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Interactive Game Media Development Wordwall Website Based on Class V Elementary School Science Lessons

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Abstract

This research was motivated by the low critical thinking skills of students in science learning. This study aims to This research aims to develop a learning media in the form of an interactive game using the Wordwall platform which is accessed via the website for Natural Sciences (Science) subjects at the Class V Elementary School level. The focus of the research lies in two initial stages, namely analysis and design. The analysis stage involves identifying student learning needs, collecting data related to the science curriculum, as well as evaluating effective learning methods for understanding grade V science material. From this analysis, the main objective is to ensure that the interactive games developed are in accordance with the applicable curriculum and meet needs. student learning. The design stage is related to detailed planning for the development of the interactive game. Selection of game type, material content presented, interactivity, and user interface are the main focus at this stage. This design is aimed at optimizing students' learning experiences and ensuring that the game can provide a deep understanding of class V science concepts. Although this research only reached the analysis and design stage, these steps are an important foundation for further development. It is hoped that in-depth analysis and well-planned design can make a significant contribution to the development of this interactive game media in supporting the science learning process for fifth grade elementary school students. The implementation, development and evaluation stages will be the next steps which are expected to produce useful and effective learning media.

Keywords:
Interactive, Learning Media, Wordwall

A. INTRODUCTION

Development approach innovative learning in education Knowledge Natural Science (IPA) becomes increasingly important in level education elementary school, especially in grade V elementary school (Dwi Puspa, 2022) . In an era where technology growing quickly, students the more exposed to various technology contemporary, which has an impact on the way they learn and interact with information. Development This fast technology also causes pattern thought and behavior students changed drastically. According to Elsaadani (2012) technology information and communication has change preference Study student Because ability them to get information in a way instant and interactive. Therefore, method learning must be immediately adjusted to comply preferences and style learning that is influenced by progress this technology.

By becoming more accustomed to use digital devices, such as computers, tablets and cell phones, students tend to be more responsive to approach learning technology. Approach involved learning element interactive, visual, and multimedia possible students to participate in a way active in the learning process (Lestari & Kurnia, 2023) . Learning methods that use technology can too increase experience Study students, help they understand more complex concepts, and improve desire them to learn more about lesson.

At the fifth grade elementary school level, students often face challenge alone to understand draft complex science. Approach Innovative learning, which uses interactive media, visuals and games, can help student understand material lessons more easily. This is because these ideas often abstract and difficult understood without help experience or visualization real (Borrego, 2021) . With skill think critical, students can evaluate argument,

analyze information in a way critical, and developing various perspective.

Importance application approach Structured and innovative learning at the fifth grade elementary school level is not only related to ability students in understanding concepts complex scientific, but also in support development Skills think Critical and analytical are important in solving problem as well as understanding towards the world around (Putra et al., 2023) . Based on results observation early at SD Negeri Argasari, District Cihideung, Tasikmalaya City on February 14 2023, discovered that school Still use 2013 curriculum, except for classes I and IV which have adopt curriculum Study independent. Although the teacher has utilise technology information and communication, such as learning videos from the YouTube platform, approach teaching carried out Still part big limited to use book abstract image packages and media. This limitation causes difficulties for students in understanding material in class V science lessons, especially in Theme 6 about Heat and its Transfer, Subtheme 1 which discusses Temperature and Heat. This is due to Because lack of Power pull of the media used, which has an impact on difficulty understanding student to material the (Yafa et al., 2023) .

At the fifth grade elementary school level, implementation approach structured and innovative learning is very important to build a solid foundation for students to develop interests and abilities they are in science knowledge nature in the future (FAROOQI et al., 2020) . Hence, approach more structured and innovative learning needed to be sure that student understand and master concepts it at this level. This can achieved through development Wordwall, interactive game media web-based, in science lessons in fifth grade elementary school.

