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DESIGN ANDROID APPLICATION *REMO PUTRI GAYA TAWI* DANCE FOR VOCATIONAL STUDENTS

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Abstract : *The utilization of digital technology in the independent curriculum with a Project Based Learning model is considered highly beneficial in implementing learning in schools. One of the uses of technology is through the use of an Android application as a medium for learning the Tari Remo Putri Gaya Tawi dance. This research aims to develop Android application-based learning media in learning Remo Putri Gaya Tawi Dance at SMK. This research uses R&D (Research and Development) method with Thiagarajan 4D model (define, design, develop, and disseminate). This research produces a definition in the form of the needs of teachers, students and the learning environment with an android application to support learning in the classroom and independent learning activities outside of school. The android design of the application in remo dance learning places interactive learning knowledge and skills of Tawi style princess remo dance based on 4 kinds of Tawi style princess remo movements and collaborates with project based learning syntax fosters student activity, interest, creativity and understanding so that mastery of the material both in practice and theory becomes very good i.e. 4.5, 4.7, and 4.8. Development obtained the form and the results of the trial on the teacher's response got an average aspect of 79.65% got good criteria with the aspect that obtained the highest percentage score was the content of the material of 82.14% which got very good criteria.*

Keywords : *Android Application; Remo Putri Gaya Tawi; Vocational Student.*

Abstrak : *Pemanfaatan teknologi digital pada kurikulum merdeka dengan model Project Based Learning dinilai sangat membantu dalam pelaksanaan pembelajaran di sekolah. Salah satu pemanfaatan teknologi adalah dengan media aplikasi Android pada pembelajaran Tari Remo Putri Gaya Tawi. Penelitian ini bertujuan untuk mengembangkan media pembelajaran berbasis aplikasi Android pada pembelajaran Tari Remo Putri Gaya Tawi di SMK. Penelitian ini menggunakan metode R&D (Research and Development) dengan model 4D Thiagarajan (define, design, develop, dan disseminate). Penelitian ini menghasilkan define berupa kebutuhan guru, siswa dan lingkungan pembeelajaran dengan aplikasi android menunjang pembelajaran dalam kelas maupun aktivitas belajar mandiri diluar sekolah. Desain android aplikasi pada pembelajaran tari remo menempatkan pembelajaran interaktif pengetahuan dan keterampilan tari remo putri gaya Tawi berdasarkan 4 macam ragam gerak remo putri gaya Tawi dan mengkolaborasikan dengan sintaks project based learning menumbuhkan keaktifan, minat,kreativitas dan pemahaman siswa sehingga penguasaan materi baik secara praktik maupun teori menjadi sangat baik yaitu 4.5, 4.7, dan 4.8. Development diperoleh bentuk dan hasiluji coba terhadap respon guru mendapat aspek rata-rata 79,65% mendapat kriteria baik dengan aspek yang diperoleh nilai persentase tertinggi adalah isi materi sebesar 82,14% yang mendapat kriteria sangat baik.*

Kata Kunci : *Aplikasi Android; Remo Putri Gaya Tawi; Siswa Kejuruan.*

INTRODUCTION

In the world of education, especially in the independent learning curriculum, learning models and learning media are important components to increase efficiency and effectiveness in the implementation of learning as a tool or medium for delivering material. The learning model is a conceptual framework that describes systematic procedures in organizing learning experiences in order to achieve learning competence (Brame, 2016; Abdullah & Omar, 2022).Project based learning (PjBL) learning model is a learning model that makes students as subjects or learning centers, emphasizing the learning process that has the final result in the form of a product. That is, students are given the freedom to determine their own learning activities, work on learning projects collaboratively until results are obtained in the form of a product. That is why the success of this learning is strongly influenced by the activeness of students (Made et al., 2021). This model was chosen with the aim that students can examine the relationship between theoretical information and practice, but also motivates students to reflect what students learn in learning into a real project and can improve students' scientific performance to meet learning objectives that are effectively tailored to character Students and the results of observations in the field then need to develop models. The development of the learning model carried out is the development of an Android application-based Project Based Learning learning model to improve mastery of the *Remo Putri Gaya Tawi* Dance.

Android applications allow learning to be accessed without being limited by space, place or time (Agustin, Sya'bandari, & Putri, 2020; Mundiri et al., 2021). This android application contains *Remo Putri Gaya Tawi* Dance material both in theory and practice, making it easier for students to access information and deepen their mastery of *Remo Putri Gaya Tawi* Dance material. Development research is an effort to develop a product for use, not to test theory (Sever et al., 2013; Suryandoko, 2023) Development is an effort to improve technical, theoretical, conceptual, and moral abilities according to needs through education and training. Development is a process of designing learning logically, and systematically in order to determine everything that will be carried out in the process of learning activities by taking into account the potential and competence of students (Shcholokova et al., 2021). Learning media is a tool used by educators to convey information in the form of writing, images, and sound that can stimulate students to capture information (Nisa & Aryni, 2023). The learning media developed in this study is Android application-based learning media.

