [8], human literacy is believed to be the most important of the three as it gives people the ability to speak, interact with others, and access their capacities for grace and beauty, thus preparing them for social situations. In addition, human literacy equips people with the humanities, communication, and design skills necessary to function in human environments [8]. In other words, this literacy is intended for humans to function well in their environment.

The development of students' human literacy in vocational high schools is extremely vital to produce graduates who not only have good communication and design skills but also a sense of humanity, thus being able to do well in their work, especially in Industry 4.0 era. A study conducted by Lestari and Santoso [9] revealed that human literacy, digital literacy, and technology literacy are the contributing factors that simultaneously have a positive and significant effect of 54.7% on students' work readiness. Another study also found a positive and significant relationship between human literacy and the employability of vocational school students [10].

According to Aoun [8], there are several key aspects of human literacy. First, human literacy is needed by professionals to live and interact with people outside the digital landscape. Second, personal relationships, including teamwork, are the most powerful networks in the workplace. Third, people must know how to work well with others in any work setting, thus needing abilities such as brainstorming, bargaining, and making group decisions. Fourth, understanding the relevance of diversity is essential for human literacy. Students must engage with multiple perspectives and fully incorporate and respect diverse backgrounds, identities, and beliefs. Fifth, people must be able to communicate and motivate others in addition to getting along well with others. Regarding this matter, a significant positive correlation has been found between interpersonal relationships and human literacy [11]. Communication and interpersonal relationship management, along with decision-making skills, are the most significant aspects in professions that resist automation [12].

Measurement of human literacy can be done through assessment using appropriate instruments, such as those developed by Dewi, Rusilowati, and Fianti [13] in the form of multiple choices containing aspects of human literacy, with the cognitive level of creating (C6). Here, indicators of human literacy can be seen in designing, combining, and rearranging concepts. Mufit *et al.* [14] also mentioned indicators of human literacy which include written communication, collaboration, critical thinking, creativity, and innovation.

The strengthening of human literacy in the educational context can be done through a learning process that applies relevant models of teaching. Each model of teaching has its own characteristics. For example, Abidin [15] argued that problem-based learning is the most effective model compared to project-based, literacy-based, and inquiry-based models in terms of facilitating mathematical connection skills. This is because problem-based learning may involve problem-solving that requires higher-order thinking skills (HOTS). Meanwhile, Rohmah *et al.* [16] found that the teaching factory model allows students to learn directly and contextually through the presence of a 'factory' in their school.

The use of problem-based learning has been proven to automatically improve human literacy [17]. This implies that the use of relevant models of teaching in the learning process is crucial to increase human literacy, whose most important aspect is that it focuses on the skills needed in the world of work [8]. According to Sari, Rejekiningsih, and Muchtarom [18], human literacy can be implemented through programs that aim to strengthen character education in schools, such as mentoring activities, habituation activities for students at school, and social activities related to the subject which directly involve students. In addition, aspects of human literacy can also be integrated into Civics Education. In the Accounting Study Program, which is part of the Business and Management study field, first year students often experience difficulties in following Basic Accounting subject since it requires them to first understand basic accounting skills. Therefore, appropriate models of teaching are needed to help students to do better in this subject.

As stated in the Regulation of the Minister of Education and Culture Number 103 of 2014, there are four recommended models of teaching for use in the learning process based on the 2013 Curriculum, including in vocational high schools. They are discovery learning, inquiry-based learning, project-based learning, and problem-based learning. Those four models are believed in line with the characteristics of the learning process in the 2013 Curriculum.

