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Development of soft skill-based interactive media on thematic learning

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Abstract:

An interactive learning strategy was a method or technique the teacher used when presenting learning materials where the teacher became the main actor in creating an educative interactive situation. The objective of this study was to create interactive media for theme learning that focuses on the development of soft skills and to evaluate its quality and usefulness. This study used Borg and Gall's Research and Development (R&D) approach, with four parsimonious stages of development: analysis, design, development, and implementation. This research used observation and interview sheets as data collection methods. The interactive media's validity, quality, and efficacy based on soft skills were assessed through instrument and product validation methods involving media specialists and reviews from instructors and students. The study showed that students and teachers rated interactive learning media based on soft skills in the high-quality category. In addition, soft skill-based learning media was considered effective in fulfilling the criteria for assessing teacher activity in learning media, namely in the very effective category. It was concluded that the soft skill-based interactive learning media developed in this study were valid, high quality, and effective, so they were suitable for use in Penggalang 4 public elementary schools. We recommend that schools implement interactive media based on soft skills so that students become active and critical learners. Future research can adapt our model to other educational levels or domains, such as employee business development.

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INTRODUCTION

Due to the COVID-19 pandemic, many educational institutions, which previously had regular physical, face-to-face classes, have resorted to online teaching and learning that is characterized by a mode of teaching and learning that occurs through electronic



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devices (Selvaraj et al., 2021). In Indonesia, the 2013 Curriculum was implemented in elementary schools using a thematic approach. In essence, this thematic approach, influenced by an interdisciplinary curriculum, aims to integrate all subjects in elementary schools into one learning activity tied to a common theme. The subjects taught integratively are Indonesian, Civics, Social Sciences, Science, and SBdP (Seni Budaya dan Prakarya, or Arts and Crafts).

The improvement of students' soft skills in elementary school thematic learning is strongly influenced by practical learning, which includes teaching methods, learning techniques, media, infrastructure, and the quality of human resources (Chang, 2012; Sumardi et al., 2020). For instance, a complete Infrastructure is crucial because it is necessary to have audiovisuals that can be accessed from the Internet, as well as video recordings of learning packages. To ensure effective and dynamic learning, soft skill-based interactive media is needed as a learning resource to assist the learning process that is easily understood by students and empowers students to achieve learning outcomes and to face the competency test. Therefore, it is imperative to incorporate disciplines that possess integrative significance to cultivate students' soft skills, facilitating their ability to adjust to dynamic environments, address emerging challenges, and internalize ethical principles. In other words, thematic learning not only promotes knowledge acquisition (learning to know) but also encourages students to learn to do (learning to do), be (learning to be), and live together (learning to live together).

However, the development of interactive media in Indonesian elementary schools still needs to be improved. Thematic learning in elementary schools is one of the lessons that can instill life skills education in students (Siregar, 2020). The results of interviews conducted with representatives of Cilacap district teachers indicated that the use of textbooks and traditional teaching methods, such as the use of blackboards and a teacher-centered approach, still prevails and that teachers' understanding of science and technology in using interactive media applications is minimal

Learning media is a messenger tool that can be used for learning purposes (Brown, 2017; Irawan, 2021; Napratilora et al., 2020; Nemorin et al., 2023; Nikmah & Qohar, 2023). Many learning media can be used, but before using it, it has been advocated that the teacher must know the student's needs to realize the media optimally (Bower et al., 2014; Puspitarini & Hanif, 2019). Interactive media, meanwhile, is created with multimedia technology. Multimedia is a collection of systems and computer-based media that can create, receive, send, and store information in images, graphics, text, audio, animation, video, and others (Gartika et al., 2019; Kustyarini et al., 2020; Savov et al., 2019). Interactive learning multimedia combines images, graphics, text, animation, video, sound, and simulations synergistically and integrated with computers to achieve learning objectives where users can actively interact and control the program. Research indicates that using interactive multimedia can potentially solve problems in the teaching and learning process (Baidoo-Anu & Ansah, 2023; Behnamnia et al., 2022). Additionally, using technology as a medium can help students be more interested in learning, while media containing video, audio, and animation enhances the understanding of students (Nusir et al., 2013; Rachmavita, 2020).

