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Needs Analysis of Wordwall Interactive Media in Informatics Learning at SMK Negeri 1 Bonjol

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Abstract - The purpose of this study was to analyze the need for the use of interactive learning media Wordwall in Informatics subjects at State Vocational High School (SMK) 1 Bonjol. The method used is descriptive qualitative with data collection techniques through observation and interviews with Informatics subject teachers. The results of the study showed that the problem found was the low motivation of students in Informatics learning. The lack of motivation causes low student learning outcomes that have not reached the Learning Achievement Criteria (KKTP) set by the school, namely 75. This is because teachers do not know interactive learning media and cannot apply it in learning. One potential solution that can be done to overcome the low motivation and learning outcomes of students in learning is to apply interactive learning media Wordwall. In this case, Wordwall provides various templates and features in the form of gamification that can be used to support effectiveness during the learning process.

Keywords - Technology, Wordwall, Informatics, Learning Outcomes.

I. INTRODUCTION

The development of technology in the digital era has brought significant changes in various aspects of life, including education. Educational technology now allows the creation of interactive learning media that can increase the effectiveness of the teaching and learning process. The use of technology not only helps teachers in delivering material, but also plays an important role in increasing student learning activeness and motivation [1].

Learning is an activity designed by teachers to encourage students to learn actively through direct interaction with learning resources [2]. This process entails engagement among students, educators, and educational resources within a structured learning environment [3]. Learning seeks to acquire knowledge, skills, and positive values from various sources for learning [4]. Nonetheless, in practice, learning often faces various challenges, such as low student learning outcomes, lack of understanding of the material, and low student motivation and engagement in the learning process.

The contributing factor is that the teaching method is still dominated by conventional approaches, such as lectures, which are less interesting and limit interaction. This can make students easily lose concentration and feel bored [5]. This may result from students' insufficient comprehension of educational information. Numerous students struggle to comprehend the concepts presented, leading to inadequate understanding. In addition, students often lose enthusiasm and feel confused when answering questions about the material learned during the learning process [6]. In fact, teachers play an important role in ensuring that the knowledge conveyed can be accepted by students [7].

However, in reality, there are still many teachers who do not pay attention to good and creative teaching methods. This makes it difficult to create a conducive learning atmosphere for a relatively long time. If there is a change in the classroom atmosphere, teachers find it difficult to normalize it again. In addition, the lecture method can also cause students to feel bored and lack concentration, so that the teaching objectives are disrupted [8].

In response to these challenges, the Merdeka Curriculum in Indonesia encourages a more flexible and student-centered approach to learning, including the use of digital technologies. One of the important subjects in this curriculum is Informatics, which includes the competency of programming algorithms [9]. However, based on observations and interviews with informatics teachers, many students still have difficulty in understanding the concept of algorithms, which has an impact on the low achievement of the Criteria for Achieving Learning Objectives (KKTP) established by the school, which is set at 75.

The low KKTP achieved by students is evidenced by the low midterm summative assessment scores obtained by students. Based on the graph in Figure 1, it is known that students who get scores lower than 75 are 20 students, while students who get scores higher than 75 are 4 students. From this data it can be concluded that students who get scores below the KKTP are more than students who get scores above the KKTP.

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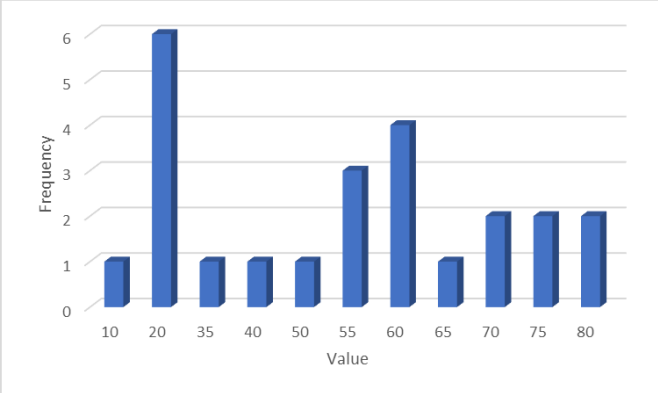

Fig. 1 Mid-Semester Summative Assessment Scores of Students

A potential solution to overcome the low understanding and motivation of students in learning is the application of interactive learning media. Wulandari et al. [1], the use of interactive media can increase the effectiveness of material delivery and encourage student interest in learning through the presentation of content that is more interesting and easy to understand. Interactive media not only strengthens concept understanding, but also contributes positively to students' psychological aspects, such as increased self-confidence and active involvement in the learning process.