According to Dirgantini & Tarsono, (2022) development of interactive game media Wordwall website- based science lessons in grade V elementary school go beyond simply aspect learning conventional. In an era where technology information and communication the more dominate, integration technology in the learning process become it is increasingly important to prepare student face complex future challenges (Hidayat & Nizar, 2021) . Interactive game media Wordwall, with features interactive and approach learning interesting, yes help student develop Skills critical, creative, as well collaboration required in dealing with global competition. Apart from that, through experience interactive provided by game media, students can Study in a way active and involved in the learning process in a fun way. This medium makes it possible students to experience learning directly through challenges, solutions problems, and collaboration with others student (Indra Sukma et al., 2022) . Thus, students can develop Skills adaptability, innovation, as well solution the problem becomes key success in dealing with constantly changing environment.

interactive game media Wordwall can also help prepare students in facing demands progress technology in place work and life daily (Lailiya et al., 2023) . By understanding concepts scientific through direct and interactive experience, students can develop deep understanding as well as Skills technology needed to deal with it jobs in the future increasingly automated and digital (Rahim et al., 2022) . Thus, the development of interactive game media Wordwall website- based science lessons in grade V elementary school not only help increase involvement students in the learning process, but also preparing they face future challenges with skills that are relevant and needed in the ever-changing modern era.

Experience interesting and interactive learning help student develop potency best them and prepare them to face various possible challenges they meet in the future (Novyanti et al., 2022) . At age early, development these skills become an important basis for ability students in facing fast and dynamic world change. By considering importance development Skills

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think critical and creative, approach learning innovative can become effective means of facilitating development this skill. Furthermore, development approach learning innovative is also encouraging involvement active students in the learning process.

Student can obtain better understanding of material science lessons by developing Skills think critical and creative through use of interactive game media Web-based Wordwall (Indriyanti & Maulana, 2022) . Approach This innovation also helps student prepare self them to face increasing future challenges challenge by instilling Skills think critical and creative, which is an important basis for dealing with Based on background back above, goal from this research is to offer method learning combining alternatives technology contemporary while still guard material lessons in accordance with the existing curriculum set (Oktariyanti et al., 2021) . Expected that use this technology can help increase understanding student to complex science concepts through visualization, interaction, and challenge in form games that can be increase involvement active they are in the learning process.

B. METHOD

The research model used in this research is method development research using ADDIE model approach. According to Tegeh & Kirna (2013) , the ADDIE model consists of of five stages of development, viz analysis, design, development, implementation, and evaluation. The selection of this research model was carried out based on channel simple and doable research implemented easily by researchers. Following is description about method ADDIE model research.

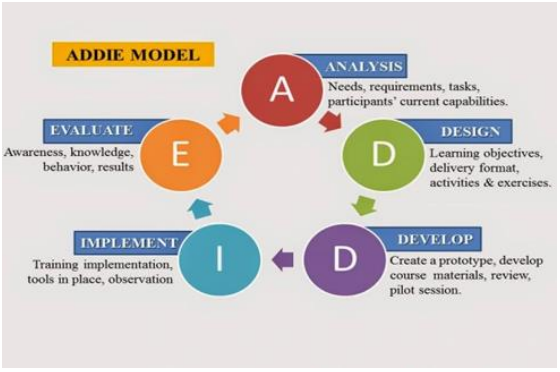

Figure 1. Stages Development of the ADDIE Model

First, stage researcher 's analysis gather information about the problem you want solved, need participant educate, as well objective the learning you want achieved. At stage this, researcher will do analysis deep about needs and characteristics student (Andi Rustandi & Rismayanti, 2021) . Second, the Design stage, after analysis done, stage design involve planning detailed related How material learning will composed, interactive games use wordwall web application that will used, as well determining evaluation strategies. Stage This focuses on designing framework appropriate learning with need participant educate. Third, stage development, plans that have been designed will implemented become a learning medium in the form of an interactive game use wordwall web application. This process involve making material learning, module, or other required teaching materials _ For objective learning that has been done set (Rohaeni, 2020) . Fourth, after interactive games use wordwall web application finished developed, stage implementation done For run the program in environment actual learning. Stage This involve implementation of interactive games use wordwall web app, interaction between participant educators and facilitators, as well adjustment in accordance with need real in the field. Stage final in the ADDIE model is evaluation. Stage This covers evaluation to effectiveness of interactive games use wordwall web application that has implemented. Evaluation done For

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determine as far as the goal learning achieved and whether There is repair or necessary adjustments done For increase future effectiveness of the program.