Most studies on human literacy focus on the importance and measurement of human literacy. As for its relation to models of teaching, previous studies tend to focus on the perspectives of students rather than those of the teachers. Studies on models of teaching and human literacy from teachers' perspectives are still very limited. Meanwhile, it is extremely important for teachers to grasp the concept of models of teaching used in the curriculum and find out whether the applied models of teaching can strengthen students' human literacy. By having a proper understanding of the concept of models of teaching, teachers will have a clear design of the learning process, including the procedures, information, assignments, ideas, skills, and values, so that the learning goals can be achieved. Therefore, schools need to ensure that teachers are able to understand models of teaching properly and that their implementation is in accordance with the regulations. If implemented properly, models of teaching can lead to the achievement of learning goals and the improvement of students' human literacy.

Based on the explanation, this study aims to explore teachers' understanding of models of teaching in vocational high schools, especially in the Accounting Study Program. Furthermore, this study investigates whether the models of teaching can strengthen students' human literacy. The study offers some important insights related to teacher understanding of models of teaching and human literacy of the students.

2. RESEARCH METHOD

A qualitative method was applied in this study to gain insights into teachers' understanding of models of teaching and students' human literacy. Furthermore, a case study approach was used to allow exploration of real-life cases and report on them through detailed sources of information such as interviews, observations, audiovisual materials, reports, and documents as mentioned by Creswell [19]. This study investigates the cases in two vocational high schools in Surakarta City, Central Java, Indonesia, consisting of one private school and one public school that have accounting study program. The models of teaching explored in this study are those applied in Basic Accounting only. In addition, this study was conducted during the outbreak of Coronavirus disease 2019 (COVID-19), where the Indonesian government through the Ministry of Education, Culture, Research, and Technology made a policy on online learning and work from home to prevent the spread of COVID-19.

There were two teachers of Grade X Basic Accounting interviewed, namely Teacher A who works in a public school and Teacher B who works in a private school. They were selected purposively to represent both public schools and private schools. For the interviews, teachers were informed in advance about the definitions of models of teaching and human literacy. In this study, the definition of models of teaching refers to the Regulation of the Minister of Education and Culture Number 103 of 2014 which stated that model of teaching is a conceptual and operational framework in learning that has the name of the subject and its characteristics, logical sequence, arrangement, and culture. Meanwhile, the definition of human literacy is as stated by Aoun [8] that human literacy enables individuals to communicate, engage with others, and access their capacities for grace and beauty, thereby preparing them for social situations.

In addition to interviews, documentation of lesson plans was done for triangulation. Direct observation of the learning process could not be made due to the outbreak of the COVID-19. Triangulation was used for data validity, especially those related to techniques. Before conducting the interviews, the researchers sent a letter to the schools containing information about the research project and a request for permission. After obtaining permission, the researchers contacted the relevant teachers to schedule an interview. The interviews used open-ended questions in a semi-structured approach to answer the research questions. The interviews were recorded and transcribed for further in-depth analysis. In addition, the lesson plans for Basic Accounting were collected to get more data related to the topic of this study.

Data analysis in this study followed the technique introduced by Creswell [19], which consists of i) managing data, ii) reading and taking memos, iii) describing, classifying, and interpreting, and iv) representing and visualizing. First, the data collected from the interviews were organized into files of transcription texts. The lesson plans obtained from the teachers were also added to the files. Second, the transcriptions and lesson plans were read several times to understand the whole context before segmenting. Notes or memos were also put on the transcriptions and lesson plans. Third, comprehensive descriptions were constructed, themes or dimensions were created, and interpretations based on the researchers' perspectives or those found in the literature were offered. Finally, the results of the data analysis were represented and visualized in the form of texts and table, including direct quotations from interviews and the components of the lesson plans.

3. RESULTS AND DISCUSSION

3.1. Teachers' understanding of the models of teaching applied in basic accounting subject

As mentioned in the regulation, there are four recommended models of teaching, namely: discovery learning, inquiry-based learning, project-based learning, and problem-based learning. From the interviews, it is known that both respondents of this study show an inappropriate understanding of the models of teaching used in Basic Accounting. When asked about the models of teaching they applied in their classes, neither of them mentioned any of the four models. Instead, they explained about the types of learning media and methods of teaching. Teacher A answered,

“(During the pandemic) for the platform, I use Google Classroom. For the model (of teaching), I provide learning materials through PowerPoint, Zoom meetings, and recordings. (Before the pandemic), I used to give lectures and assignments. I explained the material in front of the class. I tended to write the material on the whiteboard. I did not use PowerPoint.”