Multimedia learning involves utilizing different media, including text, images, and videos, that are interconnected to achieve specific learning objectives (Kuba et al., 2021). Learning media provides several benefits such as (a) making abstract concepts more tangible by using various media; (b) providing access to objects that may be difficult to

access in the environment, for instance, using photos, CDs, videos, or television to present information about wild animals like tigers; (c) categorizing objects that may be too large or small, such as planes, ships, viruses, or bacteria; and (d) demonstrating movements that may be too fast or too slow, or processes that are too slow to observe, for example, seed development stages, the blooming process of flowers, through the use of videos (Indriana, 2011). Meanwhile, three types of learning media are available: (a) audio media that depends solely on sound, including radio and cassette recorders; b) visual media that rely on sight and can display images, silent films, and cartoons; and (c) audiovisual media that have both sound and visual elements, such as television and learning CDs (Fathurrahman & Sutikno, 2014). Therefore, this research aimed to develop high-quality and effective soft skill-based interactive media for thematic learning in elementary schools. The use of interactive multimedia in education has the potential to make learning more engaging and effective, as it provides a complete understanding of the material through the use of videos, animations, and other interactive elements.

Previous research has sought Interactive E-books for learning a foreign language and mobile learning for stoichiometry (Cahyana et al., 2021; Saddhono et al., 2020). These studies should pay more attention to social media based on soft skills. Therefore, this study addresses a research gap by developing interactive media centered on soft skills and advocating its effective implementation in Indonesian elementary schools. The primary objective is to facilitate practical learning approaches and enhance students' soft skills. The importance of this research is, of course, to facilitate the teacher's role in providing teaching materials so that students can easily accept the material provided during the process of teaching and learning activities because the main reason is to improve the soft skills that students have in thematic learning that is currently applied.

The research that we conducted has several advantages. Where these advantages impact knowing clearly where to improve these soft skills, media that is easily applied by students, digital-based and easy to use, is needed. Then, previous research has several similarities, namely from the results of research (Marlina, 2019) in cycle I show that the time management component gains 15% then increases in cycle II to 42%, creative thinking gains 12% in cycle I increase to 76% in cycle II, transformation character which in cycle I gain 9% increases in cycle II becomes 45%, the ability to motivate in cycle I gain 6% then in cycle II increases to 52%, the ability to lead from cycle I obtain 6% increases in cycle II to 15%. The ability to speak in public gained 12% in cycle I and increased in cycle II to 39%.

Research Methods

Methods

The Research and Development (R&D) approach Borg and Gall (2017) was employed as the research design to develop interactive media focused on developing soft skills. Research and development is employed to create or improve existing products and test their effectiveness. The current study incorporates ideas from earlier research and development studies by Borg and Gall (Maharani et al., 2019; Riyana, 2018; Suwiji et al., 2021). The R&D approach comprises four stages: Analysis, Design, Development, and Implementation. The stages involved are summarized in Table 1. According to the study's goals, An empirical observation with a semi-structured questionnaire was conducted on three experts, two teachers, and five students at