One Wordwall is an interactive learning medium. Wordwall is a website that works as a learning medium by delivering interactive games, such as quizzes, matching and grouping tasks [10]. Aribowo [11], states that Wordwall offers a variety of templates for the creation and design of questions available at no cost. Wordwall excels in terms of flexibility of use as it can be accessed through various devices, including smartphones, tablets, and computers [12].

Compared to other platforms such as Kahoot and Quizizz, Wordwall offers a wider variety of game formats that not only focus on competition or speed of answering, but also support individualized, reflective activities. However, Wordwall has some limitations, such as the less in-depth student result tracking feature compared to Quizizz which provides more detailed learning result reports. Meanwhile, Kahoot is very effective for live quiz-based learning. Considering these advantages and limitations, the utilization of Wordwall remains the right solution, especially in explaining abstract concepts such as algorithms visually and interactively.

II. METHODS

This research employs a descriptive qualitative methodology to examine the requirements for Wordwall-based learning media in Informatics topics. This method was chosen because it allows researchers to explore information and real conditions at schools related to the use of interactive learning media. This research was conducted at SMK Negeri 1 Bonjol, focusing on analyzing the needs of interactive learning media to support a more interesting and effective learning process.

The techniques used for data collection are observation and interview. Observations were made by monitoring the learning process in the classroom during Informatics subjects. Researchers saw activities and interactions between teachers and students, learning methods used, and student responses to the material presented. Interviews were conducted with Informatics subject teachers to find out various things, especially as follows:

1. Analysis of Curriculum

The Merdeka curriculum implemented in SMK for Informatics subjects seeks to develop students' computational thinking abilities, problem-solving capabilities, digital technology utilization, and programming proficiency. The utilization of Wordwall interactive learning media in Informatics is highly pertinent to the independent curricular approach. Wordwall facilitates adaptable, interactive, and technology-driven education that can enhance student learning results.

2. Analysis of Student Personality

The personality of class X Automotive Engineering students in Informatics subjects indicates that they are mostly driven by their enthusiasm in the teachings. Furthermore, kids require more engaging learning techniques, and they exhibit a deficiency in motivation when confronting challenging content. Consequently, a learning technique that is more engaging and aligned with their learning style is required.

3. Analysis of Facilities and Infrastructure

At SMK Negeri 1 Bonjol, all students are permitted to utilize smartphones to enhance the educational experience. The school has also equipped computer laboratories for use in the educational process. Given the current circumstances, this Wordwall learning medium is indeed accessible to students.

4. Analysis of Wordwall Feature

The features that exist in Wordwall and can be used in learning can be seen in the following image and explanation.

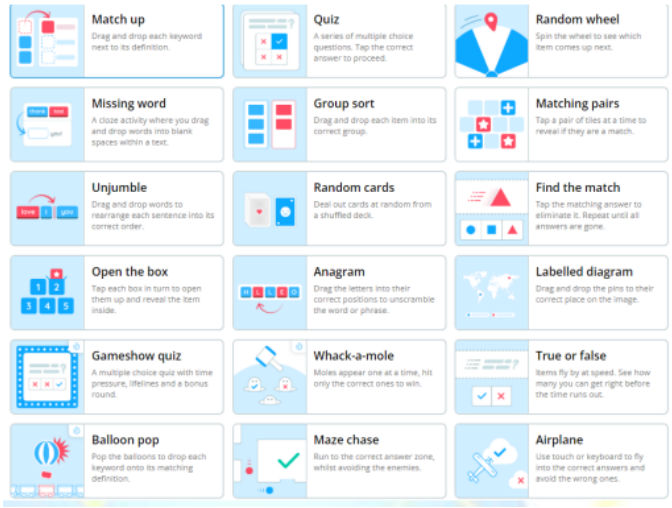

Fig. 2 Wordwall Features

The Fig 1 illustrates the diverse features offered by Wordwall, including the following:

1. Match Up, a game that involves associating each keyword with its corresponding pair through a drag-and-drop mechanism.
2. Quiz, a game involving the resolution of questions by selecting the correct answer within a designated time frame before to advancing to the subsequent question.
3. Random Wheel, a game involving the rotation of a wheel that reveals an image or inquiry, thereafter requiring the

participant to describe the image or respond to the inquiry presented.
4. Missing Word, a game involving the completion of sentences or paragraphs by dragging the appropriate answer into the vacant space.
5. Group Sort, a game that involves categorizing items by dragging and dropping them into their respective categories.
6. Matching Pairs, a game in which players select the proper answer to a question by repeatedly touching the appropriate response and eliminating options until all answers are removed.
7. Unjumble, a game involving the rearrangement of words or phrases within a grid to construct a coherent statement or chapter.
8. Random Cards, a game involving responses to questions that are presented randomly from the shown cards.
9. Find the Match is a game in which players select the correct answer corresponding to a question or statement by tapping on the appropriate alternative until all answers are identified.
10. In Open the Box, the game sequentially reveals the available boxes to identify the correct response corresponding to the presented question or image.
11. Anagram, a game involving the rearrangement of letters to construct the correct word.
12. Labeled Diagram, a game involving the identification of a graph or image by repositioning the corresponding name or answer element on the illustration.
13. Gameshow Quiz, a timed question-and-answer game.
14. Whack-a-Mole is a game in which players respond to questions by striking mice that present the proper answers as they emerge.
15. True or False is a game in which participants respond to questions by selecting between two options: true or false.
16. Balloon Pop, a game involving the bursting of balloons that contain keywords corresponding to their descriptions.
17. Maze Chase is a question-answering game in which players navigate a maze to reach the correct answer while evading adversaries.
18. Airplane, a game involving the navigation of an aircraft towards the correct answer while evading incorrect options.

III. Results and Discussion

This research yields outcomes through observations and interviews. Observations were conducted by monitoring the learning process in the classroom. During the observation, many outcomes were acquired, including.

First, the learning process has been facilitated by the utilization of technology, including smartphones and projectors. Technology, including smartphones and projectors, has been integrated into the classroom learning process. Projectors are frequently utilized to deliver educational resources, such as PowerPoint presentations or instructional movies, designed to enhance students' comprehension of the course. Simultaneously, students frequently utilize smartphones to get supplementary information pertinent to their studies. The implementation of this technology is expected to enhance the quality of education by rendering it more engaging, interactive, and comprehensible.

Second, teachers have failed to implement effective learning media across the instructional process. Teachers frequently employ traditional pedagogical approaches that lack interactivity, resulting in insufficient student engagement in the learning process. The media employed is constrained, and technology is utilized merely in a rudimentary manner, exemplified by the presentation of PowerPoint slides without any innovative approach to material delivery. Indeed, the advancement of technology has enabled the utilization of many educational media to foster a more engaging and joyful learning environment. Teachers continue to depend on blackboards, textbooks, and PowerPoint as the primary instruments for conveying content. This strategy is excellent in conveying information to students; nevertheless, it fails to sustain their attention over an extended period. The teacher primarily functions as an information provider, whilst students remain passive recipients. The absence of interactive technology renders learning repetitive and less engaging for students, resulting in diminished attentiveness during lessons.

