

## DEVELOPMENT OF MEDIA BASED ON MOBILE LEARNING MATERIALS OF BASKETBALL BASIC TECHNIQUES

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### **Abstract**

*The development of learning media by utilizing technological developments can improve learning and the delivery of information. This study aims to develop and produce an iSpring suite application product that contains basic basketball techniques for students of the Department of Physical Education, Health and Recreation, Faculty of Sports Science, State University of Malang. This development method uses Research and Development by Lee & Own (2004) with five stages, namely 1) analysis, 2) design, 3) development, 4) implementation and 5) evaluation. Based on the results of the study of data from basketball experts, the percentage was 96%, learning experts were 90.4%, media experts were 98.2%, and involved 40 students of the PJKR Department. The distribution of small group trials was carried out on students of the 2020 PJKR Department, totaling 10 respondents with 2 male students and 8 female students. For the large group trial, there were 30 respondents with 12 male students and 18 female students. The trial results obtained 90% small group and 91% large group. Based on these data, it can be concluded that the product development of learning materials for basic basketball techniques based on this application is very valid and suitable for use by students of the PJKR FIK UM Department.*

**Keywords:** *Development; Learning; Application; Basketball*

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## INTRODUCTION

In the world of education in Indonesia, developments can be seen in the increasing diversity of learning methods used in the learning process. The right method used in the learning process is by utilizing various media to improve the quality of learning outcomes and the achievement of a goal in learning. The problem in the implementation of learning is the lack of use of technology in the learning process, this phenomenon is caused by a lack of skills in processing and managing learning media with technological developments so that these problems can affect understanding and interest in learning. Based on the results of research observations

in the PJKR FIK UM Department which was carried out on July 13, 2021, conducted a needs analysis by distributing questionnaires via google form to students who had taken basketball learning courses so that 33 respondents were obtained. The results obtained are 72.7% of students have used application-based learning media, 57.6% of students have never used application-based media in learning basic basketball techniques, 90.9% of students need effective application-based basketball learning media and efficient, 97% of students choose the basic basketball technical material which is expected to be listed in the application and the average media used when learning basketball material only uses sipejar, youtube, and google classroom. In the lectures on basketball learning courses, there are no learning resources that use mobile learning applications. So the researchers made the development of application-based learning media with basic basketball technical material which is expected to be a source of student learning. That way students can access the application and study the material contained in the application online or offline anywhere and anytime because the application can support the learning process.

Based on the above observations, it is important to realize that education is a major factor in improving the quality of human resources. Education is a primary aspect to create a learning atmosphere and learning process so that students can actively develop their potential to have strength in religious spirituality, self-control, personality, intelligence, noble character, and skills needed by themselves, society, nation, and state. To achieve the goals of national education, it is necessary to prepare good plans, approaches, and strategies. According to (Taqwim et al., 2020) the learning process has three aspects achieved cognitive, affective, and psychomotor. These three aspects must become a single unit to create personal qualities that reflect the integrity of mastery of attitudes, knowledge, and skills. Therefore, education must be carried out optimally and as well as possible because the success of a nation lies in education that can improve its human resources.

Education is a form of interaction of several factors involved in achieving educational goals, the interaction of several factors is carried out clearly in the

learning process. Physical education is a process of seeking knowledge that involves physical activity, to develop several aspects, namely aspects of attitudes, knowledge, and skills (Assis & Saputra, 2019). Physical education is an educational model created through learning that has several elements such as cognitive, affective, and psychomotor (Rahman et al., 2020). Physical education is an educational process using learning experiences of physical activities, sports, and games where in this learning it is intended that students achieve overall individual development both physically, mentally, and emotionally (Arief et al., 2021). Physical education is an inseparable part of education, in general, that affects the potential of students in terms of cognitive, affective, and psychomotor through physical activity (Prayogo, 2021). Through these activities, you will gain various kinds of experiences for life such as intelligence, emotion, attention, cooperation, skills, etc. In physical education, there are many sports, one of which is basketball. Basketball is a sport where the ball is the most important medium in the running of a game. This sport is carried out by two teams, each team consisting of five players. In the implementation of this basketball game, several basic techniques must be understood and mastered. The basic techniques of basketball are dribbling, passing, and shooting (Sitepu, 2018). The basic basketball technical material is listed in the 2020 curriculum which includes SCPL and CPMK in the PJKR FIK UM major, as follows:

**Table 1.** Standards of Graduate Learning Outcomes (SCPL) and Basketball Course Learning Outcomes (CPMK) in 2020

SCPL	CPMK Basketball Course
1. Mastering concepts and theories about game and sports activities based on concepts and theories of sports science (P) and being able to implement and study science and technology in the form of quality and measurable independent performance (KU) so that they are skilled in studying and applying and utilizing technology in designing and solving problems in game and sports activities (KK) and can internalize academic values, norms, and ethics (S) 2.1 Students understand the profile of basketball	2.1 Students understand the profile of basketball 2.2 Students have knowledge and skills in performing basic basketball techniques 2.3 Students have knowledge and skills in playing basketball

Source : UM Academic Information System 2020

Learning Outcomes of Basketball Courses (CPMK) can be a reference in the learning process. Learning is a process in education that aims to acquire knowledge, skills, and positive values (Sianturi, 2016). Learning is an activity that involves educators and students and is structured, realized, and directed to achieve goals (Ariska et al., 2018). Physical education learning is learning that is carried out outside the classroom or in the field, but at this time physical education learning is carried out in a classroom or room where the learning process uses various kinds of electronic media such as laptops, LCD, projectors and the role of other media in the learning process. Media in education is needed as an intermediary in delivering messages, to minimize failures in the communication process (Hakim, 2018). Learning media is an important aspect of the educational process. According to (Nurrita, 2018), learning media is a tool used to assist in the teaching and learning process so that the meaning of the message conveyed becomes clearer and learning objectives will be achieved effectively and efficiently. Learning media is one way to channel messages to students so that they can create attraction and a sense of enthusiasm arises in the learning process (Pamungkas & Dwiyoogo, 2022). As an educator, you must also have creativity in making learning more interesting and not seem boring.

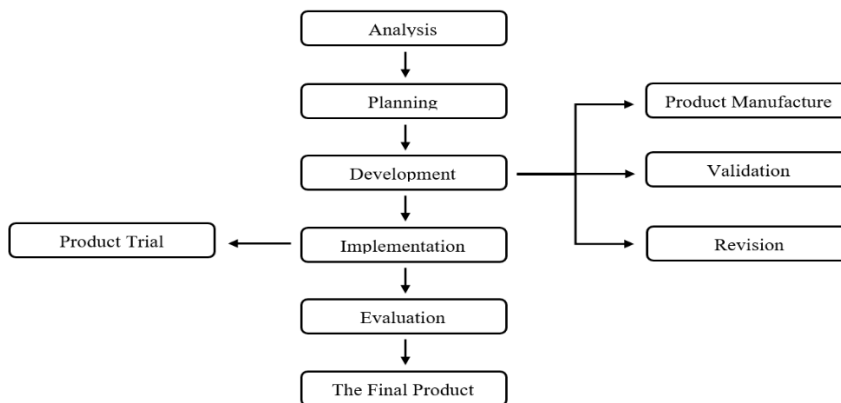
In this era, it is required to master the growing technology by creating a learning media so that learning objectives will continue to be achieved and educators must make the learning process always conducive (Husdarta & Saputra, 2013; Purwaningtyas & Hariyadi, 2017). According to (Rifai et al., 2020) interactive multimedia is a technological development media because of the incorporation of more than one media element consisting of text, images, photos, videos, audio, and animation in an integrated manner which makes the learning process more interesting. The following are examples of interactive multimedia that are often used in the learning process such as autoplay, PowerPoint, sigil, web, Articulate Storyline, and android applications. However, researchers prefer to use the android application, namely iSpring because this learning media can support the learning process anywhere and anytime, learning does not have to be face-to-face,

but students are free to do learning anywhere and can apply the material provided in the application, and not need to use the internet or can be used offline. The iSpring suite is software that has superior value among other devices that are generally used in the field of education (Juraev, 2019). an iSpring suite is a tool that converts presentation files into flash and SCORM/AICC forms, which are forms commonly used in e-learning through the Learning Management System (LMS). Educators can easily use the iSpring suite application attractively. iSpring suite is an application that is used to improve the ability and interest of students in carrying out learning (Handayani & Rahayu, 2020).

Research conducted by (Fatmala & Yelianti, 2016) explains that using Android-based interactive multimedia is feasible to be used as an independent learning medium. Previous research on the development of learning media using iSpring software for learning is as follows. Based on research (Handayani & Rahayu, 2020) the use of the iSpring application and app builder for class X mathematics learning shows a feasibility level with a very feasible category, so the resulting product can be used as a guide for teachers in teaching. Then based on research according to (Solihah, Siti., Anwar, Saeful., 2020) the use of the iSpring application in learning motion systems in humans at SMA Darussalam Garut produces interactive multimedia products that are applied in learning that can increase student interest in learning with the material presented is easier for students to understand because includes text, images, animation, sound, and video.