Similarly, Teacher B responded,

“For online learning, the systems I use are Zoom, WhatsApp Group, and Quizizz. I use Quizizz for the tests and Zoom for explaining the learning materials.”

From the answers of both teachers, it can be seen that there is a misunderstanding of the concept of models of teaching understood by teachers. There are differences between learning media, methods of teaching, and models of teaching. PowerPoint, Zoom, recordings, WhatsApp group, and Quizizz are examples of learning media, while lectures and assignments are methods of teaching. Both respondents use different types of learning media and methods of teaching in online learning and face-to-face learning.

Although models of teaching are usually closely related to learning media [20], the two are different from one another. According to Mahmud and Idham [21], learning media are all of the teaching resources that can enhance learning for both teachers and students and help them reach their instructional or teaching purposes. Meanwhile, methods of teaching are certain ways to present the learning materials in the curriculum [22]. Models of teaching, on the other hand, have been defined as “descriptions of the learning environment” [23]. Joyce and Weil [23] further mentioned that these descriptions include “planning curriculums, courses, units, and lessons to designing instructional materials-books and workbooks, multimedia programs, and computer-assisted learning programs.” Joyce and Weil [23] classified the models of teaching into four groups, namely the social family, information-processing family, personal family, and behavioral systems family. Among the four, social family emphasizes the development of cooperative relationships in the classroom as a means of forming learning communities.

Furthermore, an analysis of lesson plans was carried out to check teachers' understanding of models of teaching. The lesson plans prepared by the teachers generally include the applied models of teaching. There are two types of lesson plans used in Basic Accounting, i.e., the one-sheet lesson plan and the 2016 complete lesson plan; both are allowed for use based on the Regulation of the Minister of Education and Culture Number 22 of 2016 (complete format) and the Circular of the Minister of Education and Culture Number 14 of 2019 (one-sheet format). Teacher A applied the one-sheet lesson plan, while Teacher B used the complete lesson plan.

Teacher A presented one-sheet lesson plans for Basic Accounting classes in one semester, with 11 Basic Competencies mentioned in these lesson plans. However, they do not include information on the models of teaching used for each Basic Competency. This is probably because the recommended components for the one-sheet format only cover learning goals, steps of learning activities, and learning assessments, whereas the complete format of lesson plan suggests 13 components. In addition, there is no column to list the models of teaching used in the one-sheet lesson plan.

Meanwhile, Teacher B did not present a complete lesson plan for one semester. Teacher B only handed out two lesson plans used for the 1st and 2nd Basic Competencies. Nevertheless, both lesson plans contain a model of teaching, namely Discovery Learning. For example, for the 2nd Basic Competency related to the topic of the accounting professions, both teachers have their own ways of teaching. In her one-sheet lesson plan, Teacher A wrote:

“Students discuss areas of specialization and ethics of profession in accounting then classify and inform their findings. Students conclude the learning outcomes they achieve under the supervision of the teacher.”

Meanwhile, Teacher B systematically described the learning process for the topic of the accounting professions using Discovery Learning in her complete lesson plan. Teacher B explained the step-by-step of the learning process using the syntax in Discovery Learning. Table 1 presents the differences of the main components between the one-sheet format and the complete format of lesson plan.

