



Analysis of Student Learning Style Profiles to Support Learning in class VII of SMP Negeri 01 Jaya Pura

Evi Susanti¹, Ismet^{1*}, Ketang Wiyono¹

¹Master of Physics Education Study Program, Universitas Sriwijaya, Palembang, Indonesia.

Received: October 28, 2023

Revised: November 5, 2023

Accepted: December 25, 2023

Published: December 31, 2023

Corresponding Author:

Ismet

ismet@fkip.unsri.ac.id

DOI: [10.29303/jppipa.v9i12.5858](https://doi.org/10.29303/jppipa.v9i12.5858)

© 2023 The Authors. This open article is distributed under a (CC-BY License)



Abstract: This research aims to analyze the learning styles of grade 7 students at SMP Negeri 01 Jaya Pura for the 2023-2024 academic year in East Oku Regency, South Sumatra Province. This research is a qualitative descriptive study. The subjects of this research were all 7th grade students of SMP Negeri 01 Jaya Pura for the 2023-2024 academic year in East Oku Regency, South Sumatra Province. The data collection technique used in this research is in the form of a questionnaire which will be filled out by research subjects. Then the data will be analyzed quantitatively by calculating the percentage that refers to the three VAK learning styles (Visual, Auditory and Kinesthetic). The results of the learning style analysis of all 7th grade students at SMP Negeri 01 Jaya Pura for the 2023-2024 academic year showed that there were 40% Visual learning styles, 23% Auditory learning styles, 31% Kinesthetic learning styles, 2% Visual Kinesthetic learning styles, 1% auditory visual learning is as much as 1% of the auditory kinesthetic learning style and 2% of the visual auditory kinesthetic learning style. From this research, it was concluded that the learning style of students in Class 7 of SMP Negeri 01 Jaya Pura for the 2023-2024 academic year was dominated by the visual learning style at 40% of the total class of students. These differences in student learning style tendencies can be accommodated by conducting differentiated learning so that it can meet student needs and student characteristics.

Keywords: Auditory; Differentiated learning; Kinesthetic; Learning Style; Visual

Introduction

The curriculum was developed with the aim of improving the quality of education because the heart of an education is the curriculum (Kamila & Agus Rm, 2023). The independent curriculum creates creative learning. This program is not a replacement for the current program, but to provide improvements to the system that is already running according to (Dwivedi et al., 2023). In Law No.20 of 2003 concerning the national education system states that to achieve a national education goal, the implementation of education requires a curriculum as a program that contains a set of learning plans and is related to the objectives, content, teaching materials and methods used in the learning process.

The implementation of learning in the independent curriculum is more directed at realizing a learning process that is fun and makes students

happy (Nazmi et al., 2023). Learning that is emphasized in the independent curriculum is realized in the form of differentiated learning. Learning carried out with the principle of differentiation seeks to accommodate learners who are diverse from their learning needs, talents and interests (Haelermans, 2022). Differentiation does not have to meet all learners' needs every time and every time. However, it is expected that teachers can use a variety of learning approaches so that most learners find learning that suits their needs.

According to İlçin et al. (2018), learning styles are important to learn because they can support student learning success. Students will easily learn if students already know the learning style according to their desires and abilities, while according to Koh et al. (2012), a person has three types of learning or a combination of the three, namely visual type, auditory type and kinesthetic. Darling-Hammond et

How to Cite:

Susanti, E., Ismet, & Wiyono, K. (2023). Analysis of Student Learning Style Profiles to Support Learning in class VII of SMP Negeri 01 Jaya Pura. *Jurnal Penelitian Pendidikan IPA*, 9(12), 10650-10655. <https://doi.org/10.29303/jppipa.v9i12.5858>

al. (2020), found many variables that affect how a person learns which include physical, emotional, sociological and environmental factors. A person's learning style is a combination of how a person absorbs and organizes and processes information. Learning style is how students select, acquire, process and remember new information. Teachers can choose different styles for different money tasks, or use a combination of teaching styles. Teachers must think about how to present information and learning opportunities for learners.