This research has novelty in terms of traditional dance art *Remo Putri Gaya Tawi* which is applied digitally by involving digital technology devices, in the application provides concrete steps in learning dance. Through the stages of achieving specific skill competencies with the uniqueness of learning female dance which is not only applied to female students but male students (Wu, Sun, Yang, Li, & Sun, 2023). The range of dance learning is getting wider and limitless. Teaching can be done at school or outside school

with targets that have been triggered in the application based on project based learning syntax. Based on the above problems, this study aims to develop an Android-based Project based Learning learning model to improve mastery of *Remo Putri Gaya Tawi* Dance. The limitation of this study is to describe the stages of model development and the process of designing Android application products on the Remo Tawi Dance material. This research uses R&D (Research and Development) method with Thiagarajan 4D model (define, design, develop, and disseminate). This method and model was chosen because it aims to produce products in the form of Android applications that contain theories and videos of *Remo Putri Gaya Tawi* Dance. The developed product is then tested for feasibility with validity and product trials to determine the extent of the feasibility of the Android application with the dance learning material and the learning outcomes of students after learning using the application (Buchori et al., 2021). Development research is an effort to develop a product to be used, not to test theories (Sujarwo et al., 2022). Development is an effort to improve technical, theoretical, conceptual, and moral abilities according to needs through education and training (Xodabande & Nazari, 2023). Development is a process of designing learning logically, and systematically in order to determine everything that will be carried out in the process of learning activities by taking into account the potential and competence of students (Hutabarat & Ekawarna, 2023). Learning media is a tool used by educators to convey information in the form of writing, images, and sound that can stimulate students to capture information (Suprapto et al., 2023). The learning media developed in this study is Android application-based learning media.

METHOD

The research method used is qualitative research. Data collection is influenced by facts found in the field rather than theory (Amin & Fathurohman, 2021). This method is more about telling in detail the activities that occur as a result of facts (Poterasu, n.d.). Therefore, qualitative research uses inductive reasoning in data analysis. This study used data collection methods of observation, interviews with 27 respondents consisting of teachers, students, and parents, documentation, and triangulation. The data analysis technique uses the Miles, Hubermen and Saldana model, namely data reduction, data display (data presentation), and conclusion drawing.

The R&D (Research and Development) method is the process used to develop and validate educational products. The steps of this process are usually referred to as the R&D cycle, which consists of studying research findings relating to the product to be developed, developing a product based on these findings, the testing field in the setting in which it will be used eventually, and revising it to correct deficiencies found in the proposed testing phase (Borg and Gall 1983:772). There are several models in research that are R&D methods, one of which is used by researchers to develop products is the Thiagarajan 4D model.

The 4-D (Four D) development model is a learning device development model. This model was developed by S. Thiagarajan, Dorothy S. Semmel, and Melvyn I. Semmel (1974: 5). This study uses a question format that aims to identify the characteristics of students towards the android application remo putri gaya tawi and the teacher identifies whether the android application *Remo Putri Gaya Tawi* will help in the learning process of cultural arts material (dance) carried out by disseminating questionnaires to participants Likert scale is made to convince participants to provide answers to each question contained in questionnaires at different levels (Khasanah, 2019).

Table 1: Satisfaction Level and Scale

Satisfaction Level	Scale
Very Good (SB)	4
Good (B)	3
Less Good (KB)	2
Not Good (TB)	1

Source: (Khasanah, 2019)

Student responses can be measured using questionnaires based on the number of positive responses from each particular category. The bias response is called positive if the teacher or student is satisfied with the learning carried out and students are interested in learning activities and interested in the activities carried out (Bella, Matondang, &; Wati, 2021).

RESULT AND DISCUSSION

Research on the development of an Android-based Project Based Learning learning model on the *Remo Putri Gaya Tawi* Dance in class X SMK is based on the need to achieve basic learning competencies which refer to phase E learning outcomes, namely students are able to identify and interpret meaning in a personal perspective to create dance performances inspired by artwork of other forms such as music, drama and fine arts as application skills and techniques of making, performing and presenting art with performance management and invite others to appreciate the dance performance. Students are able to create dance performances.

Based on the educational outcomes of phase E, the learning flow begins with identifying the meaning of dance, interpreting the meaning of dance, creating dance and making simple dance performances. However, to achieve these learning objectives, teachers are advised to review the basic material about the art of dance, especially for the *Remo Putri Gaya Tawi* Dance material starting from the dance synopsis, understanding the interpretation of dance contextually, character explanations, makeup, costumes and dance music to the various movement techniques of the *Remo Putri Gaya Tawi* Dance.