“Students are invited by the teacher to read books about the accounting professions, areas of accounting, and the importance of professional ethics in accounting (Stimulation). Students are invited by the teacher to take notes and ask about various problems that have not been understood while reading books related to the accounting professions, areas of accounting, and the importance of professional ethics in accounting (Problem Statement). Students are invited by the teacher to form study groups and given assignments by the teacher to seek answers/collect data from various sources related to problems that have been identified regarding the accounting professions, areas of accounting, and the importance of professional ethics in accounting (Data Collection). Students are invited by the teacher to discuss in groups the answers that are considered the most suitable for the identified problems and to confirm the answers in groups (Verification). Students are invited by the teacher to provide answers to the identified problems and draw conclusions about the accounting professions, areas of accounting, and the importance of professional ethics in accounting under the guidance of the teacher (Generalization).”

Table 1. Component differences between the complete and one-sheet lesson plans

No.	Complete lesson plan	One-sheet lesson plan
1.	School identity	Learning goals
2.	Subject	Steps of learning activities
3.	Grade/semester	Learning assessment
4.	Core material	
5.	Time allocation	
6.	Learning goals	
7.	Basic competencies and indicators of competency achievement	
8.	Learning materials	
9.	Learning methods	
10.	Learning media	
11.	Learning sources	
12.	Steps of learning	
13.	Learning assessment	

The comparison between the results of the interviews and document analysis shows an inconsistency. Teacher A did not provide correct responses about the models of teaching used in the learning process and did not include them in the lesson plan. Likewise, Teacher B did not give a correct explanation about the models of teaching. However, Teacher B mentioned the models of teaching applied in her class in the lesson plan. This may indicate that teachers have not fully understood the concepts related to the teaching and learning processes, such as learning media, methods of teaching, and models of teaching.

This finding is in accordance with Nurtanto *et al.* [24] who found that vocational high school teachers had not mastered the preparation of learning tools which covered learning programs, plans, media, and assessments. Furthermore, Nurtanto *et al.* revealed that vocational high school teachers experienced difficulties in carrying out authentic assessments and implementing methods of teaching, literacy approaches, and lesson plans [24]. Therefore, it is absolutely necessary for teachers to have good knowledge management and knowledge sharing processes which have a positive influence on teachers' literacy skills [25], including information literacy skills related to information/knowledge about learning media, methods of teaching, and models of teaching.

Based on the analysis on the lesson plans, there is a discrepancy between the written documents and the factual learning processes. This should not happen since lesson plans are compiled to help teachers in the learning process, including in determining the models of teaching used. The models of teaching written in the lesson plans were not implemented in the learning process. This is in line with the finding of a study by Nimat [26] that although 74.05% of the factual learning process carried out by the teacher was in accordance with the lesson plan, it was not well implemented. In this regard, Setyoningrum [27] also found the low consistency in the components of the lesson plan made by Accounting teachers with the concept of problem-based learning.

3.2. Do the models of teaching strengthen students' human literacy?

Before asking whether models of teaching can strengthen students' human literacy, the suitability of the teachers' views on the concept of models of teaching and human literacy was confirmed. According to Aoun [8], aspects of human literacy may include interacting with others, collaborating in teams, brainstorming, bargaining, making group decisions, understanding and respecting diversities, and communicating with others. When asked whether the applied models of teaching strengthened students' human literacy, both respondents agreed that some aspects of human literacy were strengthened by the implementation of models of teaching in face-to-face learning, but not in online learning.

Teacher A stated that the models of teaching used could not fully improve human literacy; this was exacerbated by the pandemic situation which has forced students to study online. Teacher A explained that it was difficult to monitor students' behavior related to their human literacy due to limited interaction between students as well as between students and the teacher. However, Teacher A added that she could see good collaboration and communication among students when she gave them a video project to work on in teams. Teacher A mentioned,

"When I asked students to do a video project in our lessons, they learned to work in a team. I can see good results of the project."

On the contrary, Teacher B found it difficult to see the strengthening of students' human literacy due to the implementation of models of teaching, especially in online learning. Teacher B expressed,

"Because we are studying accounting, it will be more difficult if there is no face-to-face (learning). Whatever model of teaching is used, if it is applied during online learning, I think it will not work."