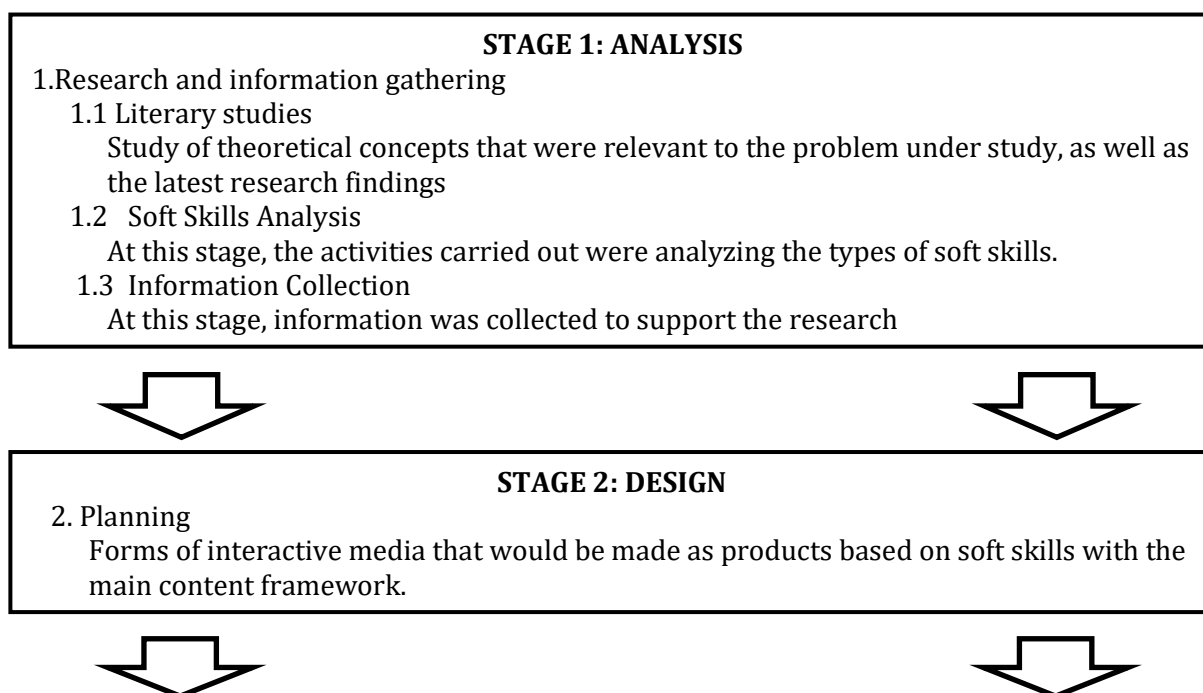
Penggalang 04 public elementary school in the Cilacap region from May to June 2022. Neuman (2014) stated that observations can either be qualitative (expressed as words, images, or objects) or quantitative (expressed as exact numbers). This study gathered primary data sources through observation, field notes, and interviews. Secondary data sources were gathered through literature studies. The observation was used as a data collection technique to learn more about the general behavior, attitude, and environment in the study. The research data was gathered through a qualified validation questionnaire, educator response questionnaire, student response questionnaire, and data analysis using the Likert scale. In the current research, scores were scored from 1 to 5, with 5 being the highest and 1 being the lowest.

