

# Experts' judgment and perception of android-based materials for sports massage learning

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## Experts' judgment and perception of android-based materials for sports massage learning

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### ABSTRACT

This study aims to obtain the results of the product validation of the Android-based massage learning material model that has been designed through expert judgment and perception. The experts involved in the research are massage, learning, and media experts. The research method uses quantitative research in order to analyze quantitative data using IBM SPSS 25.0. Descriptive statistical results percentage. The results of the study concluded that the android-based massage learning material was feasible to use. Some inputs for product improvement are the addition of instructions for using the application, a display with a spread pattern, adding instructional content, simplifying the display, a simulation video, adding competence according to the Indonesian National Framework of Qualifications format, and lowering the file capacity to make it easier to access by the Android OS. The results of this study have implications for the understanding of lecturer who have developed appropriate and effective learning material.

**Keywords:** Android; expert; massage material; validation



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### INTRODUCTION

The need for learning materials is now increasingly diverse and is required by the development of graduate needs and advances in science and technology (Samsudin et al., 2022). Moreover, during the COVID-19 pandemic, learning activities carried out online or distance learning has conditioned students to have technological devices such as laptops or smartphones as tools for carrying out teaching and learning activities (Hermanto & Srimulyani, 2021). This condition is a great opportunity for lecturers to develop learning materials. The lecturer role and the design of learning assignments are further important factors (Kearney et al., 2012). From the results of field observations at IKIP Budi Utomo Malang, it is known that the Massage Sport course requires innovative materials through the use of technology. The design of the syllabus for this

course requires that learning activities be carried out in a fun, interesting, and creative way and meet the needs of massage sports competencies that are work skills in the 21st century. This means that the learning materials needed by students for this course lead them to develop concepts that are in line with the needs of the business world or industry, including (a) critical thinking and problem solving, (b) communication and collaboration, and (c) creativity and innovation. In addition, technological advances that have been used in the process of providing education require creative lecturers to combine technology with learning materials (Crompton & Sykora, 2021; Sailer et al., 2021).

The digital era of technology has required lecturers to use technological devices or technology applications in implementing learning materials in the classroom (Toto & Strazzeri, 2019; Sulaksono, 2021; Wallace et al., 2022). The instructors of Massage Sports courses at IKIP Budi Utomo Malang have designed Android-based massage training materials. This development is carried out so that teaching materials are always authentic, stimulate learning experiences and students' technological competencies, include learning activities that are relevant to changes in people's lives through advances in knowledge and technology, and universities can encourage lecturer innovation in providing learning materials that suit student needs or current conditions. Therefore, the learning materials that have been designed require validation tests to determine their feasibility.

The use of mobile devices and mobile technology for learning can increase students' learning motivation (Ciampa, 2014). Moreover, learning activities for sports courses are more fun if the learning materials are equipped with audio-visual media, such as on mobile devices. Multimedia has provided theoretical references in research related to sports learning (Kos et al., 2018; Subic et al., 2011; Zioti et al., 2016). At present, the Internet of Things-based school sports intelligence system and artificial intelligence technology affect the management of school sports (Sailer et al., 2021; Subic et al., 2011; Xie & Xiao, 2021). This means that the Internet of things has become part of the education system in educational institutions (Olofsson et al., 2020). Various technological tools have been applied, such as video, 3D animation, and website applications (Cho et al., 2020). However, some educators do not understand the application of these tools and ICT in learning (Balacheff et al., 2009; Sipilä, 2014). There is also cellular technology that has been used as multimedia in the teaching and learning process at all levels of education. Lecturers have taken advantage of the combination of affordability and mobile and app technologies that enhance several aspects of learning practice (Domingo & Garganté, 2016). Mobile devices have made it easy to access learning materials and also carry out teaching and learning activities (Domingo & Garganté, 2016; Sipilä, 2014; Varea & González-Calvo, 2020).