This is intended so that learners can understand the basic concepts of *Remo Putri Gaya Tawi* Dance before learners interpret the meaning of dance and make dance performances with dance performance production management (Mucedola, 2018). To meet effective learning objectives tailored to student character and observations in the field, it is necessary to develop a model. The development of the learning model carried out is the development of an Android application-based Project Based Learning learning model to improve mastery of the *Remo Putri Gaya Tawi* Dance. Through learning with the Project Based Learning model in the independent curriculum, students are given the freedom to plan learning activities, carry out projects collaboratively, and ultimately produce work products that can be presented to others (Sekarningsih et al., 2021).

Android applications that are designed coherently, interestingly, communicatively and facilitate understanding, make it easier for students to practice independently, and learning can be accessed without limited space, place or time will increase student interest and student mastery in understanding and mastering the material of *Remo Putri Gaya Tawi* Dance which will also have an impact on the effectiveness of learning the dance. The development stages are carried out using the R&D Method (Research and Development) with product development using the Thiagarajan 4D model (define, design, develop) as figure 1.

Collection of information (start-end analysis, student analysis, task analysis, concept analysis, formulation of learning objectives	Define
Design of product content and form	Design
Due Diligence (validation of experts)	Develop
Product trials (teacher and student responses)	Disseminate

Figure 1: Product Development Using the Thiagarajan 4D Model

The development of Android applications that are cohesive, engaging, communicative, and conducive to comprehension significantly enhances students' ability to practice independently. Accessible learning without spatial, locational, or temporal constraints not only heightens student interest but also augments their proficiency in comprehending and mastering the material of *Remo Putri Gaya Tawi* Dance. Consequently,

this approach can significantly impact the effectiveness of learning the dance. The developmental process employs the R&D Method (Research and Development) coupled with product development utilizing the Thiagarajan 4D model (define, design, develop, and disseminate).

1. Define Stage

The defining stage is useful for determining and defining needs in the learning process and collecting various information related to the product to be developed. In this stage is divided into several steps, namely: front-end analysis, analysis of students and environment, material analysis, and learning objective specification. The front-end analysis have the rules that need to be adjusted in the preparation of learning tools, such as syllabus, lesson plans and assessment tools contained in the Regulation of the Minister of National Education of the Republic of Indonesia No. 41 of 2007 concerning Process Standards (Zamili, 2021). It can be seen from the completeness of the syllabus used to contain the identity of subjects or lesson themes, SK, KD, learning materials, learning activities, indicators of competency achievement, assessment, time allocation, and learning resources.

The same thing is also applied in the preparation of RPP in accordance with the KI contained in the K-13 circle material, the formulation of learning objectives listed in the RPP. In addition, it has been seen in the RPP that there is a planning for the management of student activities which is shown by the selection of learning methods. Implementation in the field, teachers in explaining the material, do not emphasize the use of knowledge that students already have as capital for students in learning new material. This makes teachers not pay too much attention to the apperception material delivered at the beginning of learning. For example, when the teacher will teach Tawi-style princess remo learning material, the teacher immediately provides Tawi-style princess remo practice. This will make the provision of knowledge of students in compiling new material less appropriate, allowing errors in compiling new material concepts. This happens because teachers do not help students see art and culture as the study of patterns and develop an attitude of independence, independence and the ability to think creatively is not created.

One way to obtain results that are in accordance with what teachers expect, supporting learning resources made by teachers themselves are needed in the form of adroid applications (Novaliendry, Darmi, Hendriyani, Nor, & Azman, 2020). The reality in the field, the adroid application used is the adroid application which contains a summary of the material and learning activities of the adroid application. This is less helpful for students in learning new material Overall, existing Tawi-style princess remo learning devices with characteristics that can develop students' creative thinking skills. This causes the actions of students who tend to be less creative when solving problems.

So, front-end analysis refers to the evaluation and adjustment of rules and standards within educational tools such as syllabi, lesson plans, and assessment instruments, as outlined in the Regulation of the Minister of National Education of the Republic of Indonesia No. 41 of 2007 concerning Process Standards. This analysis focuses on the completeness of syllabi, encompassing subject identity, lesson themes, competency standards (SK), basic competencies (KD), learning materials, activities, competency achievement indicators, assessments, time allocation, and learning resources (Zamili, 2021).