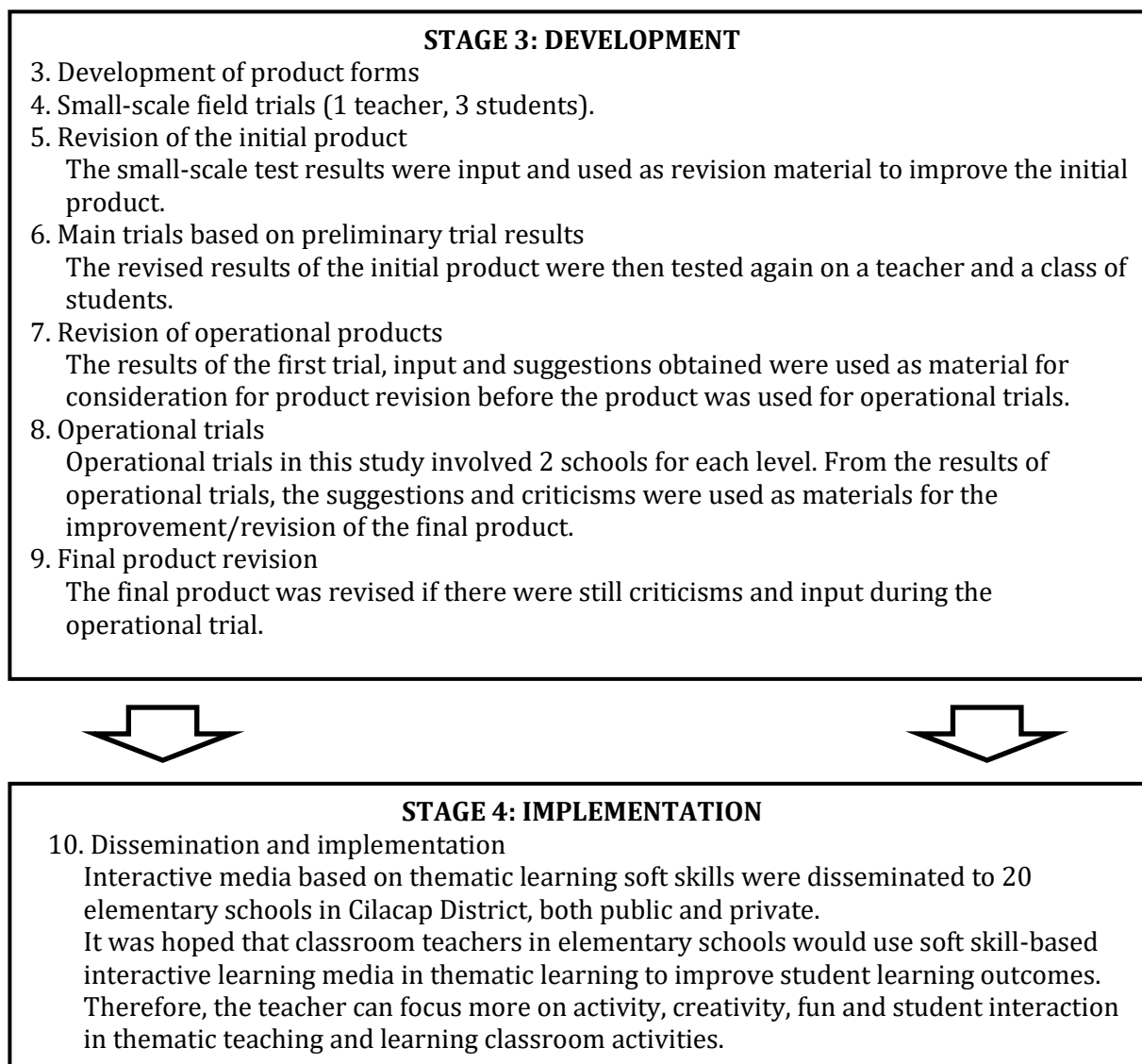
Instrument

The instruments used for developing this interactive learning media were interviews to obtain information on events that are often experienced, observation activities to see the results of interview activities directly, and questionnaires to obtain information from respondents about themselves. However, to fulfil the purposes of this study, expert validation questionnaires, teacher assessments, and student assessments were presented. Then, a series of reciprocal assessments were carried out to assess the practicality of the interactive media centered on the cultivation of soft skills in this research. Experts in the media field evaluated its viability based on its aesthetic appeal, color scheme, and ease of use. A material expert also verified the material's suitability for KI (core competence) and KD (basic competence), material accuracy, material updating, and stimulating curiosity. Afterward, teacher and student perspectives on the possibility of media in a practical way were addressed.

Procedures

This study's 4-stage Research and Development Model used Borg and Gall (2017) Research and Development Model. An explanation of each stage of the Research and Development Model is summarised in Picture 1.





Picture 1. The Four-Stage RnD Model, Modified from Borg and Gall

Data Analysis

Data obtained through the assessment instruments (questionnaires) were analyzed using descriptive statistics techniques using SPSS statistics. Descriptive statistics encompass numerical and graphical methods to summarize and conclude data, making it easier to read, comprehend, and make sense of. The data analysis in this study aimed to determine the feasibility and effectiveness of interactive media based on soft skills. It was explained that there were four forms of students' soft skills: communicating or interacting more with other individuals and practicing social sensitivity.

The feasibility of the interactive media based on soft skills was determined based on the data analysis obtained from the assessment of a reviewer group of expert lecturers, teachers, and students. Hence, the analyses of the results were presented according to the validations by the experts; the feasibility of soft skill-based interactive media was determined based on the analysis of data obtained from the assessment of

the reviewer group consisting of media expert lecturers, language expert lecturers, material expert lecturers, then from teacher assessments and student assessments.

Research Result

Analysis

Based on interviews with class teachers about the importance of soft skills that every elementary school student must own to support the learning process given by the teacher to students, students need competitiveness in teaching and learning activities, so teachers should use learning strategies containing the development of soft skills. Strategies that allow soft skills development can optimize interactions between teachers and students, students and students, teachers and students and the environment, and multidirectional interactions. Besides that, the teacher's creativity can also provoke students to be physically, mentally, socially, and emotionally involved. Thus, if students are used to doing this, they will carry it over when involved in society.