In this research, focus main has focuses on two initial stages of the five general stages of development done in a project. Analysis stage become step possible start understanding deep to the problem or topic being researched. Here, research has investigate, analyze, and collect relevant information as well as formulate question or goal research carefully. After that, the design stage become The next important step, which involves planning detailed about How concept or solution will developed. At this stage, possible strategies, tools, or methods will be used used in development taken into account in a way carefully. Although only Up to this stage, in -depth analysis and careful planning expected has give a solid foundation for the steps further in the development process this project .

C. RESULTS AND DISCUSSION

Based on results findings, this research will arranged as following: first, will explain data analysis regarding about problem science learning in fifth grade elementary school. Second interactive game design use wordwall web application.

1. Analysis of Science Learning Problems in Fifth Grade Elementary School

Based on results observations and interviews conducted, revealed that majority student class V face difficulty in answering question as well as reach low grades in learning material Temperature and Heat. This finding is indicative exists barriers to understanding draft in between student. Additionally, from results interviews, participants Didik also admitted that concepts related to material Temperature and Heat felt difficult understandable, probably caused by a lack of understanding to the terms used. They rely explanation contained in the book package as source main learning, however feel that approach the not enough interesting and inclined monotonous, so lower interest learning and engagement them in the material the. Therefore this shows necessity adoption approach more interactive and interesting learning, as well expansion source Power richer and more interesting learning for students class V in understanding material Temperature and Heat. This can help increase interest learning, engagement, and understanding student to complex concepts in the field of science (FAROOQI et al., 2020) .

Based on analysis the learning understood as an active process in which students build understanding they Alone through interaction with the environment. In this context, difficulty students in understanding draft Temperature and Heat can So caused by incompetence they are in construction complete understanding related to the concept the. Limitations source Power Interesting and interactive learning can also be done hinder the construction process understanding they. Whereas difficulty students in understanding material Temperature and Heat as well low motivation Study can related to theory motivation intrinsic and extrinsic . Lack of interest Study can caused by boredom felt by students consequence Monotonous or insufficient use of learning media interesting (Sayyadi et al., 2016) . Encouragement Minimal intrinsics are also possible influence involvement students in learning.

Furthermore difficulty students in understanding terms related to the concept Temperature and Heat possible caused by a lack of adequate interaction in the learning process. Limited use of media, e.g only based on books package, yes hinder interactions necessary for understanding complex concepts (Oktariyanti et al., 2021) . Teaching theory interactive emphasize importance interaction between teachers, students, and material learning.

2. Interactive Game Design Use Wordwall Web App Determining Learning Goals

In interactive game design use Wordwall web application, purpose

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learning mainly is to give experience fun and interactive learning to student around draft displacement heat and how source energy hot can cause change (Dirgantini & Tarsono, 2022) . Through this interactive game , it is hoped student can understand draft displacement heat in a way practical and capable apply it in life every day with responsibility answer.

The game designed to challenge students in doing various involving virtual trials source energy hot , with purpose give deeper understanding about mechanism displacement heat (Yafa et al., 2023) . Apart from that, it is hoped that this game will also be able to push students to report results observation they in a way accurate and precise regarding displacement heat that occurs in the situation real.

Through use of interactive games Wordwall, students expected can learn in a more fun and interesting way, which in turn can strengthen understanding draft in a way conceptual at a time its application in life daily (Khofifah Indra Sukma & Trisni Handayani, 2022) . Thus, it is expected that this game can stimulate interest Study student to complex topic like displacement caloric, while help they build solid understanding and ability report results observation in a way appropriate and responsible answer.