Similarly, the preparation of lesson plans (RPP) aligns with the educational framework outlined in the K-13 curriculum, incorporating learning objectives based on the educational purposes (KI). The RPP also involves planning for student activity management through the selection of appropriate learning methods. However, in practical implementation, teachers often fail to leverage students' existing knowledge as a foundation for learning new material. This oversight leads to insufficient emphasis on apperception material—a crucial element introduced at the beginning of the learning process. For example, when teaching Tawi-style Princess Remo, teachers directly provide practice without adequately linking it to students' existing knowledge. Consequently, students might encounter challenges in correctly conceptualizing new material due to this oversight. The lack of emphasis on cultivating an appreciation for art and culture as studies of patterns hinders the development of students' independence, self-reliance, and creative thinking abilities. To address this, teachers require supportive educational resources such as self-made Android applications. However, the current Android applications used in teaching typically contain summaries of materials and learning activities, offering limited assistance for students in grasping new concepts effectively.

The second step is Analysis of students and environment. Analysis of learners is obtained by documentation methods and literature study. SMK participants have an average score that enters the school in each year ranging from 7-8. The learning carried out so far is teacher-centered so that students tend to be passive in classroom learning. The knowledge that students have before is not used to build new knowledge that they will learn, so the participation of students in learning is very lacking. The theory of Piaget and Vygotsky shows that the activeness of learners is very necessary to build new knowledge (Umiarso, Baharun, Zamroni, Rozi, & Hidayati, 2021). So it is necessary to apply a new learning model that activates students more.

In essence, this analysis underscores the limitations of a teacher-centered approach, which restricts students' active involvement and fails to harness their existing knowledge. Drawing from the theories of Piaget and Vygotsky, the call for a new learning model arises—one that prioritizes active student engagement, integrates prior knowledge, and encourages their participation in constructing new knowledge.

The third step is material analysis. Cultural arts (dance) materials for SMK whose concepts can be built through concepts that have previously been accepted by students are quite a lot, one of which is Tawi-style princess remo. The Tawi style princess Remo itself consists of sub-subjects including knowledge of the Tawi style princess remo and details of the practice of Tawi style princess remo and the complete practice of Tawi-style princess remo. Task analysis is carried out by making learning designs that can develop students' creative thinking and artistic work skills and improve students' self-concept abilities in the learning process. It contains practical tasks carried out by students.

Learning objectives specification as the last step of define stage process (Kennedy, 2006). Formulate the results of task analysis and material analysis above to be an indicator of the achievement of learning outcomes, namely the ability to think creatively and work artistically for students. Indicators of creative thinking ability can be formulated with learning indicators that become objectives. Certainly, the given statement emphasizes the translation of task analysis and material analysis outcomes into indicators that gauge the attainment of specific learning outcomes, particularly focusing on fostering students' ability to think creatively and engage in artistic work. Indicators for creative thinking ability can be established by aligning them with learning objectives (Kennedy, 2006). The results derived from task analysis and material analysis serve as pivotal factors in assessing the achievement of learning outcomes, specifically targeting the cultivation of students' capacity to think creatively and engage in artistic endeavors. To transform these analyses into tangible indicators of creative thinking ability, they can be formulated in conjunction with the learning objectives. Creating indicators for creative thinking ability involves aligning these indicators with the objectives set forth in the learning process. These indicators serve as benchmarks or measurable criteria that reflect the development and demonstration of creative thinking skills and artistic competence among students. For instance, task analysis might reveal specific tasks or challenges that necessitate creative problem-solving or artistic expression. Material analysis might highlight resources or materials that stimulate creative thinking or artistic exploration. By integrating these insights into learning objectives, indicators can be designed to reflect and measure students' progress in developing creative thinking skills and artistic capabilities. These indicators, when articulated within learning objectives, offer a clear framework for educators to assess and evaluate students' proficiency in creative thinking and artistic work. They provide measurable criteria against which students' growth in these areas can be observed and assessed, enabling educators to tailor teaching strategies and interventions to further enhance students' creative thinking abilities and artistic competencies.

2. Design Phase

The purpose of this stage is to design a prototype of teaching materials (learning media) to be developed. This phase can begin after a series of learner behavioral goals

have been formulated. The selection of materials, media, and formats for materials and prototyping are major aspects of the design stage. At this stage, it contains what material will be contained in dance learning videos that will be loaded in Android applications that are tailored to the learning objectives to be achieved. Examples: understanding the material, basic movements of *Remo Putri Gaya Tawi* Dance, dance videos by part, overall dance videos, makeup and costumes.