## **METHOD**

This research on the development of learning materials for basic basketball techniques refers to the research and development model that has been developed by (Lee, W.W. & Owens, 2004) with the steps of 1) analysis, 2) design, 3) development, 4) implementation and 5) evaluation. Based on the steps proposed by Lee & Owens, these are steps to solve problems in research and later can produce a product. At the development stage, the researcher modified the research procedure to match the planning stage with effective development steps in the figure below:



**Figure 1.** Procedure Chart for Mobile Learning-Based Media Development for Basic Basketball Techniques for Students of PJKR FIK UM

In the development of this learning media, there are several stages that must be passed in accordance with research and development procedures, as for the stages are as follows: 1) Researchers conduct a needs analysis by distributing a needs analysis questionnaire in the form of a google form to students majoring in PJKR with a total of five offerings, 2) Researchers plan the design of mobile learning-based learning applications and realize products from designs that adapt the concepts that have been planned. 3) Then the researcher validated the expert consisting of three experts or validators, namely, media experts, learning experts, and basketball experts who later on these experts would provide criticism, input, and justify the feasibility of the product for testing, 4) Researchers revise the product based on criticism and suggestions from experts or validators, 5) After the product is declared to be able to continue testing, the researcher immediately conducts a small group trial with a sample of 10 students majoring in PJKR consisting of 2 students each offering as respondents, 6) After a small group trial with very valid results and feasible to be followed by a large group trial, the researchers conducted a large group trial with a sample of 30 students majoring in PJKR consisting of 6 students each offering, 7) Then the researchers conducted an evaluation to improve the product by improving learning media in accordance with suggestions about the feasibility of product learning media developed, and 8) the

final product in the form of application-based basketball basic technique learning media.

To accumulate the value of the results of the experiment, the researcher used data analysis techniques in the form of a Likert scale. The purpose of using the Likert scale is to measure the attitudes, opinions, and perceptions of a person or group of people about social phenomena (Sugiyono 2014). The categories of scores on the Likert scale are as follows:

**Table 2.** Types of Rating Likert Scale

Value	Description
4	Very Good
3	OK
2	Not Good
1	Very Not Good

(Sugiyono, 2016)

The formula below will be used to process the following validation data:

$$V = \frac{Tse}{Tsh} \times 100\%$$

Information:

V: Validation

Tse: Total empirical score

Tsh: Total score of hope

100% : Number constant

With the results of the data obtained, researchers will adjust to the product category. This adjustment aims to make it easier for researchers to conclude from the results of data processing. The percentage criteria can be seen in the table below:

**Table 3.** Percentage Criteria

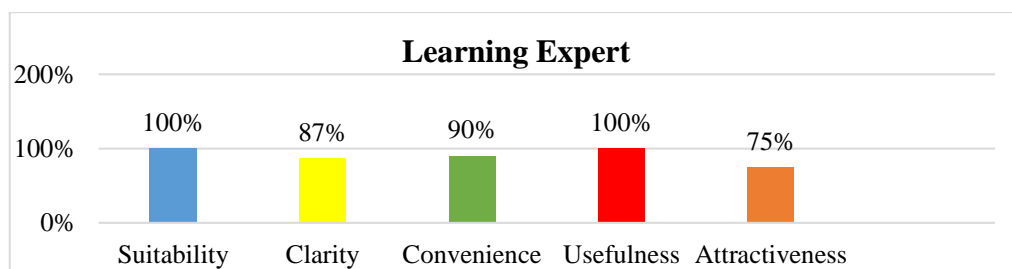
Percent	Category	Meaning
75,01% - 100,00%	Very Valid	Used without revision
50,01% - 75,00%	Quite Valid	Used with minor revisions
25,01% - 50,00%	Less Valid	Can not be used
00,00% - 25,00%	Invalid	Forbidden to use

(Akbar & Sriwiyana, 2010)

## RESULT AND DISCUSSION

In this result, we will discuss the products developed and the data from the trial results. This product contains materials, pictures, videos, evaluations, or quizzes on basic basketball technical material, as well as biodata for the