Meanwhile, the analysis on the lesson plans showed that the learning activities for Basic Accounting in both schools had represented aspects of human literacy. For example, in School A, the lesson plans have included activities such as having discussions, providing information, and drawing conclusions. In discussions, students interact with one another and learn how to understand and respect different opinions. They also learn to make group decisions. The learning activities at School B, whose lesson plans mentioned Discovery Learning as the model of teaching, contain characteristics of human literacy such as conducting group discussions, communicating in groups and with others, and drawing conclusions at the end of the learning process.

When asked whether the applied models of teaching promoted students' human literacy, both respondents agreed that they did so in face-to-face learning, but not in online learning. It is difficult for teachers to observe the increase in students' human literacy during online learning. However, a previous study revealed that the use of applications as learning media can increase data literacy, technology literacy, and human literacy [28]. Kusnadi *et al.* [29] in their literature review also mentioned that lesson plans which integrate multiple approaches, models of teaching, and methods of teaching, as well as the utilization of various media, will make human literacy more successful. This is as done by Hartanto *et al.* [30] who developed a digital module (flipbook) for human literacy.

From the results of the interviews and analysis, it can be seen that there is a discrepancy between the results of the interviews and the analysis on the lesson plans regarding students' human literacy. The results of the interviews indicate that students' human literacy cannot be fully strengthened by the implementation of models of teaching. Meanwhile, the document analysis on the lesson plans shows that both schools have in fact mentioned the key points of human literacy in their learning activities.

The findings of this study are in line with those of a study by Hastini, Fahmi, and Lukito [31] which found that it is difficult to improve the human literacy of Generation Z through technology-based learning. This is due to the difficulties in communicating directly and the fading of cultural and religious values. This happens in the context of online learning where teachers and students use various platforms for the learning processes, such as WhatsApp group, Google Classroom, Zoom, and many others. Similarly, Yunus [32] revealed that it remains difficult to increase the human literacy of Gen Z as the majority of their traits hinder them to communicate directly and promptly.

Based on the results, teachers are highly recommended to apply appropriate models of teaching to strengthen students' human literacy. Aoun [8] has proposed three ways of teaching the new types of literacy, including human literacy. They are cross-disciplinary thematic studies, project-based learning, and real-world connections. Given the characteristics of human literacy, social model of teaching which consists of four types, i.e., partners in learning, group investigation, role-playing, and jurisprudential inquiry [23], is the most suitable for strengthening students' human literacy, especially in vocational education.

Blended learning model can thus be a suitable model to be applied by teachers. As mentioned by Jalinus *et al.* [33], the blended learning can be applied in vocational education with a focus on the components of the Industry 4.0, including human literacy. Likewise, Kusnadi *et al.* [29] found that blended learning works well for getting students to interact and learn content outside the classroom. In addition, they believed that this model affects students' ability to develop human literacy in the use of data and technology.

Wang [34] argued that educational institutions must carry out reforms in terms of human literacy education. The ultimate goal of this reform is creating a cultural community in the classroom in which traditional and contemporary methods of teaching can peacefully coexist, with humanistic and practical knowledge serving as the primary subject matter. In other words, this cultural community is able to combine teaching, management, and humanistic literacy to meet students' educational needs.

4. CONCLUSION

It is extremely important for teachers to understand the models of teaching used in the classroom so that the learning process becomes effective and the learning goals are achieved. From the interviews conducted in this study, it is found that the two respondents have not understood the models of teaching applied in their classes; both of them did not directly answer which models of teaching they applied but rather explained the learning media and teaching methods. As for the lesson plans, Teacher A prepared one-sheet lesson plans for one semester, but it did not include the models of teaching applied. On the contrary, Teacher B had fragmented lesson plans in the complete format, but it mentioned the models of teaching used. Furthermore, both teachers believed that the models of teaching in Basic Accounting have not fully strengthened students' human literacy, especially in online learning. Thus, the findings of this study may help teachers to revisit the models of teaching used in the classroom with a proper understanding.