Third, students exhibit a reluctance to engage with the teacher's lesson explanations. Due to the lack of diverse and engaging teaching approaches, numerous pupils appear disinclined to focus on the instructor throughout material presentations. Some individuals lack concentrate, opting to converse with peers or become absorbed in unrelated activities throughout the lecture. This lack of focus indicates that students lack sufficient motivation to learn, resulting in suboptimal material absorption.

Fourth, alongside the lack of concentration, numerous pupils were observed dozing or conversing during the teacher's explanation of the content. This phenomena indicates students' minimal engagement in learning. Monotonous learning approaches induce boredom, causing students to disengage from the content being taught. When pupils lack interest in learning, they become more susceptible to distractions and choose for activities perceived as more enjoyable.

Fifth, students exhibit low motivation when addressing issues assigned by the teacher. A significant number exhibit reluctance to fulfill the assignment, opting instead to procrastinate or abstain from work altogether. Certain kids merely replicate answers from peers without comprehending the information presented. This indicates that the learning process has failed to stimulate curiosity and foster critical thinking among all students.

Despite the availability of technology in education, its utilization remains suboptimal according to the findings of this observation. Educators must enhance interactive learning resources by fully using technology. Utilizing Wordwall interactive media in education enhances student engagement and participation in the classroom. Consequently, it is anticipated that student motivation and academic performance would improve, rendering the learning process more efficient and pleasurable.

Furthermore, interview data was conducted with the Informatics subject teacher in class X Automotive Engineering, on Tuesday, October 22, 2024. The interview data can be seen in the following table.

TABEL I
INTERVIEW DATA TABLE

No.	Question	Answer
1	What is the curriculum used at SMK Negeri 1 Bonjol?	Independent Curriculum
2	What are the criteria for the achievement of learning objectives for Informatics at SMK Negeri 1 subjects Bonjol?	75 (Seventy-five)
3	What are the challenges that you experience while teaching informatics subjects?	The challenge is that students are less motivated to learn, so students find Informatics difficult to understand.
4	How is the interest of class X Engineering Automotive students in learning Informatics subjects?	Some students are less interested in learning informatics, because it is different from the major they are interested in, namely automotive.
5	What are the learning outcomes of class X Engineering Automotive students in Informatics?	Quite low, because students find it difficult to understand the material taught and the monotonous way of learning makes students lazy
6	What are the main factors affecting the learning outcomes of class X Engineering Automotive students in learning Informatics?	Students' understanding of the material taught and the media learning used
7	In Informatics, media what kind of learning has been used in learning?	Text books, videos learning, and power points
8	Do you see differences in the methods and outcomes of learning class X Engineering Automotive students in Informatics subjects?	Yes, differences can be seen from the learning media used
9	What is your process in planning informatics learning for class X Engineering Automotive students?	By creating TP, ATP, and student modules
10	How do important it is to improve outcomes you think student learning in Informatics?	Very important, because Informatics / computers are very useful for current and future life

Based on the results of interviews that have been conducted, it can be concluded that SMK Negeri 1 Bonjol has implemented an independent curriculum which requires teachers to be able to apply learning media that can increase student enthusiasm for learning. But in reality, there are still challenges during teaching, such as students who are less motivated in the subjects taught, namely Informatics. In addition, students are also less interested in learning Informatics subjects because they think Informatics subjects are different from the majors they are interested in, namely Automotive. This certainly has an impact on students who find the subject difficult to understand, causing low learning outcomes, which are below the established KKTM.

This problem can certainly be overcome, such as trying to apply interactive learning media so that Informatics can be an interesting subject to learn, so that student learning outcomes can improve. This is supported by several previous studies, such as research by [13][14][15], who assert that learning media is a crucial component of the educational process . Learning media serves as an educational resource that enables teachers to expand students' perspectives. As noted [16], Wiratmojo and Sasonohardjo assert that the learning media employed during instruction significantly influences the learning process and the conveyance of material. [17] asserted that learning media assists educators in capturing students' attention, hence preventing boredom or saturation during the educational process.