At the same time, the internet, mobile phones, and social media have brought new challenges to lecturers (Purcell et al., 2013; Kukulska-Hulme et al., 2017; Özcan & Kert, 2020). Mobile learning is a new form of learning that takes advantage of the unique capabilities of mobile devices. In college, the use of smartphones to facilitate learning is a trend that is still warm. In a study, it was found that student acceptance of m-learning was quite good. The results provide valuable rewards for increasing student acceptance of mobile learning (Cheon et al., 2012). But on the other hand, mobile learning is not a stable concept. Therefore, several research issues for mobile technology in physical education are recommended (Yang et al., 2020; Refiater et al., 2020).

From several previous studies, it can be seen that research on the implementation of education related to the use of technological devices such as mobile phones has been widely carried out. Even smartphones are widely used for teaching and learning activities (Yuniarto et al., 2018; Lutfianto et al., 2021; Setiakarnawijaya et al., 2021; Pratama et al., 2022). However, research on the development and validation of Android-based sports massage learning is still limited (Efendy et al., 2022). This is a very important part of research on the development of learning materials. Learning materials cannot be applied if they do not meet the feasibility and efficiency values of the research process for developing teaching materials. Thus, this study presents a novel concept related to an in-depth analysis of the results of expert validation on the development of Android-based massage training materials. Moreover, the development of Android-based learning materials is one of the study program's efforts in meeting the quality demands of graduates in the current era of globalization. So, expert assessment becomes a very important part and is analyzed more deeply so that the learning materials are designed to meet the standard values in development research conducted by educators. Thus, the purpose of this study was to develop Android-based sports massage based on the results of expert perceptions of the Android-based massage learning material model so that this learning material has the feasibility and efficiency

to be applied in class. The results of this study are expected to provide benefits and make contributions to research on the development of learning materials. Educators can also understand the management and process of designing teaching materials that meet the competency needs of graduates in sports learning.

## METHOD

This study used the quantitative method. Research-quality studies on understanding social phenomena from a human perspective by examining events that occur in the field So, the descriptive qualitative method describes the results of observations with the help of search data from existing sources (Ary et al., 2010; Creswell & Creswell, 2018). The research was carried out through an interview process and a group discussion forum with experts to validate the product of the Android-based massage learning material model. So, the participants involved in this study were sports massage experts, learning experts, and media experts. The data collection process used observation, questionnaires (product assessment worksheets), and FGDs. The product models of learning materials are validated by experts are as follows:



Picture 1. Screenshot Menu and Submenu for Model “massagesmartapps”

In order to analyze quantitative data using IBM SPSS 25.0 (Armonk, NY: IBM Corp.). Descriptive statistical results (percentage) (Vveinhardt & Fominiene, 2019).

## RESULTS AND DISCUSSION

From the distribution of questionnaires as a product assessment worksheet for the android-based massage sports learning material model that has been carried out by 3 experts, it shows that this product is good enough and feasible to use. However, some improvements must be made so that this learning material is even better. The results of the assessment provided are presented in a table in the form of a percentage, as follows:



## 1. The Result of Sports Massage Expert Validation

Table 1. Sports Massage Expert Validation

No.	Assessment Component for Product	Expert 1	Expert 2
1	Conformity of content with learning objectives	90%	90%
2	Clarity of learning topics	80%	80%
3	The suitability of the order of presentation of the material	90%	90%
4	The accuracy of the use of terms in sports massage videos in product development	90%	90%
5	The use of characters / letters in development products so that they are easy to read	100%	100%
6	The sports massage material presented is by the ability and character level of students	80%	80%
7	Product overall appearance design conformity	90%	90%
8	Conformity between the overall background and product objectives	90%	90%
9	The colour match of the product does not confuse the screen display and the information conveyed is	100%	100%
10	The attractiveness of sports massage learning materials on product development	100%	100%
11	The material presented can provide satisfaction for users	90%	90%
12	Video capabilities make users understand without the addition of other teaching materials	100%	100%
13	Video ability in delivering material without the help of lecturers/instructors	80%	80%
14	Ease of use in the learning process independently	80%	80%
15	The resulting product can foster comfort in student learning	90%	90%
16	Products made are able to increase learning motivation	100%	100%
17	The effectiveness of the movement material for basic sports massage techniques on products	90%	90%
18	The music developed can raise the enthusiasm and motivation of students	90%	90%
19	The music in the massage video matches the sports massage movements developed	90%	90%
20	Music appeal in products	90%	90%
21	The music used in the video corresponds to the characteristics of students	100%	100%
22	The attributes used by the display in the product are by the characteristics of students	80%	80%
23	The clothes used by the props in the product look decent	90%	90%