3. Selection of Game Type

In this case, researchers has succeed make four interactive games on different topics, inclSequencing Group, Gameshow Quiz, Whack-a-mole (Hitting the Mole), and Crosswords. Every game has designed using features interactive available on Wordwall, so possible students to learn in an interesting and fun way. If there are need additional or further questions, the teacher can use the above information to access and manage interactive gaming products the. By using interactive game variations like sorting groups, gameshow quizzes, whack-a-mole, and puzzles cross, students can learn in a fun and interactive way, which in turn can strengthen understanding they about draft displacement heat in a way whole.

To take advantage of application Wordwall as a learning medium thematic, step necessary start done is register or create account on the official site Wordwall at https://wordwall.net (Etika Sari et al., 2023) . After accessing the site, teachers can clicking option registration and filling form with the required information, incl Name complete, secure email address and password. As for the picture as follows.

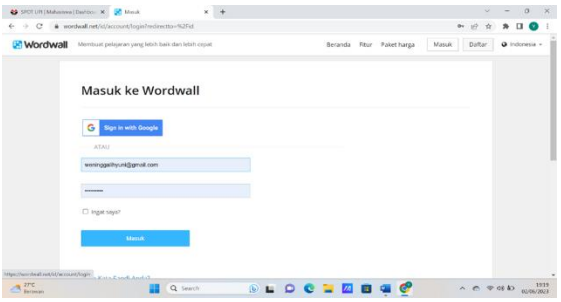

Figure 2. application Wordwall

After account succeed created, make sure to complete the profile data with relevant information. Teachers can add details like contact or information education. Next, familiarize yourself with the interface important application to understand various available features and options. Start by creating activity first Master, like arrangement various type game interactive, for example sequencing, quizzes, or puzzles. Save results Master's work well and make use of it option share to share activity to students or colleagues of the Teacher. By following these steps, Teachers can optimizing use Wordwall in learning thematic and enhancing interactivity in the learning process (Hidayat & Nizar, 2021) .

First, Sequencing Group. In this game, students asked to sort the steps or processes associated with the move heat based on order time or priority certain (Mardiyah et al., 2022) . They will clicking and dragging the right elements into the right order, so that possible them to understand proper order from events that occur during migration heat .

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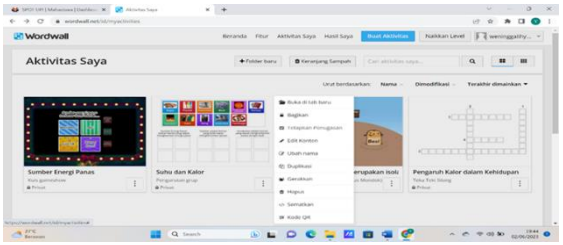
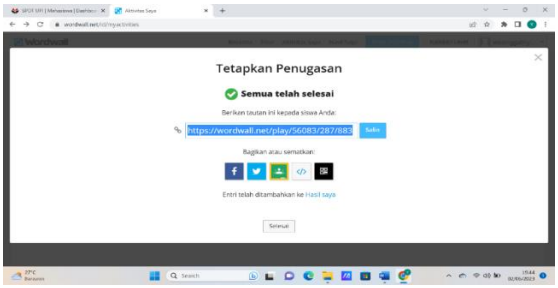