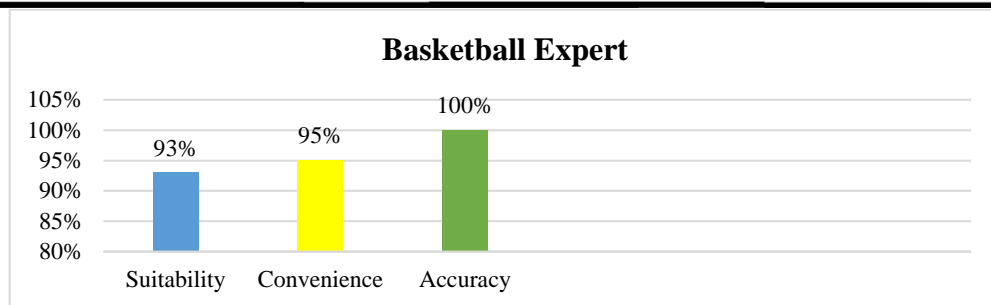
application's authors. This iSpring suite application can be used online or offline and can also be accessed via a computer or laptop and smartphone. Then the components in the application will be analyzed for feasibility by learning expert validators, basketball expert validators, and media expert validators. After getting an assessment from each validator, this product will be tested on students majoring in PJKR FIK UM. The results of data analysis from several experts, small groups, and large groups will be presented in the form of a diagram as follows:



**Figure 2.** Learning Expert Assessment Diagram

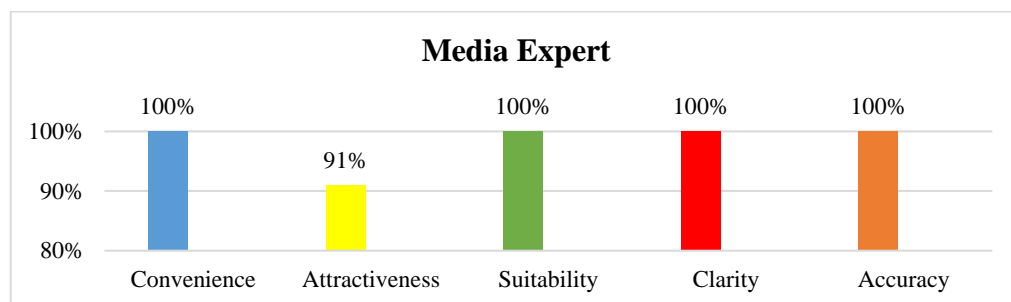
Febrita Paulina Heynoek, S.Pd., M.Pd as a learning expert validator, as a lecturer in basketball courses at the Department of Physical Education, Health and Recreation at the State University of Malang. Based on the results of the validator's assessment in the field of learning experts which was carried out based on the criteria for the ease of coverage of learning material and content with a score of 90.4%, the criteria for conformity of the scope of material and learning content with a score of 100%, the criteria for clarity of material coverage and learning content with a score of 87%, the criteria for the ease of coverage of learning materials and content with 90% results, product usefulness criteria with 100% results, and product attractiveness criteria with 75% results. For the validity of the value of 90.4% in the category (very valid). As for the notes given by the validator, it is necessary to fix the latest Malang State University logo which is found on all application pages, and repair the cover image to make it look more attractive.





**Figure 3.** Basketball Expert Rating Chart

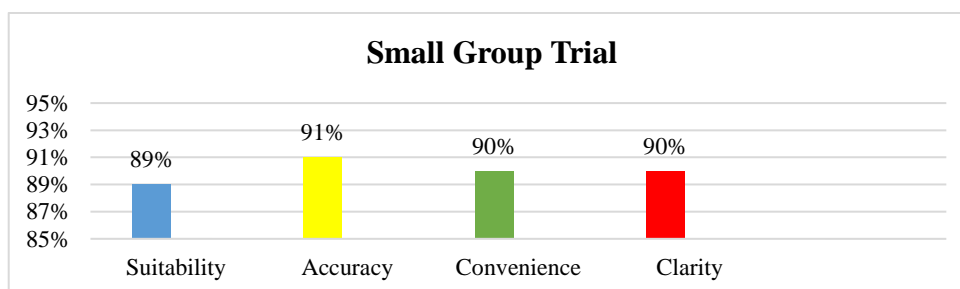
Kristianto Adi Cahyono, S.Pd is a basketball expert validator, as a teacher and basketball head coach at SMA Charis National Academy Malang. Based on the results of the validator's assessment in the field of basketball experts, which was carried out based on the criteria for the suitability of the content of the material with a score of 93%, the criteria for the ease of content in the product material with a score of 95%, the criteria for the accuracy of the content of the material with a score of 100%. For the validity of the value of 96% in the category (very valid). The notes given by the validator are to simplify the language in the basic technical steps of basketball to make it easier to understand.