Teachers are suggested to improve their understanding of terms related to teaching and learning activities by reading educational books, attending seminars, and/or watching educational videos. In addition, the application of different models of teaching by teachers is highly necessary to strengthen students' human literacy. Regarding its limitations, this study only focuses on teachers' understanding of models of teaching. Therefore, it is recommended for further studies on the current topic to involve parties other than teachers and to develop models of teaching that can strengthen students' human literacy both in online learning and face-to-face learning.

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REFERENCES




- [1] H. Hadromi, S. Suwahyo, M. D. Saputra, and B. Setiaji, "Employability skills for high school students according to the needs of Industry 4.0," in *Advances in Social Science, Education and Humanities Research, Proceedings of the 1st Vocational Education International Conference (VEIC 2019)*, 2019, vol. 379, pp. 157–161, doi: <https://doi.org/10.2991/assehr.k.191217.026>.
- [2] M. Ridwan, "The development of human resource in vocational education Indonesia: Challenges and opportunities in the industrial era 4.0," (in Indonesian), *Moderasi: Jurnal Studi Ilmu Pengetahuan Sosial*, vol. 2, no. 1, pp. 1–10, 2021, doi: <https://doi.org/10.24239/moderasi.Vol2.Iss1.35>.
- [3] Suharno, N. A. Pambudi, and B. Harjanto, "Vocational education in Indonesia: History, development, opportunities, and challenges," *Children and Youth Services Review*, vol. 115, 2020, doi: <https://doi.org/10.1016/j.childyouth.2020.105092>.
- [4] M. Yahya, "Industrial era 4.0: Challenges and opportunities for the development of Indonesian vocational education," (in Indonesian), Sidang Terbuka Luar Biasa Senat Universitas Negeri Makassar, Mar. 2018, [Online]. Available: <https://core.ac.uk/download/pdf/154762984.pdf>.
- [5] U. Verawardina, N. Jalinus, and L. Asnur, "Vocational education curriculum in the Industrial Revolution 4.0 era," (in Indonesian), *Jurnal Pendidikan*, vol. 20, no. 1, pp. 82–90, 2019, doi: [10.33830/jp.v20i1.843](https://doi.org/10.33830/jp.v20i1.843).
- [6] S. Y. Prabowo, I. W. Susuila, M. Muhaji, T. Rijanto, M. Munoto, and L. Nurlaela, "Student readiness vocational high school toward industrial revolution 4.0," *International Journal of Educational and Vocational Studies*, vol. 2, no. 3, 2020, doi: <https://doi.org/10.29103/ijevs.v2i3.2160>.
- [7] Y. P. Yuara, F. Rizal, and I. Kusumaningrum, "The readiness of vocational teachers at SMKN 1 Sumatera Barat in facing the era of the industrial revolution 4.0," (in Indonesian), *Jurnal Ilmu Pendidikan dan Pembelajaran*, vol. 3, no. 3, pp. 280–288, 2019, doi: <https://doi.org/10.23887/jipp.v3i3.21836>.
- [8] J. E. Aoun, *Robot-Proof: Higher Education in the Age of Artificial Intelligence*. Cambridge, Massachusetts, USA: The MIT Press, 2017.
- [9] S. Lestari and A. Santoso, "The roles of digital literacy, technology literacy, and human literacy to encourage work readiness of accounting education students in the fourth industrial revolution era," in *International Conference on Economics, Education, Business and Accounting (3rd ICEEBA)*, 2019, pp. 513–527, doi: [10.18502/kss.v3i11.4031](https://doi.org/10.18502/kss.v3i11.4031).