Teachers can utilize Wordwall interactive media to engage students' attention. Prior research addressing the utilization of Wordwall media as interactive media has been undertaken by [18]. The study's results demonstrated that Wordwall media effectively enhances student engagement in learning. This is evidenced by the elevated activity scores achieved. Moreover, the utilization of this medium is efficient in enhancing educational outcomes and student engagement in learning.

Additionally, [19] conducted a study on the efficacy of Wordwall media. The findings demonstrated that the use of Wordwall media markedly enhanced pupils' academic performance. Furthermore, Wordwall media fosters a more engaging and enjoyable educational environment for students. Wordwall can enhance student engagement, improve material retention, and offer prompt feedback.

[20] in their research explained that Wordwall proved effective in improving student learning outcomes because Wordwall provides a variety of features that support learning . The available features such as Match Up, Quiz, Random Wheel, Missing Word, Group Sort, and Gameshow Quiz can create a fun, challenging, and motivating learning atmosphere, Unjumble and Anagram can hone logical thinking and language skills, Abelled Diagram and Group Sort help students understand concepts through visual approaches and categorization, and Maze Chase, Airplane, and Balloon Pop can train concentration, reflection, and quick decision making.

From the results of observations, interviews, and supported by previous research, it is necessary to use Wordwall interactive learning media in an effort to help students who have difficulty in understanding material in Informatics subjects. This is because Wordwall has advantages, namely it does not require fees for basic selection with a choice of 5 templates. In addition, Wordwall offers many types of games that can support the learning process. Wordwall can also be shared directly through Whatsapp, Google Classroom, or other applications.

IV. CONCLUSIONS

Based on the results of the study, the following conclusions were drawn. First, based on the observation, it is known that SMK Negeri 1 Bonjol has provided adequate technology such as computer laboratories to facilitate learning. However, teachers have not been able to fully utilize this technology due to lack of knowledge of learning media that can be used. Second, based on the results of interviews, it is known that students are less motivated in learning Informatics, so that learning outcomes are low or have not reached the established KKTP. Third, seeing the existing problems, the use of interactive media such as Wordwall is needed because this media provides various features that are fun, challenging and can motivate in learning Informatics.

With this research, it is suggested that subject teachers are expected to use Wordwall interactive learning media in the learning process, especially in Informatics subjects. Schools need to provide support in the form of adequate facilities and access so that teachers and students can use Wordwall optimally in learning. For further researchers, this research is expected to further develop the use of interactive learning media Wordwall and make this research a reference to overcome similar problems.

REFERENCES

[1] A. P. Wulandari, A. A. Salsabila, K. Cahyani, T. S. Nurazizah, and Z. Ulfiah, "Pentingnya Media Pembelajaran dalam Proses Belajar Mengajar," *J. Educ.*, vol. 5, no. 2, pp. 3928–3936, 2023.

[2] A. A. Muis, "Peranan Internet sebagai Sumber Belajar dalam Meningkatkan Minat Belajar Pendidikan Agama Islam Peserta Didik Kelas XI di SMA Muhammadiyah Parepare," *J. Al-Ibrah*, vol. 10, no. 1, pp. 189–222, 2021.

[3] A. Qomarudin, "Aktivitas Pembelajaran sebagai Suatu Sistem," *Piwulang J. Pendidik. Agama Islam*, vol. 4, no. 1, pp. 24–34, 2021.

[4] R. Rohani, "Media Pembelajaran," 2020.

[5] J. Hadi, Y. A. S. Anwar, and D. Salsabila, "Peningkatan Hasil Belajar Siswa Kelas VB Menggunakan Model Pembelajaran Problem Based Learning (PBL) dengan Media Manipulatif," *J. Pendidikan, Sains, Geol. dan Geofis. (GeoScienceEd Journal)*, vol. 6, no. 2, pp. 658–663, 2025.

[6] S. Suhairi, "Stres Akademik Siswa Selama Pembelajaran Daring di SMP Negeri 1 Binjai Kabupaten Langkat serta Implikasinya dalam Bimbingan dan Konseling.," *Al-Irsyad J. Pendidik. dan Konseling*, vol. 12, no. 1, pp. 26–39, 2022.