One of the learning styles known for its simplicity is VAK. The VAK learning style uses three main sensory receivers, namely visual, auditory and kinesthetic in determining the learning style of a learner seen from the dominant learning (Subagja & Rubini, 2023). This VAK learning style is based on modality theory, which is that although, in every learning process learners receive information from all three senses, but there are one or two senses that are dominant (Cabual, 2021). One of the learning styles known for its simplicity is VAK. The VAK learning style uses three main sensory receivers, namely visual, auditory and kinesthetic in determining the learning style of a learner seen from the dominant learning style. This VAK learning style is based on modality theory, which is that although, in every learning process learners receive information from all three senses, there are one or two dominant senses (Lujan & DiCarlo, 2006). Modalities are steps in how individuals absorb information easily.

Learning modalities according to Corebima et al. (2017), are divided into 3 parts, namely visual modality, auditory modality, and kinesthetic modality. According to Khasanah et al. (2022), learning styles consist of several types, namely: visual, namely in learning, this type of student learns more easily by seeing or observing; auditory, where students learn more easily by listening, and kinesthetic, where in applying learning, students learn more easily by doing. Some behavioral characteristics according to Coşkun et al. (2010), are learning tendencies. Characteristics of visual learners include: Neat and organized in recording material, Attentive to detail, Emphasize appearance, Remember with visual associations, Diligent readers, Prefer reading to being read to. The characteristics of auditory type learners are: Move lips and pronounce the writing in the book when reading, Likes to read aloud, Finds it difficult to write, but is great at telling stories, Learns by listening and remembering things that are discussed, Likes to talk, likes to discuss. Characteristics of kinesthetic learners include: Responds to physical attention, stand close when talking to people, always physically

oriented and move a lot, learn through manipulation and practice, use fingers as pointers when reading, can not sit still for long periods of time.

The results of the researcher's observations during the Teaching and Learning Process activities at SMP Negeri 01 Jaya Pura show that teachers in general have not fully implemented the principles of differentiated learning and sometimes the way of teaching is teacher center. As previously explained above, in the new learning paradigm, learning that is student centered must be applied and for special grouping of students' learning styles has never been done. Based on the explanation above a simple research was conducted to analyze how the learning style tendencies of students at SMP Negeri 01 Jaya Pura. The results of this analysis will be useful as data for teaching the class by applying differentiated learning which is expected to be able to accommodate the different characteristics of students who are specialized in learning styles. The existence of this data will lead to the application of differentiated learning that can be applied to all subjects so as to maximize the way of learning for the creation of student learning success and an efficient and effective learning process.

With information related to the characteristics of students' learning styles, researchers see the great benefits of information on students' learning styles. It is expected that teachers can apply the right learning strategy in line with the needs of students. For this reason, the researcher took the title Learning Style Profile Analysis of Learners as Differentiated Learning Data in Class VII SMP Negeri 01 Jaya Pura.

Method

This research is a descriptive qualitative research with observation strategies and also giving questionnaires. According to Collins et al. (2018), descriptive qualitative is a research method with a qualitative approach using an inductive flow that begins with explanatory events then generalizations or conclusions are drawn from these events. Meanwhile, observation is a data collection technique by observing and recording the target object both its condition and behavior (Jilcha Sileyew, 2020). The subjects of this study were all 7th grade students of SMP Negeri 01 Jaya Pura in the 2023-2024 academic year in East Oku Regency, South Sumatra Province.

The data collection technique used in this study is a questionnaire that will be filled in by the research subjects. The data collection instrument in the form of a questionnaire sheet using a valid instrument refers to the learning style test made by (Sudaryono et al.,

2019). Then the data will be analyzed quantitatively by calculating the percentage that refers to the three VAK learning styles (Visual, Auditory and Kinesthetic). The questionnaire data obtained by each respondent will be recapitulated based on each learning style. The following are the steps in analyzing the data: There are 30 questions in the learning style questionnaire which refers to the VAK adopted from Chislett and Chapman translated by (Devy et al., 2022).

This questionnaire contains questions with multiple choice-based answer options. There are 3 options of choice a, b or c. Learners are asked to choose one of the answers according to the circumstances that exist in the learners; From the answers obtained by students, if the tendency of students to answer a, then students belong to a visual learning style, if the tendency of students to answer b, then students belong to an auditory learning style, if the student's tendency is to answer c, then the student belongs to the kinesthetic learning style.

After that, a recapitulation is made in the form of the percentage of learning style tendencies of each class and the percentage of learning style tendencies of all 7th grade students of SMP Negeri 01 Jaya Pura, East Oku Regency.