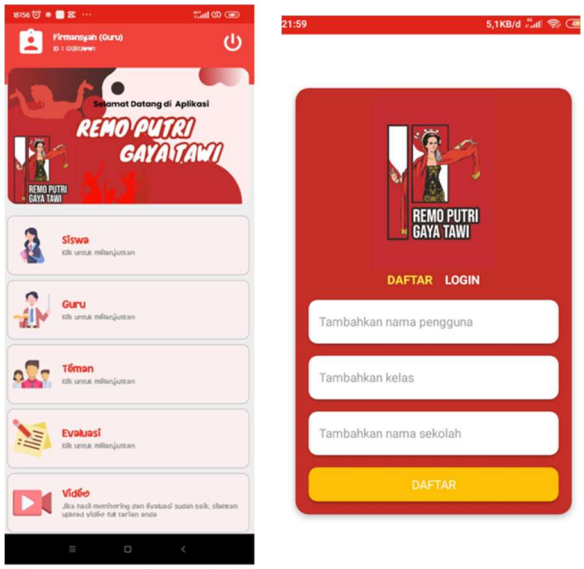

Figure 2: Initial View of The *Tawi* Style Princess Adroid *Remo* Application

Putri Gaya Tawi Remo Dance is a princess *remo* dance originating from Jombang. This dance is danced in a distinctive style from the dancer, Tawi. Tawi is a male artist from Kontoh Village, Tembelang District, Jombang Regency, East Java. Tawi is a dance artist who used to dance the princess *remo* dance at the opening of the ludruk show in Jombang. The distinctive style in dancing *Remo* Putri is what makes this dance known as the *Remo Putri Tawi*-style dance. this is based on the nature of the dance danced by *Tawi* who even though he is a pure man but in dancing this *Remo Putri* dance *Tawi* managed to actualize the hero, hero, *wirama* into her as if the dance was really performed by a woman who was soft, weak, *kemayu*, *kenes* but not excessive like *Remo Putri* in general who added a lot of sway, *Jogetan* and *egolan* that seem erotic and excessive. In terms of costumes, there are also differences where in *remo* princesses generally use pennant pants or *bludru* pants below the knee, but in the *tawi* style princess *remo* dance, it uses long *sewek* cloth and wears accessories like *gambyong* dance.

This dance is very interesting to be raised as material in art learning because of several phenomena that occur. These phenomena are; 1) *Remo* Dance is a genius local dance of the East Java community where the independent learning curriculum emphasizes understanding and appreciation of local art and culture; 2) the existence of

Remo Putri Gaya Tawi Dance is starting to disappear, so it is hoped that when the *Remo Putri Gaya Tawi* Dance material is used as material in art learning, this dance will exist again and be widely known by the community, especially students as the next generation of the nation; and 3) In reality, *Remo Putri* is not as popular as *Remo Putra* dance which has been danced and used as material in cultural arts learning subjects (Prahardana, 2021). The material used as material in learning at school is mostly *Remo Putra* dance because it is in great demand, widely understood and often staged and used as competitions. In addition, it is easier to teach this *Remo Putra* dance than *Remo Putri* dance because male students tend to be shy to dance the *Remo Putri* dance (Prahardana, 2021).

Table 2: Android Application Learning Storyboard

No	Program Files	Fill	Information
1	Application start view	Brings up the initial display of the application which contains a picture of the *Remo Putri Gaya Tawi* Dance under which there is the title of the material you want to convey.	The initial display is made as attractive as possible by bringing up an image of the Princess *Tawi Remo* Dance under which is written the title of the material with an easy-to-read font selection and attractive colors.
2	Material Menu	There are several subs in the material menu in which there is a description to open insight and understanding of the material *Remo Putri Gaya Tawi* Dance. The sub material contains; - Understanding *Remo* Dance - Understanding *Remo Putri Gaya Tawi* Dance which contains a synopsis, a brief biography of *Tawi* as the artist of *Remo Putri Gaya Tawi* Dance, the historical background of the creation of *Remo Putri Gaya Tawi* Dance. - Princess *Tawi's* Remo Dance Character	Contains a brief description per sub material accompanied by an image

		- *Kidungan* which contains the text or lyrics of *kidungan* performed in the performance of *Remo Putri Gaya Tawi* Dance. - Make up and costumes are accompanied by pictures	
3	Video menu of Remo Putri Gaya Tawi Dance performance	Contains a video of the performance of *Remo Putri Gaya Tawi* Dance in its entirety complete with make-up, costumes, accompaniment and *kidungan*.	The display of the performance video as a whole is to open students' insights about the performance of *Remo Putri Gaya Tawi* Dance and can analyze the characteristics, styles and supporting elements of the dance.
4	Remo Putri Gaya Tawi Dance learning video menu.	On the learning video menu, *Remo Putri Gaya Tawi* Dance is divided into several subs, namely; - Basic techniques (contains tutorials on various core movements in the *Remo Putri Gaya Tawi* dance) - Task 1 - Dance learning Part I (contains a tutorial on dancing a variety of initial movements to strokes) - Assignment - Dance Learning Part II (contains a tutorial on dancing various slash movements to the final variety of prayer movements) - Assignment	Tutorials are given by models or props where in giving tutorials always use 2 speeds or speeds, namely slow and normal speed. This aims to make it easier for students to imitate and follow tutorials effectively. This assignment is always present at the end of each Dance sub-learning, where students submit videos according to the tutorials in each sub-sub. Learning outcomes will later be evaluated through written comments about learning outcomes videos that have been sent by students. This aims to be able to interact, evaluate and appreciate what has been learned by students in the hope that students will be able to dance the *Remo Putri Gaya*