Design

The second stage of the Analyze, Design, Development, Implementation, Evaluation (ADDIE) development model is the design stage or planning. At this stage, the researcher began to design learning modules that will be developed. This design stage has four steps: preparation of the framework, collection and selection of references, preparation design, and preparation of learning assessment instruments.

a. Framework Preparation



Picture 2. Cover image

b. Design drafting



Picture 3. Basic competence

c. Assessment Preparation



Picture 4. Learning assessment

Development

The third stage of the ADDIE development model is the development stage. This stage aims to see the extent of the feasibility of interactive media based on soft skills that have been designed. After completing the pre-writing, drafting, editing, and revision stages, a web-based interactive learning media was developed in the Development Stage. Media was made based on concepts that have been made using PowerPoint.

Results obtained from Expert Validation

The recap of the results of the three expert validations is summarized in Table 1 below.

Table.1 Results obtained from Expert Validation

No.	Expert validation	Average	Criteria
1	Results Deriving from Media Experts' Validation	4.7	Very Valid
2	Results deriving from Material Expert Validation	4.75	Very Valid
3	Linguist Validation Results	4.75	Very Valid

Based on the evaluation results, the developed soft skill-based interactive learning media has an average feasibility level of 4.7, indicating a very valid level. Therefore, the media is considered feasible for use without further revisions. The average score for the materials is 4.75, indicating that they are highly valid for presentation. As a result, the interactive learning materials based on soft skills that have been developed are suitable for use without any further revisions. The average score for language is 4.75, indicating that the language is very valid for presentation. As a result, the developed soft skill-based interactive teaching materials are feasible to use without further revision. Meanwhile, the practicality assessment was part of the formative evaluation activities conducted during development. The practicality of the media was assessed by teachers based on three aspects: the learning aspect, language use, and the media aspect. Table 5 shows the results of the assessment.

The Practicality of the Media from Teachers' Assessments

Meanwhile, the practicality assessment was part of the formative evaluation activities conducted during development. The practicality of the media was assessed by teachers based on three aspects: the learning aspect, language use, and the media aspect. Based on the data collected from teachers' assessment responses on the practicality, it was found that the average total score for the interactive media based on soft skills was 4.7, indicating that the interactive media based on soft skills generally fell into the high-quality category.

The Practicality of the Media from Students' Assessments

The students also carried out the practicality assessment as part of the formative evaluation activities conducted during the development stage. Similarly, the practicality of the media was assessed by students based on three aspects: the learning aspect,

language use, and the media aspect. Based on the data collected from students' assessment responses on the practicality, it was found that the average total score for the interactive media based on soft skills was 4.8, indicating that the interactive media based on soft skills generally fell into the high-quality category.

Effectiveness of the Media Based on Teacher Activity Assessment

It appears that effectiveness was evaluated concerning formative evaluation activities. Specifically, during the development stage, an evaluation was conducted to measure the feasibility and effectiveness of the media using a teacher activity assessment sheet. Based on teacher activity response data, it was found that the average total score of interactive media based on soft skills was 4.9. This score indicates that, in general, interactive media based on soft skills fell under the "very effective" category.

Main Product Revision

a) Material expert validation

Material experts get advice from the validator team for products that have undergone validation from the validator team. Suggestions from the validator can be used as a basis for product improvement. The results of revisions by material experts use "Work Instructions Not Available."



a. Before expert validation of the material



b. After expert validation of the material

Picture 5. Material 1 display before and after revision

Picture 5 shows the products before and after validation was held. Picture 5.a covers the display, which is still early; Picture 5.b is the result after repair that has been carried out using work instructions.

b) Linguist validation

The results of the language validation are "about writing the title of the material, the initial letters of the sentence must be capital and the writing of sentences that should be broad or segments."