[7] R. Anggraeni and A. Effane, "Peranan Guru dalam Manajemen Peserta Didik," *Karimah Tauhid*, vol. 1, no. 2, pp. 234–239, 2022.

[8] A. M. Abidin, "Kreativitas Guru Menggunakan Model Pembelajaran dalam Meningkatkan Hasil Belajar Siswa," *Didakt. J. Kependidikan*, vol. 11, no. 2, pp. 225–238, 2019.

[9] A. Mutiara, A. Alfiriani, and R. Novita, "Pengembangan E-Modul Interaktif pada Materi Analisis Data Mata Pelajaran Informatika Kelas X di SMKN 1 Solok Selatan," *JATI (Jurnal Mhs. Tek. Inform.*, vol. 8, no. 5, pp. 10558–10565, 2024.

[10] M. Ninawati, "Efektivitas Penerapan Aplikasi Linktree dan Wordwall terhadap Motivasi Intrinsik Siswa Kelas V Sekolah Dasar," *J. Pemikir. dan Pengemb. Sekol. Dasar*, vol. 9, no. 2, pp. 217–225, 2021.

[11] E. K. Aribowo, "Wordwall: Media Pembelajaran Interaktif Mulai dari Quiz, Wordsearch, hingga Anagram," *Erickunto. Com*, vol. 3, 2021.

[12] S. Purnamasari, F. Rahmanita, S. Soffiatun, W. Kurniawan, and F. Afriliani, "Bermain Bersama Pengetahuan Peserta Didik melalui Media Pembelajaran Berbasis Game Online Wordwall," *J. Pengabdi. Masy.*, vol. 3, no. 1, pp. 70–77, 2022.

[13] T. Nurrita, "Pengembangan Media Pembelajaran untuk Meningkatkan Hasil Belajar Siswa," *J. misykat*, vol. 3, no. 1, pp. 171–187, 2018.

[14] U. Wahidin, "Implementasi Literasi Media dalam Proses Pembelajaran Pendidikan Agama Islam dan Budi Pekerti," *Edukasi Islam. J. Pendidik. Islam*, vol. 7, no. 02, p. 229, 2018, doi: 10.30868/ei.v7i2.284.

[15] N. Zebua, "Potensi Aplikasi Canva sebagai Media Pembelajaran Praktis Bagi Guru dan Peserta Didik," *Educ. J. Pendidik.*, vol. 2, no. 1, pp. 229–234, 2023.

[16] J. Junaidi, "Peran Media Pembelajaran dalam Proses Belajar Mengajar," *Diklat Rev. J. Manaj. Pendidik. dan Pelatih.*, vol. 3, no. 1, pp. 45–56, 2019.

[17] H. Zaini and K. Dewi, "Pentingnya Media Pembelajaran untuk Anak Usia Dini," *Raudhatul Athfal J. Pendidik. Islam Anak Usia Dini*, vol. 1, no. 1, pp. 81–96, 2017.

[18] K. Maghfiroh, "Penggunaan Media Word Wall untuk Meningkatkan Hasil Belajar Matematika pada Siswa Kelas IV MI Roudlotul Huda," *J. Profesi Kegur.*, vol. 4, no. 1, pp. 64–70, 2018.

[19] M. Zaniyati and R. Rohmani, "Analysis of the Effectiveness of Pop-Up Book Media on Science Learning in Elementary Schools," *IJORER Int. J. Recent Educ. Res.*, vol. 5, no. 4, pp. 919–934, 2024, doi: 10.46245/ijorer.v5i4.641.

[20] E. Kusnadi and S. A. Azzahra, "Penggunaan Media Pembelajaran Interaktif Berbasis Wordwall dalam Meningkatkan Motivasi Belajar Peserta Didik pada Mata Pelajaran PPKn di MA Al Ikhlash Padakembang Tasikmalaya," *J. Dimens. Pendidik. dan Pembelajaran*, vol. 12, no. 2, pp. 323–339, 2024.