		- Dance Learning part III (contains a tutorial on dancing the *Remo Putri Gaya Tawi* Dance as a whole from beginning to end using accompaniment with 2 speeds / speeds, starting with low / slow speeds and tutorial at normal speed/ according to the original speed) - Assignment	*Tawi* Dance properly and correctly.
5	Question menu	This question menu contains questions about the material of *Remo Putri Gaya Tawi* Dance that has been submitted at the beginning of the application which includes understanding, background, characteristics and supporting elements in the *Remo Putri Gaya Tawi* Dance.	The questions that will be contained in the question menu are multiple-choice questions which will immediately see the score when students have completed all the questions written.

3. Development Phase

The development stage is to carry out the process of making designs into a new product which is then continued by the validation process by validation experts with the aim of testing the feasibility of the product (Veryzer Jr., 1998). The purpose of the develop stage is to realize the design that has been set, or it can also be by completing a prototype that has been built previously (Hartanto, et al., 2022). Although much has begun to be built since the Define stage, the result must be considered an early version of the teaching material (learning media) that must be modified before it can become an effective and reliable final version to solve the problem. In this stage of development, feedback is usually extracted and received through formative evaluation and then revised. There are usually two main steps in this stage. In the development phase, assessment from expert is the one things action to ask for suggestions for material improvement from a number of experts who are competent in their fields (Veryzer Jr., 1998). These experts are asked to evaluate the material from the point of view of learning, technical and learning

media. From the feedback they provide, the products built are then modified to make them more suitable, effective, usable, as well as of high quality. The experts or experts used to evaluate the results of product development that have been designed are; 1) expert dance education expert; 2) learning media expert; and 3) audio visual expert. The expert dance education expert in the field of dance education acts as an examiner or evaluator in the development of Project Based Learning learning models in the form of model books. The expert assessment includes product validation, which includes the application of the Tawi style princess adroid *Remo* developed at the design stage. Validation is carried out by 4 competent people to assess the feasibility of learning tools. Revisions are made based on suggestions/instructions from validators. The total average score given by the validators is 4.6 which means the device is Excellent and can be used with little revision (dance) learning tool with the help of the Adroid *Remo Putri Gaya Tawi* application is valid. The results of the revision based on the assessorn validator produce draft II.

Table 3: Validation Results of Dance Expert

Value	Value Average	Explanation
Display quality	4.7	Excellent
Integrated into playstore	4.6	Excellent
The application of adroid *remo tawi* dance maximizes student mastery	4.7	Excellent
Effective applications are used in learning	4.6	Excellent

In-depth details regarding the subject involve an expert specializing in dance education, who actively participates as an examiner or evaluator during the developmental phase of Project Based Learning (PBL) models represented in the form of model books (Awang, 2007). The scope of the expert's assessment encompasses product validation, which specifically involves implementing the *Tawi* style Princess Adroid *Remo* is a concept formulated during the initial design phase. Four individuals recognized for their competence are tasked with conducting the validation process to critically evaluate the suitability and effectiveness of the learning tools. Following this evaluation, revisions are meticulously undertaken, guided by the suggestions and directives provided by the validators.

The collective assessment outcome delivered by the validators culminates in an impressive total average score of 4.6. This score is indicative of the device's excellence, signifying that it possesses exceptional attributes and requires minimal modifications before being fully ready for utilization. Consequently, the sei budaya (dance) learning

tool, combined with the Adroid *Remo Putri Gaya Tawi* application, is deemed valid, implying its credibility and efficacy in the educational context. The insights and feedback gathered from the assessor validators lead to the creation of a refined version, termed draft II, following the revision process. This refined iteration is an outcome of the collaborative efforts aimed at enhancing and optimizing the learning tool's effectiveness and applicability within the context of dance education.

An expert in instructional media plays a crucial role in evaluating the suitability of an Android application product that has been developed to gauge the effectiveness and appropriateness of a product tailored to the subject and objectives intended for learning the *Tari Remo Putri* in the Tawi style. This aims to enhance mastery of the subject matter, encompassing both theoretical knowledge and practical application.