- [10] Z. Wang, "Development, validity, and reliability of the humanistic literacy and employment ability scales for vocational school students," *Advances in Social Science, Education and Humanities Research, Proceedings of the 2020 6th International Conference on Social Science and Higher Education (ICSSHE 2020)*, 2020, vol. 505, pp. 562–566, doi: <https://doi.org/10.2991/assehr.k.201214.106>.
- [11] S. Kang, "Convergence study on the effects of humanistic literacy and empathy ability on interpersonal relationship in nursing students," *Journal of Convergence for Information Technology*, vol. 10, no. 1, pp. 35–43, 2020, doi: <https://doi.org/10.22156/CS4SMB.2020.10.01.035>.
- [12] M. Jones, S. Indrovo-Carlier, and A. J. Rodriguez, "Automation in Colombia: assessing skills needed for future work," *Higher Education, Skills, and Work-Based Learning*, vol. 12, no. 2, pp. 225–240, 2022, doi: <https://doi.org/10.1108/HESWBL-01-2021-0003>.
- [13] C. Dewi, A. Rusilowati, and Fianti, "Developing assessment instrument of data, technology, and human literacy in physics Learning," *Journal of Educational Research and Evaluation*, vol. 8, no. 2, pp. 155–164, 2019, doi: [10.15294/jere.v8i2.38370](https://doi.org/10.15294/jere.v8i2.38370).
- [14] F. Mufti, Asrizal, S. A. Hanum, and A. Fadhillah, "Preliminary research in the development of physics teaching materials that integrate new literacy and disaster literacy," *Journal of Physics: Conference Series*, vol. 1481, pp. 1–12, 2020, doi: [10.1088/1742-6596/1481/1/012041](https://doi.org/10.1088/1742-6596/1481/1/012041).
- [15] Z. Abidin, "The effectiveness of problem-based learning, project-based learning literacy, and inquiry learning in increasing students' mathematical connection abilities," (in Indonesian), *Profesi Pendidikan Dasar*, vol. 7, no. 1, pp. 37–52, 2020, doi: [10.23917/ppd.v1i1.10736](https://doi.org/10.23917/ppd.v1i1.10736).
- [16] W. Rohmah, S. Suyatmini, U. U. Hasanah, and B. E. Setiyana, "The pattern of learning accounting for vocational high schools by adopting a teaching factory," (in Indonesian), *Jurnal Pendidikan Ilmu Sosial*, vol. 31, no. 2, pp. 74–81, 2021, doi: [10.23917/jpis.v31i2.15395](https://doi.org/10.23917/jpis.v31i2.15395).
- [17] E. F. Rusydiyah and S. Jazil, "Perceptions of faculty of education students in using problem based learning to increase human literacy," *Journal of Talent Development and Excellence*, pp. 65–84, 2020, [Online]. Available: <https://www.semanticscholar.org/paper/Perceptions-of-Faculty-of-Education-Students-in-to-Rusydiyah-Jazil/1f84330e9d94b3c3c690258ada854b67c8261d0c>.
- [18] D. I. Sari, T. Rejekiningsih, and M. Muchtarom, "The concept of human literacy as civics education strategy to reinforce students' character in the era of disruption," in *Advances in Social Science, Education and Humanities Research, International Conference on Learning Innovation and Quality Education (ICLIQE 2019)*, 2020, vol. 397, pp. 1132–1141, doi: [10.2991/assehr.k.200129.140](https://doi.org/10.2991/assehr.k.200129.140).
- [19] J. W. Creswell, *Qualitative Inquiry and Research Design: Choosing Among Five Approaches*, 3rd Edition. SAGE Publications, Inc., 2013.
- [20] M. Mawardi, "Designing instructional model and media," (in Indonesian), *Scholaria: Jurnal Pendidikan dan Kebudayaan*, vol. 8, no. 1, pp. 26–40, 2018, doi: <https://doi.org/10.24246/j.js.2018.v8.i1.p26-40>.