a. Before being validated by experts

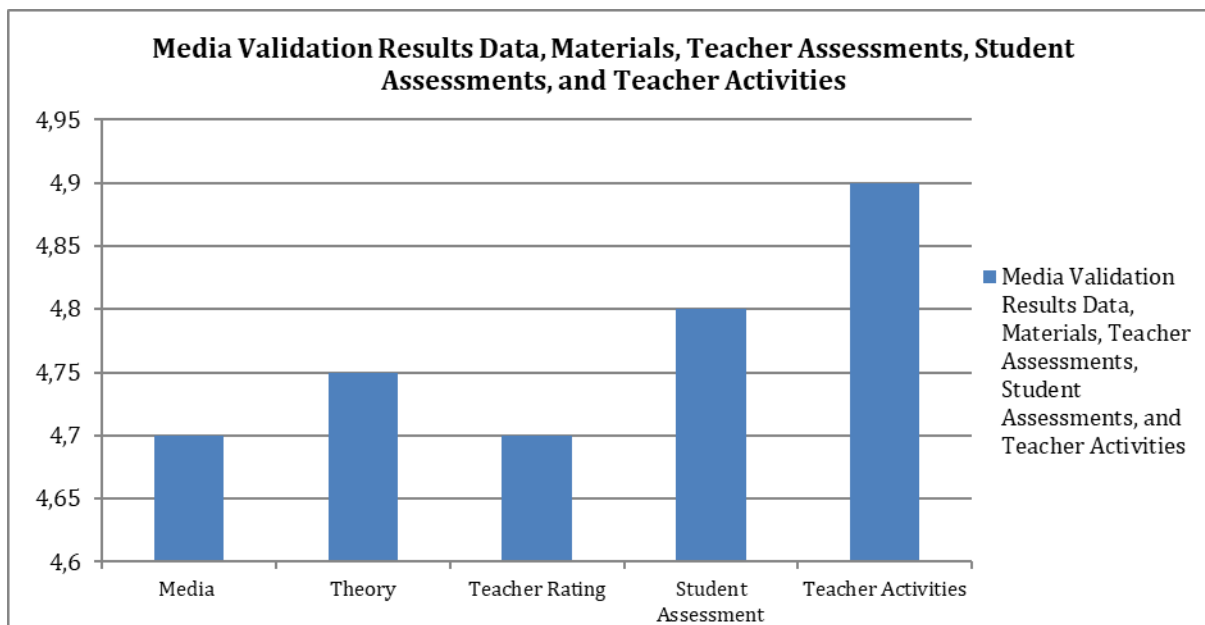
b. After expert validation

Picture 6. Material 2 displays before and after revision

Picture 6 is the display of the material before validation, and Picture b is the result of the material that has been corrected based on the suggestions "regarding the writing of the title of the material, the initial letters of the sentence must be capitalized and the writing of sentences that should be broad or segments."

Material expert validation

The overall results of media validation show that learning media are well used for learning, so there are no revisions from media experts.



Picture 7. Summary of Validations of Soft Skill-Based Interactive Media

Implementations

The fourth stage of the ADDIE development model is the implementation stage after being declared feasible by expert validation. At this stage, 31 students participated in the implementation and held four meetings. The following is the presentation of the results of implementing the learning development.

- a) At the first meeting, students quite understood the process of learning activities, and the core learning activities of students preferred to work in groups rather than working alone. The obstacle experienced during the first meeting was that students still needed to be used to the initial meeting. There was still a need for adaptation to learning activities.
- b) In the second meeting, students understood the learning instructions contained in the material used, but the teacher needs to provide motivation and explain instructions so that students understand better. The obstacle experienced during the second meeting was that the class time was disrupted due to problems with the electricity network, which had been out that day. Based on this, learning will continue in the next meeting.
- c) In the third meeting, students already understood the learning instructions contained in the media used by teachers, and teachers in carrying out learning activities motivated students so that students understood more. The constraints no longer exist. Learning was good and according to the plan.
- d) In the fourth meeting, students already understand the study instructions, but the teacher needs to provide motivation and explain the instructions so that students understand more. The constraints no longer exist. Learning is good and according to the plan.