During the validation of the media, the validators have given a score of 4.5, indicating a favorable assessment. This score signifies the product's commendable quality and alignment with the intended learning goals and objectives. The validation process ensures that the Android application effectively serves its purpose in facilitating the learning of the *Tari Remo Putri* in the Tawi style, contributing to a comprehensive understanding of the subject matter, both in theory and practice.

Table 4: Validation Results of Media Expert

Value	Value Average	Explanation
Display quality	4.5	Good
Integrated into playstore	4.5	Good
The application of adroid remo tawi dance maximizes student mastery	4.5	Good
Effective applications are used in learning	4.5	Good

The table presents a detailed evaluation of various aspects related to an application, possibly the Android Remo Tawi Dance application, assessing its performance and effectiveness in enhancing student learning. The application's visual presentation and overall appearance received a rating of 4.5, indicating a "good" level of quality in terms of its graphical interface and display features. Integration into Play Store criterion evaluates the application's successful integration into the Play Store. It received a score of 4.5, denoting that it is "good" and effectively accessible through the Play Store platform. Maximization of student mastery through Adroid Remo Tawi dance application aspect measures how effectively the application aids in maximizing student mastery of Tawi dance through its use. With a rating of 4.5, it is deemed "good," suggesting that the application contributes significantly to students' comprehensive

understanding and mastery of the dance form. And the effectiveness in learning criterion evaluates the application's effectiveness as a learning tool. The score of 4.5 indicates that it is "good" in supporting learning activities, emphasizing its positive impact on facilitating effective learning experiences. Overall, the application demonstrates a consistent level of quality across various facets, as indicated by the "good" ratings across all evaluated criteria. These assessments suggest that the application performs well in terms of display quality, integration into the Play Store, enhancing student mastery of Tawi dance, and supporting effective learning practices.

The audio and visual expert assumes the role of a design feasibility tester for Android application products specifically developed to evaluate the suitability, appeal, and practicality of their design within the context of creating Android applications focused on *Remo Putri Gaya Tawi* Dance material. Their primary responsibility involves assessing whether the design aligns with the intended objectives and if it is both visually appealing and functionally feasible for use within Android application development. Upon conducting the validation process, the expert received an impressive validation result of 4.8. This score signifies an exceptionally high level of performance, indicating that the design of the Android application products related to *Remo Putri Gaya Tawi* Dance material is deemed "very good." This validation outcome affirms that the design successfully meets or exceeds the expected standards, demonstrating its suitability, attractiveness, and feasibility for utilization in designing Android applications pertaining to *Tawi* Dance material.

Table 5: Validation Results of Audio Visual Expert

Value	Value Average	Explanation
Image Quality	4.8	Excellent
Sound Quality	4.8	Excellent
Audio visual balance	4.7	Excellent
Transfer of images and audio	4.8	Excellent

After undergoing the subsequent validation phase, the Android application featuring the *Remo Putri Gaya Tawi* Dance material will undergo testing to assess the reactions of both students and teachers toward the application. This testing phase will involve a small-scale trial conducted in an SMK (Vocational High School) classroom, comprising 31 respondents, along with the participation of 7 mathematics teachers. The outcomes of this trial are detailed in the following Table 5.

Table 6: Percentage of Teacher Response

No	Aspects	Presentese	Criterion
1	Relevance of KD	77,38%	Positive
2	Content	82,14%	Very Positive
3	Organizing Materials	78,125%	Positive
4	Grammar	80,158%	Positive
5	Display Design	80,47%	Positive
	Average Aspect	79,65%	Positive

The findings from the trial regarding the teachers' responses revealed an average aspect rating of 79.65%, meeting the criteria for a "good" evaluation. Among the various aspects assessed, the one that garnered the highest percentage score was the content of the material, reaching an impressive 82.14%. This particular aspect attained a classification of "very good," signifying the high quality and effectiveness of the content presented within the material.

Table 7: Percentage of Student Response to Learning Media

No	Aspects	Presentese	Criterion
1	Interest in Android-based Learning Media	74,73%	Positive
2	Media Expediency	78,68%	Positive
3	Ease of Use	80,64%	Positive
4	Grammar	80,32%	Positive
5	Display Design	80,08%	Positive
	Average Aspect	78,89%	Positive