- [21] S. Mahmud and M. Idham, *Teaching-Learning Strategy*. Banda Aceh: Syiah Kuala University Press (in Indonesian), 2017.
- [22] A. Majid, *Learning Strategy*. Bandung: PT Remaja Rosdakarya (in Indonesian), 2017.
- [23] B. Joyce and M. Weil, *Models of Teaching*, Fifth Edition. New Delhi: Prentice-Hall of India, 2003.
- [24] M. Nurtanto, N. Kholifah, A. Masek, P. Sudira, and A. Samsudin, "Crucial problems in arranged the lesson plan of vocational teacher," *International Journal of Evaluation and Research in Education (IJERE)*, vol. 10, no. 1, pp. 345–354, 2021, doi: [10.11591/ijere.v10i1.20604](https://doi.org/10.11591/ijere.v10i1.20604).
- [25] A. Sobandi, E. Suryadi, M. A. Ramdhany, and R. Rasto, "Knowledge management process, knowledge sharing, and teacher literacy skills at vocational high schools," *Cakrawala Pendidikan*, vol. 40, no. 3, pp. 738–749, 2021, doi: [10.21831/cp.v40i3.42489](https://doi.org/10.21831/cp.v40i3.42489).
- [26] A. S. Nimat, "The congruence study between lesson plan and its implementation in learning in SMK Negeri 2 Malang," (in Indonesian), B.S. Thesis, Universitas Negeri Malang, 2012.
- [27] N. E. Setyoningrum, "Content analysis of lesson plans (RPP) with problem-based learning models in SMK accounting program throughout Malang Raya," (in Indonesian), M.S. Thesis, Universitas Negeri Malang, 2020.
- [28] T. Supriyadi, "Action research in hadith literacy: A reflection of hadith learning in the digital age," *International Journal of Learning, Teaching, and Educational Research*, vol. 19, no. 5, pp. 99–124, 2020, doi: <https://doi.org/10.26803/ijlter.19.5.6>.
- [29] K. Kusnadi, S. Sapriya, D. Budimansyah, and A. A. Wahab, "Blended learning system in Civic Education Courses to develop humanity literacy," in *Advances in Social Science, Education and Humanities Research, Proceedings of the Annual Civic Education Conference (ACEC 2021)*, 2022, vol. 636, pp. 201–205, doi: <https://doi.org/10.2991/assehr.k.220108.036>.
- [30] D. Hartanto et al., "Developing digital module for human literacy and technology literacy," *International Journal and Education Insight*, vol. 1, no. 1, pp. 29–40, 2020, doi: [10.12928/ijei.v1i1.2086](https://doi.org/10.12928/ijei.v1i1.2086).
- [31] L. Y. Hastini, R. Fahmi, and H. Lukito, "Can learning using technology increase human literacy in generation Z in Indonesia?" (in Indonesian), *Jurnal Manajemen Informatika*, vol. 10, no. 1, pp. 12–28, 2020, doi: [10.34010/jamika.v10i1.2678](https://doi.org/10.34010/jamika.v10i1.2678).
- [32] R. M. Yunus, "Increasing human literacy for generation Z through learning to use technology in Indonesia," *International Journal of Science and Society*, vol. 3, no. 4, pp. 245–256, 2021, doi: <https://doi.org/10.54783/ijssoc.v3i4.512>.
- [33] N. Jalinus, U. Verawardina, K. Krismadinata, R. A. Nabawi, and Y. Darma, "Developing blended learning model in vocational education based on 21st century integrated learning and industrial revolution 4.0," *Turkish Journal of Computer and Mathematic Education*, vol. 12, no. 8, pp. 1239–1254, 2021, doi: <https://doi.org/10.17762/turcomat.v12i8.3035>.
- [34] X. Wang, "Exploration of the reform and innovation of college English teaching under humanistic literacy education," *Journal of Language Teaching and Research*, vol. 11, no. 6, pp. 1017–1021, 2020, doi: [http://dx.doi.org/10.17507/jltr.1106.21](https://doi.org/10.17507/jltr.1106.21).




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