Result and Discussion

The results of the learning style analysis of all 7th grade students of SMP Negeri 01 Jaya Pura in the 2023-2024 academic year totaling 100 students. Resulting in 40% Visual learning style, 23% Auditory learning style, 31% Kinesthetic learning style, 2% kinesthetic visual learning style as much, 1% auditory visual learning style as much, 1% kinesthetic auditory learning style as much and 2% kinesthetic auditory visual learning style. The data is presented in Table 1 and Figure 1.

Table 1. Learning Style Tendency of Each Class of Students in Class 7 SMP Negeri 01 Jaya Pura in the 2023-2024 Academic Year

Learning Style	Frequency (Person)	Percentase (%)
Visual	40	40
Auditory	23	23
Kinesthetic	31	31
Kinesthetic Visual	2	2
Visual, Auditory	1	1
Auditory, Kinesthetic	1	1
Visual, Auditory, kinesthetic	2	2
Amount	100	100

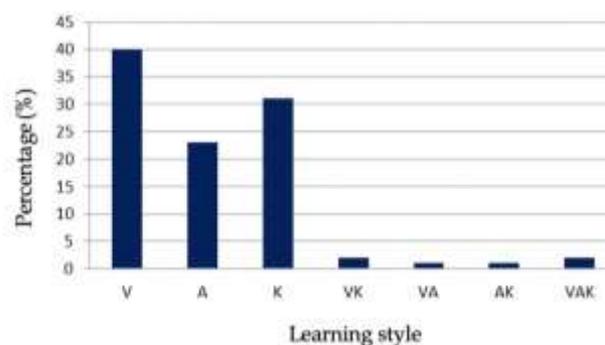


Figure 1. Graphic of learning style tendency of each class of students in class 7 SMP Negeri 01 Jaya Pura in the 2023-2024 academic year

Differentiated Learning

In the Learning Management System (LMS) Module 2.1 of the PGP, differentiated learning is a set of reasonable actions made by teachers that are oriented towards the needs of students (Faiz et al., 2022: 2849). According to Module 2.1 on Differentiated Learning of the PGP (Suwartiningsih, 2021), differentiated learning is the diverse teaching provided by teachers in the classroom, including ways to: acquire content; process, construct or reason ideas; and develop learning products and assessment measures so that all learners in a classroom with diverse backgrounds can learn effectively. The components of differentiated learning consist of: differentiated content, process and product (Melesse & Belay, 2022). So differentiated learning is an effort to adjust the learning process in the classroom to meet the learning needs of each individual.

The adjustments in question are related to students' interests, learning profiles and readiness in order to achieve improved learning outcomes (Bi et al., 2023). Differentiated learning is an effort and effort from the teacher to meet the needs of each different learner. In line with Tomlinson's thoughts (Bondie et al., 2019). Which states that differentiated learning is an effort to harmonize learning activities in the classroom in order to meet the learning needs of individual students (Mofield, 2020). Based on this definition, it does not mean that a teacher is required to teach students individually or differentiate teaching methods for 30 ways according to the number of students, namely 30 people. Differentiated learning also does not mean that teachers provide more total problems or exercises for students who have the ability to solve problems faster than others (Smale-Jacobse et al., 2019).

The thing that needs to be done by teachers in doing differentiated learning is to have innovations to use models, methods, and learning strategies so that in following the learning process students can be more excited and feel motivated in the learning process. So it can be said that to determine the success or failure of learning activities, the role of the teacher in efforts to

improve the quality of learning in the classroom is very important. The differentiation strategy consists of four aspects, namely content differentiation, process differentiation, product differentiation and also learning environment differentiation, each of which has its own influence on the success of learning according to classroom conditions and learner characteristics (De Jong et al., 2019).

According to Eikeland et al. (2022), the aspects of differentiated learning are divided into four, namely content, process, product and learning environment: Content differentiation is something that learners learn. This content relates to the curriculum and learning materials. The teacher's task in this aspect is to make modifications to the curriculum and learning materials that are adapted to the way of learning or learning styles of students and also the conditions of disabilities or limitations they have. Adjusting the curriculum is done by matching it with the learners' abilities and conditions (Pritchett & Beatty, 2015). In general, the specific content of the curriculum cannot be controlled by the teacher, but the teacher can adjust to the learning style and learning materials with the limitations; Process differentiation refers to the way learners process information and ideas (Wahyuningsih et al., 2021).