**Conclusion: The product is feasible but it was revised for some items menu in the model.**

Table 1 describes the overall validation results of sports massage experts. The Android-based sports massage model is feasible with revisions to several aspects of the learning material menu. The suggestions and inputs given by sports massage experts that should be revised before proceeding to the next stage are as follows:

- The menu options that are displayed are more comfortable and spread out so that students are more flexible in choosing the material they want.
- The menus and icons have been changed to be simpler and easier to use, making it more interesting.
- The evaluation submenu would be nice to change from description to multiple choices to find out the learning outcomes quickly.
- It is necessary to add instructions for using the application so that students can easily use it.
- Changed the appearance of the selection menu from vertical to spread.
- Change the icon and appearance of the menu options.
- Fix the problem by changing the description to multiple-choice.
- Added app user guide content on the home screen.

## 2. The Result of Learning Expert Validation

Table 2. Learning Expert Validation

No.	Assessment Component for Product	Expert 1	Expert 2
1	The indicators chosen are by the basic competencies	90%	90%
2	Is the material by the learning objectives?	80%	80%
3	The presentation of the material is interactive so that it motivates students to study independently	90%	90%
4	Presentation of material with android media to increase students' learning motivation	80%	80%
5	Clarity of instructions in learning	100%	100%

No.	Assessment Component for Product	Expert 1	Expert 2
6	The suitability of the motivational material with the material to be studied	80%	80%
7	The material presented is easy to understand	90%	90%
8	With pictures and learning videos on android products, it makes it easier for students to learn the material clearly	80%	80%
9	The material is presented by the development of science and technology that is developing	100%	100%
10	The use of mobile learning media leads students to be more independent	90%	90%
11	The use of android media products is easy to access	90%	90%
12	Increase students' knowledge of the material presented	100%	100%
13	The android media increase the effectiveness of students in learning	80%	80%

This model emphasizes massage techniques that are presented with technology that is often used by students. However, some things need to be improved, namely, the display can be made simpler and more attractive according to the age of the user. Thus, the resulting product is very good and innovative. This product is very helpful and makes it easier for students in the massage learning process so that learning is more interesting, effective and efficient. Some of the model improvements include:

- The display is made simpler and simpler
- Choosing the right and interesting words for the name of the submenu, for example, the illustration is turned into a simulation video.
- The initial display is made to visualize the message so that it is easier for users to understand, especially students.
- The competency sub-menu still uses the old lesson plan format so it needs to be updated according to the Indonesian National Framework Qualifications format
- Improve the appearance and change it to be simpler and simpler.
- Revised the illustration into a simulation video
- Improved the initial display to make it more attractive and easy for users to understand.
- Updating the lesson plan to reflect the latest Indonesian National Framework Qualifications.