Figure 3. Sequencing Group

next step is share the link https://wordwall.net/play/56083/287/883



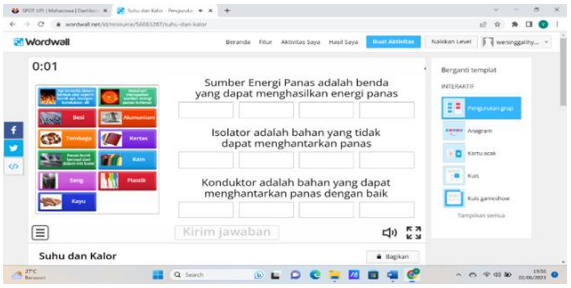
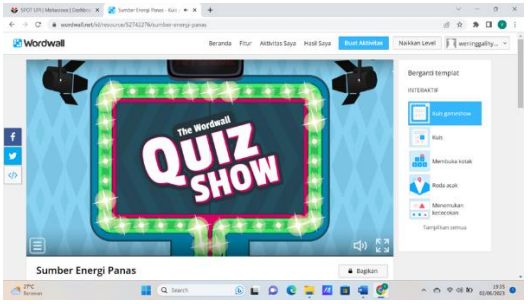
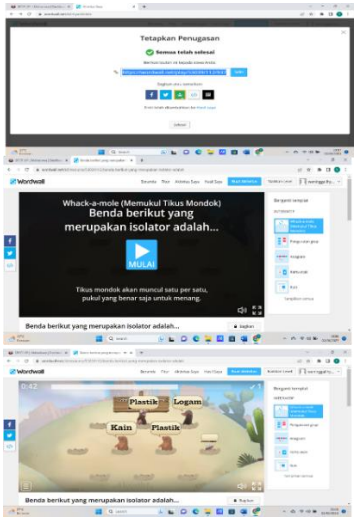


Figure 4. Game Elements

Second, Quiz Gamesho. This game will displays series question around draft displacement heat, incl definition, types displacement heat, and examples from life daily (Pratama et al., 2019) . Student will answer questions in time _ limited to obtain score highest . This quiz will motivating students to understand draft in a way deepen and improve understanding they about material.



Whack-a-Mole (Whack a Mole): In this game , students will " hit " symbols or terms related to movement the heat that appears in a way random in layers (Etika Sari et al., 2023) . They will challenged to recognize and connect terms with the appropriate concept, so strengthen understanding they about terminology related to displacement heat.



Crossword: This game will displays puzzles crossword containing words or terms related to movement heat. Student will search for appropriate words based on the instructions given , so possible them to deepen understanding they about the

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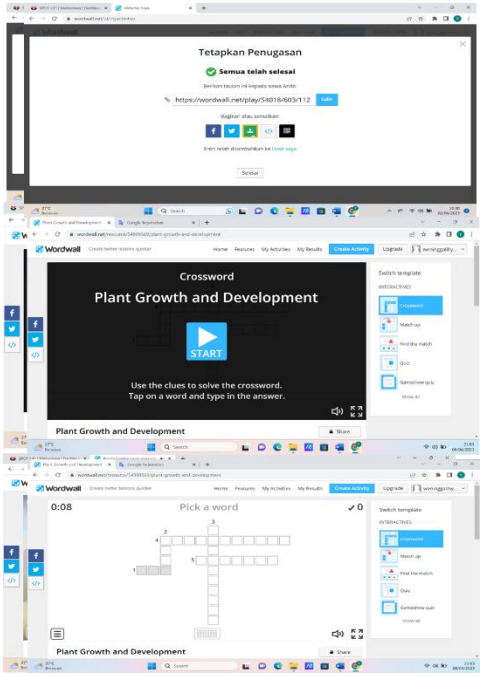
concepts involved in displacement heat.



D. CONCLUSION

This research focuses on the development of interactive game media using the Wordwall platform for learning Knowledge Natural Science (Science) class V Elementary School, found significant results at the analysis and design stage. Analysis deep about science curriculum and needs Study student has give powerful insights for designing this interactive game. Design stage produce detailed plan, includes election game type, content the material presented, the interactivity, and the interface user to be sure experience optimal learning. The results of this study confirm that step this beginning has been form a solid foundation for the development stage furthermore. It is hoped that further implementation and evaluation will be carried out will validate the effectiveness of this media in enriching science learning for fifth grade elementary school, provides a fun and educational approach for students.

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