The interaction between learners and learning materials affects the learning options chosen by learners. Each learner's learning style is different so the classroom needs to be designed in such a way that it can meet the diverse learning needs of learners well; Product differentiation, i.e. how diding participants express things that they have learned. From the products made by students, it will help teachers to be able to assess the mastery of the material possessed by students so that they can provide further material. The characteristics of each student such as their learning style also determine the form of products that will be made and produced by students; and Differentiation of the learning environment is how learners feel and how they learn in class (Pho et al., 2021). The learning environment can affect the emotional aspect, for example by giving learners freedom in determining where to sit or the location of group learning will affect their feelings in the learning process (Hayat et al., 2020).

Differentiated learning can help learners to get optimal learning outcomes because starting from learning materials, learning processes to the products produced are tailored to their interests and needs (Dalila et al., 2022). Products that are made can be collected in any form according to the abilities and interests of learners such as video, audio, images, mapping, infographics, posters, articles and others. The resulting product can be adjusted to the learning style of each learner, for example learners with visual learning styles

make products in the form of info graphics, mapping, posters or slogans, while auditory learners can make their assignments in the form of podcasts, visual auditory learning styles by making learning videos, and finally kinesthetic by doing hands-on practice which is recorded in reports or videos.

Differentiated learning in the process of directing the potential of learners has an important role held by the teacher, so that in an effort to help learners it is necessary to show how the role of the teacher designs learning in favor of students. In addition, a teacher also has another important role, namely leading the learning process that promotes the welfare of the school ecosystem. The definition of leading the learning process is that the teacher determines how to design the curriculum, the learning process in this case determining learning models, strategies and methods, designing the form of assessment used, participating in teacher development activities, community activities at school and so on.

Teachers are obliged to ensure that their learners receive the right treatment and channel their interests and talents through differentiated learning so that learning can be said to be fully in favor of learners as mandated in the curriculum. Siding with learners means that in making any choice related to classroom learning, teachers prioritize the developmental interests of learners, namely based on their learning needs, unique and different characteristics and this is the main reference. Teachers do not make decisions based on self-interest or self-gratification, but rather think about the influence and effects of these decisions on students in the future.

Conclusion

Based on the results and discussion, it can be concluded that students of class VII SMP Negeri 01 Jaya Pura have a varied learning style which is divided into three major groups, namely visual, auditory, and kinesthetic. The results of the analysis show that the visual learning style is dominated by 40%, then the auditory learning style is 23% and the kinesthetic learning style is 31% and of the three groupings above there are students who have a combined tendency. Differentiated learning is able to accommodate differences in the learning styles of students so that the results of the analysis will be the initial data for grouping students for further learning design based on these differences. Teachers have an important role to be able to design learning that is tailored to the results of the analysis of the characteristics of their students

Acknowledgments

Research for the publication of this article was funded by the DIPA Budget of the Sriwijaya University Public Service Board for Fiscal Year 2023 Number SP DIPA- 023.17.2.677515/2023, dated 30 November 2022. In accordance with the Chancellor's Decree Number 0188/UN9.3.1/SK/2023 dated 18 April 2023.

Author Contributions

Conceptualization, E. S., I., K. W., methodology, E. S.; validation, I., L. and K. W.; formal analysis, E. S.; investigation, I., and K. W.; resources, E. S. and I.; data curation, K. W.; writing—original draft preparation, E. S and I.; writing—review and editing, K. W.; visualization, E. S and I. All authors have read and agreed to the published version of the manuscript.

Funding

This research was funded by the DIPA Budget of the Sriwijaya University Public Service Board for Fiscal Year 2023 Number SP DIPA-023.17.2.677515/2023, dated 30 November 2022. In accordance with the Chancellor's Decree Number 0188/UN9.3.1/SK/2023 dated 18 April 2023.

Funding

This research was independently funded by researchers.