Discussion

The development of interactive media in elementary schools faces some challenges. Interviews conducted with representatives of Cilacap district teachers revealed that they still primarily use textbooks and need more understanding of Science and Technology, especially when using interactive media applications. Meanwhile, using educational-based technology is vital for science teachers to assist students in acquiring knowledge in the 21st century (Gelmez Burakgazi et al., 2019; Jia et al., 2016; Ongardwanich et al., 2015). As a result, these teachers still employ traditional learning methods such as whiteboards, manual teaching material creation, and manual presentation of teaching materials to students. Darmayanti et al. (2023) pointed out that interactive media will be more effective and beneficial for students learning because it relates to the emergence of the digital era.

This study's finding aligns with previous studies, such as Hendriana et al. (2017), which defined soft skills as interpersonal skills and skills in self-regulation that can enhance students' performance. In addition, Alex (2016) found that soft skills are crucial to a person's success, especially in their professional life. Chamorro-Premuzic et al. (2010) also stated that a person's soft skills can be used to assess their abilities in the surrounding environment. This research supports the results obtained by Cahyana et al. (2021) and Saddhono et al. (2020). This study follows the Borg and Gall research and development model method, which aligns with what was found before. Prior research has demonstrated the significance of incorporating interactive e-books into educational settings. It is also important to use mobile learning designs that include exercises, practical videos, animation videos, and educational games. Based on the results of this study, the soft skills-based interactive media for thematic learning in elementary schools is valid, high quality, and successful. It means it can be used in public and private elementary schools. Such validation is empirically grounded on the high validation scores from multiple sources. The media validation produced an average score of 4.7,

while the material validation resulted in an average score of 4.75, indicating a high level of validity for both aspects. The average teacher assessment score was 4.7, and the average student assessment score was 4.8. Furthermore, the teacher activity evaluation resulted in an average score of 4.9, indicating a high level of quality and effectiveness of the interactive media.

This development study uses the ADDIE development model. The research subjects at the implementation stage were fifth-grade students at SDIT Muhammadiyah Gunung Terang Bandar Lampung for the 2019-2020 academic year. Research data were obtained from observations, interviews, and teacher and student response questionnaires to learning media. The results showed that the developed interactive learning media was very valid, with a score from the validation of material experts of 81% and the validation of media experts of 84%. This learning media was also considered practical as the results of the practitioner's test got a score of 86% and student trials of 88%.

Conclusions

Learning media is a tool that teachers use to make learning more accessible to students. It occurs due to the simultaneous transmission of sound and visual information in this type of media, which increases the amount of information the brain can store. The learning process must be carefully planned to be implemented effectively and efficiently. Interactive learning is designed to create a teaching and learning atmosphere centered on students so that they actively build their knowledge by investigating the questions they ask themselves. Interactive learning strategies are developed within a range of grouping and interactive methods, in which there are forms of class discussions, small group discussions, or group assignments and student collaboration in pairs. One of the virtues of interactive learning strategies is that students learn to ask questions, formulate questions, and find answers to questions on their own by carrying out observational activities (investigations); in that way, students become critical and active learners. In this case, thematic learning is often used in this setting. Interactive multimedia, a multimedia category with user-operated controllers so users can choose what to do next, will help students learn as much as possible. Previously, research focused on easy-to-access ways to learn, like e-books and mobile learning with animations and exercises, but it did not pay as much attention to building soft skills. The results of this study add to what has been learned before by using the Borg and Gall research and development model to create engaging media based on soft skills. With this, teachers in the Cilacap district can still use traditional learning methods like whiteboards, making teaching materials by hand, and presenting them by hand so that students can use the learning media we have made.

The environment is one of the supporting factors. A comfortable and conditional place and learning environment makes it easy for students to concentrate. By preparing the right environment, students will get better results and can enjoy the student learning process. A conducive learning environment (Abadi et al., 2020) is undoubtedly needed in addition to interactive media emphasizing soft skills. Then, a good teacher's teaching method will make students feel comfortable participating in the learning process and will motivate students. The teacher must also be able to provide material that is easy for students to understand. In other words, the learning process in the classroom is the teacher who is responsible for improving students' soft skills. Of course,

in this study, the researchers also emphasized the outcomes in the learning process that existed in student activities during the learning process, where the role of the teacher in making learning media greatly influenced student learning outcomes. Alternatively, the educational context can be expanded, as in business, for example. Further investigation will reveal how skill-based interaction can enhance employee engagement.

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