### 3. The Result of Media Expert Validation

Table 3. Media Expert Validation

No.	Assessment Component for Product	Expert 1	Expert 2
1	Conformity of the design of the overall appearance of the product	100%	100%
2	Conformity between the overall background and product objectives	80%	80%
3	The colour match of the product does not confuse the screen display and the information conveyed	100%	100%
4	The suitability of using characters/letters on the product so that it is easy to understand	90%	90%
5	Suitability of using buttons/buttons on the product	90%	90%
6	Audio/music compatibility doesn't mess up the product's appearance	90%	90%
7	The suitability of the use of audio/sound with the character of the product	90%	90%
8	Audio volume quality	100%	100%
9	Interesting video display	100%	100%
10	The examples that are presented are clear	90%	90%
11	Video as a simulation	100%	100%
12	Image sharpness quality	100%	100%
13	Compatibility of video resolution with room/location conditions	90%	90%
14	The suitability of music illustration, narration, text and dialogue	80%	80%
15	Shooting angle precision	80%	80%
16	The attraction of the scene/setting in the video	90%	90%
17	Combination of brightness and color	90%	90%
18	The suitability of the music illustration with the scene	90%	90%
19	Balanced vocal narrator, music and sound effects	100%	100%
20	The material presented in the product can be remembered for a long time	90%	90%
21	Ease of use in the independent learning process	90%	90%
22	Ease of use in the learning process inside and outside the classroom	90%	90%
23	As a learning resource	90%	90%

No.	Assessment Component for Product	Expert 1	Expert 2
24	Users can see the main page clearly when entering the program	90%	90%
25	Users can choose the desired menu	100%	100%

Media experts describe this product as very interesting and useful in the learning process. The use of audio text visualization is designed according to the target learning needs. Some inputs from media experts are as follows:

- The product has a file capacity that is too large, so it will be difficult for students to install it, so it needs to be converted to a smaller size.
- The product needs to add a profile photo at the end.
- The product is expected to be able to operate on smartphones that have the lowest Android OS, namely 5.5.
- The product needs to have an "exit" icon so that it doesn't continue to be used by the system, and the cellphone gets hot quickly.
- The selection of the application names "massagesmartapps" does not have a unique character, so the application name can be replaced with characters that are popular and easy for users to remember.
- The product should reduce the file capacity from 900Mb to 300 Mb.

The results of data processing by six experts from three categories showed good results. This means that the Android-based massage sports model product has been well developed. The product only needs to be perfected according to the capacity, needs, and capabilities of the student's smartphone so that this learning material can be accessed by all students. This product can be re-examined through a feasibility test in a larger study involving students. Thus, the assessment of product development results is not only given by experts but also by students and colleagues, who can also provide input on the product. According to experts, the 3D graphic design that appears on the submenu can be made with a low capacity so that students can easily access it (Kearney et al., 2012). Currently, Android has been used as the basis for designing learning materials that can be focused on sensory and motor training (Refiater et al., 2020; Al-Haliq, 2020).

In addition, from the results of observations on this Android application, the product has presented the history of the development of sports massage, the goals and benefits of sports massage, indications and contraindications of sports massage, requirements in sports massage, principles of sports massage, basic sports massage techniques, as well as examples of basic massage techniques. Thus, the material presented in this application is quite complete, like a printed book. As we know, android-based digital books can trigger an interactive and independent learning environment between students and teachers because students' enthusiasm for learning tends to be high (Hediasah, 2019). From the explanation of the menus and submenus, the experts assessed that they were systematic. With this application, students can still understand the basic techniques of massage movements in sports. Especially in the COVID-19 pandemic situation, technology has also made learning activities easier (Lyengar et al., 2020).

## CONCLUSION

From the results of data processing, it can be concluded that overall, the Android-based massage learning material product is feasible to use. However, this product can be redeveloped through large-scale trials involving several universities, so that the validation process does not only involve experts. However, students and colleagues can also assess the product. This product only requires improvements to some parts of the menus and submenus, such as instructions for using the application, display with scatter patterns, and adding instructional content. While the display can be made simpler, there is a simulation video, adding competence according to the Indonesian National Framework Qualifications format. While in the display, the better file capacity is lower so that it is easily accessible by the lower Android OS. This sports massage learning application can be installed by all users who have an Android mobile phone in the Play Store by providing a 500 MB capacity slot.

The results of this study have implications for the understanding of teachers who have developed learning materials. The learning materials that have been developed must be tested several times, such as through expert



validation tests, tests of the perceptions of students and peers, and tests of the learning process in class with a larger capacity of the participants involved. However, in this study, only experts tested, so that further researchers or this research can still be continued at the large group testing stage by involving students, colleagues, and the learning process.

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#### CONFLICT OF INTEREST

The study does not have a conflict of interest.

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