References

- Bi, M., Struyven, K., & Zhu, C. (2023). Variables that influence teachers' practice of differentiated instruction in Chinese classrooms: A study from teachers' perspectives. *Frontiers in Psychology, 14*, 1124259. <https://doi.org/10.3389/fpsyg.2023.1124259>
- Bondie, R. S., Dahnke, C., & Zusho, A. (2019). How Does Changing "One-Size-Fits-All" to Differentiated Instruction Affect Teaching? *Review of Research in Education, 43*(1), 336–362. <https://doi.org/10.3102/0091732X18821130>
- Cabual, R. A. (2021). Learning Styles and Preferred Learning Modalities in the New Normal. *OALib, 08*(04), 1–14. <https://doi.org/10.4236/oalib.1107305>
- Collins, C. S., & Stockton, C. M. (2018). The Central Role of Theory in Qualitative Research. *International Journal of Qualitative Methods, 17*(1), 160940691879747. <https://doi.org/10.1177/1609406918797475>
- Corebima, A. D., Bosluk, I., & Leasa, M. (2017). Emotional intelligence among auditory, reading, and kinesthetic learning styles of elementary school students in Ambon-Indonesia. *International Electronic Journal of Elementary Education, 10*(1), 83–91. <https://doi.org/10.26822/iejee.2017131889>
- Coşkun, Y. D., & Demirel, M. (2010). Lifelong learning tendency scale: The study of validity and reliability. *Procedia - Social and Behavioral Sciences, 5*, 2343–2350. <https://doi.org/10.1016/j.sbspro.2010.07.461>
- Dalila, A. A., Rahmah, S., Liliawati, W., & Kaniawati, I. (2022). Effect of Differentiated Learning in Problem Based Learning on Cognitive Learning Outcomes of High School Students. *Jurnal Penelitian Pendidikan IPA, 8*(4), 2116–2122. <https://doi.org/10.29303/jppipa.v8i4.1839>
- Darling-Hammond, L., Flook, L., Cook-Harvey, C., Barron, B., & Osher, D. (2020). Implications for educational practice of the science of learning and development. *Applied Developmental Science, 24*(2), 97–140. <https://doi.org/10.1080/10888691.2018.1537791>
- De Jong, L., Meirink, J., & Admiraal, W. (2019). School-based teacher collaboration: Different learning opportunities across various contexts. *Teaching and Teacher Education, 86*, 102925. <https://doi.org/10.1016/j.tate.2019.102925>
- Devry, N. K., Halim, A., Syukri, M., Yusrizal, Y., Nur, S., Khaldun, I., & Saminan, S. (2022). Analysis of Understanding Physics Concepts in terms of Students' Learning Styles and Thinking Styles. *Jurnal Penelitian Pendidikan IPA, 8*(4), 2231–2237. <https://doi.org/10.29303/jppipa.v8i4.1926>
- Dwivedi, Y. K., Kshetri, N., Hughes, L., Slade, E. L., Jeyaraj, A., Kar, A. K., Baabdullah, A. M., Koochang, A., Raghavan, V., Ahuja, M., Albanna, H., Albashrawi, M. A., Al-Busaidi, A. S., Balakrishnan, J., Barlette, Y., Basu, S., Bose, I., Brooks, L., Buhalis, D., ... Wright, R. (2023). Opinion Paper: "So what if ChatGPT wrote it?" Multidisciplinary perspectives on opportunities, challenges and implications of generative conversational AI for research, practice and policy. *International Journal of Information Management, 71*, 102642. <https://doi.org/10.1016/j.ijinfomgt.2023.102642>
- Eikeland, I., & Ohna, S. E. (2022). Differentiation in education: A configurative review. *Nordic Journal of Studies in Educational Policy, 8*(3), 157–170. <https://doi.org/10.1080/20020317.2022.2039351>
- Haelermans, C. (2022). The Effects of Group differentiation by students' learning strategies. *Instructional Science, 50*(2), 223–250. <https://doi.org/10.1007/s11251-021-09575-0>
- Hayat, A. A., Shateri, K., Amini, M., & Shokrpour, N. (2020). Relationships between academic self-efficacy, learning-related emotions, and metacognitive learning strategies with academic performance in medical students: A structural equation model. *BMC Medical Education, 20*(1), 76. <https://doi.org/10.1186/s12909-020-01995-9>
- İlçin, N., Tomruk, M., Yeşilyaprak, S. S., Karadibak, D., & Savcı, S. (2018). The relationship between