Table 7 presents the percentage of student response to learning media and details various aspects evaluated alongside their respective ratings and criteria. Students expressed a 74.73% interest in the Android-based learning media, categorized as "Positive." This aspect measures the level of engagement and attraction toward the learning material presented via Android-based platforms. With a rating of 78.68%, students find the media's expediency or efficiency at 78.68%, also categorized as "Positive." This aspect likely evaluates the speed or efficiency of the media in delivering educational content. Students find the learning media user-friendly, with an 80.64% rating, marked as "Positive." This aspect assesses the ease and convenience of utilizing the learning platform or application. The evaluation for grammar within the media received a score of 80.32%, marked as "Positive." This aspect likely focuses on the correctness and clarity of language usage within the learning material. Students rated the display design at 80.08%, also categorized as "Positive." This aspect reflects the visual presentation and layout of the learning media. Overall, the Average Aspect rating across these various criteria stands at 78.89%, indicating an overall positive response from students toward the learning media. This average considers the collective feedback

across all aspects evaluated, showcasing a generally favorable impression of the Android-based learning media among the student participants.

4. Disseminate and Deployment

The subsequent phase involves disseminating the outcomes derived from the development of the *Remo Putri Gaya Tawi* Dance learning video, which has undergone testing specifically targeting the intended recipients of the product, namely the students. At this juncture, the product can be considered to have reached its ultimate stage in production, as testing during the development phase has consistently yielded positive ratings from experts, affirming its consistent performance. Once deemed suitable for implementation, the product becomes poised for broader utilization. This dissemination phase comprises three critical steps: validation tests, packaging, and diffusion and adoption (Kim & Garrison, 2010). While formative evaluation occurs during the development stage, the dissemination stage primarily focuses on conducting a summative evaluation. The validation testing phase necessitates real-world implementation and engagement with diverse stakeholders. Additionally, the product must undergo professional scrutiny to ascertain its adequacy and relevance, thereby acquiring an objective assessment.

Subsequently, the validated product undergoes final packaging. The conclusive stage involves diffusion and adoption, necessitating collaboration between producers and distributors to effectively package the product in an appealing form for widespread market penetration. This phase requires dedicated efforts to disseminate materials extensively, encouraging the adoption and utilization of the product, notwithstanding the availability of numerous digital channels in today's landscape.

CONCLUSION

The development of Android application-based learning media on the *Remo Putri Gaya Tawi* Dance in class x SMK was developed using the R&D (Research and Development) method with the Thiagarajan 4D model (define, design, develop, and disseminate) (St-Amand et al., 2021). This research succeeded in outlining the stages of developing the Project Based Learning learning model and producing products in the form of android applications to foster student activity, interest, creativity and understanding so that mastery of the material both in practice and theory becomes better in learning *Remo Putri Gaya Tawi* Dance.The android design of the application in *remo* dance learning places interactive learning knowledge and skills of *Tawi* style princess *remo* dance based on 4 kinds of Tawi style princess *remo* movements and collaborates with project based learning syntax fosters student activity, interest, creativity and understanding so that mastery of the material both in practice and theory becomes very good i.e. 4.5, 4.7, and 4.8. Development obtained the form and the results of the trial on the teacher's response got an average aspect of 79.65%

got good criteria with the aspect that obtained the highest percentage score was the content of the material of 82.14% which got very good criteria.

The successful development of Android application-based learning media for *Remo Putri Gaya Tawi* Dance in class X of SMK (Vocational High School) using the Research and Development (R&D) method, specifically the Thiagarajan 4D model (define, design, develop, and disseminate), has proven to be highly beneficial. This research comprehensively delineates the stages involved in creating the Project Based Learning model and crafting Android application products. These tools serve to enhance student engagement, interest, creativity, and comprehension, ultimately leading to improved mastery of the dance material, encompassing both theoretical knowledge and practical skills. The design of the Android application for *Remo* dance learning exhibits interactive features that facilitate the acquisition of knowledge and skills related to the *Tawi* style princess remo dance, focusing on four distinct movements. The integration of project-based learning methodologies augments student engagement, fostering heightened activity, interest, creativity, and understanding. This comprehensive approach significantly enhances students' mastery of the dance material, as evidenced by the remarkable ratings of 4.5, 4.7, and 4.8.

Moreover, the development process culminated in a successful trial, particularly in assessing teacher responses. The teachers' average aspect rating of 79.65% signifies a "good" evaluation, with the content of the material achieving an exceptional score of 82.14%, classified as "very good." These high ratings affirm the effectiveness and quality of the material, indicating its positive impact on teachers and their perception of the learning media. In practical terms, this research showcases the immense potential of Android-based learning tools in enhancing student engagement and learning outcomes, especially in the context of learning *Remo Putri Gaya Tawi* Dance. It highlights the effectiveness of incorporating interactive elements and project-based learning methodologies to stimulate student activity, creativity, and comprehension, thereby significantly improving mastery of both theoretical and practical aspects of the dance material. Additionally, the positive responses from teachers underscore the efficacy of the developed material, signifying its value in educational settings.

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