- learning styles and academic performance in Turkish physiotherapy students. *BMC Medical Education*, 18(1), 291. <https://doi.org/10.1186/s12909-018-1400-2>
- Jilcha Sileyew, K. (2020). Research Design and Methodology. In E. Abu-Taieh, A. El Mouatasim, & I. H. Al Hadid (Eds.), *Cyberspace*. IntechOpen. <https://doi.org/10.5772/intechopen.85731>
- Kamila, S. N., & Agus Rm, A. H. (2023). Implementation of Merdeka Curriculum in Improving the Quality of Senior High School. *Jurnal Educatio FKIP UNMA*, 9(1), 394–401. <https://doi.org/10.31949/educatio.v9i1.4591>
- Khasanah, U., Murtono, M., & Fathurohman, I. (2022). Development Of Teaching Book for Dyslexia Children With Learning Style Intervention Assisted By Audio Visual Media At Elementary School. *Jurnal Prakarsa Paedagogia*, 5(1). <https://doi.org/10.24176/jpp.v5i1.8675>
- Koh, Y. Y., & Chua, Y. L. (2012). The Study of Learning Styles among Mechanical Engineering Students from Different Institutions in Malaysia. *Procedia - Social and Behavioral Sciences*, 56, 636–642. <https://doi.org/10.1016/j.sbspro.2012.09.698>
- Lujan, H. L., & DiCarlo, S. E. (2006). First-year medical students prefer multiple learning styles. *Advances in Physiology Education*, 30(1), 13–16. <https://doi.org/10.1152/advan.00045.2005>
- Melesse, T., & Belay, S. (2022). Differentiating instruction in primary and middle schools: Does variation in students' learning attributes matter? *Cogent Education*, 9(1), 2105552. <https://doi.org/10.1080/2331186X.2022.2105552>
- Mofield, E. L. (2020). Benefits and Barriers to Collaboration and Co-Teaching: Examining Perspectives of Gifted Education Teachers and General Education Teachers. *Gifted Child Today*, 43(1), 20–33. <https://doi.org/10.1177/1076217519880588>
- Nazmi, H. B., Ratnasari, D., & Zakaria, A. R. (2023). Implementation of 21st Century Learning in the Independent Learning Curriculum at SD II Islamic Center Deli Serdang. *Educative: Jurnal Ilmiah Pendidikan*, 1(2), 43–50. <https://doi.org/10.37985/educative.v1i2.61>
- Pho, D. H., Nguyen, H. T., Nguyen, H. M., & Nguyen, T. T. N. (2021). The use of learning station method according to competency development for elementary students in Vietnam. *Cogent Education*, 8(1), 1870799. <https://doi.org/10.1080/2331186X.2020.1870799>
- Pritchett, L., & Beatty, A. (2015). Slow down, you're going too fast: Matching curricula to student skill levels. *International Journal of Educational Development*, 40, 276–288. <https://doi.org/10.1016/j.ijedudev.2014.11.013>
- Smale-Jacobse, A. E., Meijer, A., Helms-Lorenz, M., & Maulana, R. (2019). Differentiated Instruction in Secondary Education: A Systematic Review of Research Evidence. *Frontiers in Psychology*, 10, 2366. <https://doi.org/10.3389/fpsyg.2019.02366>
- Subagja, S., & Rubini, B. (2023). Analysis of Student Learning Styles Using Fleming's VARK Model in Science Subject. *Jurnal Pembelajaran Dan Biologi Nukleus*, 9(1), 31–39. <https://doi.org/10.36987/jpbn.v9i1.3752>
- Sudaryono, Rahardja, U., Aini, Q., Isma Graha, Y., & Lutfiani, N. (2019). Validity of Test Instruments. *Journal of Physics: Conference Series*, 1364(1), 012050. <https://doi.org/10.1088/1742-6596/1364/1/012050>
- Suwartiningsih, S. (2021). Penerapan Pembelajaran Berdiferensiasi untuk Meningkatkan Hasil Belajar Siswa pada Mata Pelajaran IPA Pokok Bahasan Tanah dan Keberlangsungan Kehidupan di Kelas IXb Semester Genap SMPN 4 Monta Tahun Pelajaran 2020/2021. *Jurnal Pendidikan Dan Pembelajaran Indonesia (JPPI)*, 1(2), 80–94. <https://doi.org/10.53299/jppi.v1i2.39>
- Wahyuningsih, D., Wahyono, S. B., & Nugroho, A. A. (2021). Teachers' Difficulties in Developing Learning Resources. *KnE Social Sciences*. <https://doi.org/10.18502/kss.v6i2.10024>