**Figure 4.** Media Expert Rating Chart

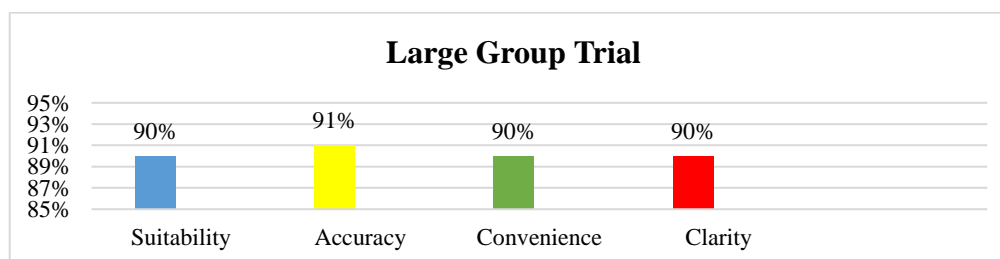
Eka Pramono Adi, S.IP, M.Si as media expert validator, as a lecturer at the Department of Educational Technology at the State University of Malang. Based on the results of the validator's assessment in the field of media experts which was carried out based on the criteria for the ease of use of application products for learning with a value of 100%, the attractiveness criteria for application product design for learning with a score of 91%, the criteria for the

suitability of application products for learning with a score of 100%, clarity criteria application products for learning with a score of 100%, and the criteria for the accuracy of application products for learning with 100% results. For the validity of the value of 98.2% in the category (very valid). The notes given by the validator are generally good, just revise the layout of the buttons on the menu to make it clearer and more interesting.



**Figure 5.** Small Group Trial Assessment Diagram

Based on the results of a small group trial conducted by distributing online questionnaires to students of the PJKR FIK UM class of 2020, with several subjects as many as 10 students, to get a percentage result of 90%, then the results are converted based on percentage criteria which indicate that the product can be categorized as very valid.



**Figure 6.** Large Group Trial Assessment Diagram

Based on the results of a large group trial conducted by distributing online questionnaires to students of the PJKR FIK UM class of 2020, with a total of 30 students, the percentage result is 91%, then the results are converted based on the percentage criteria which indicate that the product can be categorized as very valid.

## Discussion

In this development research, researchers develop learning products in the form of the iSpring suite application. In the iSpring suite application, many

interesting components can help students learn material anywhere and anytime that can be accessed offline or online. With interesting components such as material presented in the form of text, images, and videos, it can attract students to be interested in learning basic basketball technical material. iSpring is a tool that can convert presentation files into flash and iSpring can be accessed online and offline (Jannah, Miftahul., Husna, Aminatul., Nurhalimah, 2020). An iSpring suite is a tool related to Microsoft Powerpoint, which is then published in HTML form (Sasahan et al., 2017). The iSpring suite can turn Powerpoint media into a more attractive and interactive form of flash and can be accessed via a laptop, computer, or smartphone (Ariyanti et al., 2020). The iSpring suite has the advantage that it can present forms of questions and final assessments, then the iSpring suite can also record audio and record video (Kusuma et al., 2019). The iSpring suite is interconnected with Microsoft Powerpoint so that it can facilitate the creative process and does not require special skills (Cahyanti et al., 2019). iSpring suite is an application that can be used to produce multimedia products.

The use of multimedia applications in the implementation of basic basketball technical learning materials can provide benefits to facilitate students in understanding the material presented (Agustin & Kurniawan, 2021). According to (Muklis et al., 2020) interactive multimedia can increase interest, motivation, and interest in participating in the learning process. A similar opinion was expressed by (Kurniawan, Ari Wibowo., Tangkudung, n.d.) that the use of interactive multimedia can increase students' interest in learning so that students are helped in understanding the material. Based on the above opinion, the benefits of using multimedia in learning besides being able to increase student interest in learning, for educators, multimedia in the form of applications can be useful as a guide in the learning process to achieve learning objectives.

Physical education is a movement experience that can improve a person's ability in terms of physical, mental, knowledge, and social, a person's ability can be seen through movement skills, progress in thinking or knowledge, social, emotional and spiritual development (Nur et al., n.d.). Physical education cannot achieve

learning objectives without the right approaches, strategies, and learning models (Jayul & Irwanto, 2020). Physical education is an important learning process from all educational processes with the aim of developing and maintaining the body through physical activity (Taqwim et al., 2020). Physical education is an educational process that carries out physical activities with the aim of developing several aspects such as health, fitness, critical thinking, and healthy living that leads to growth stimulation and balanced physical and psychological quality development performance (Sari & Pujianto, 2018). According to (Fitriady et al., 2020) physical education is a learning process carried out through movement activities that are formed to improve physical fitness, develop motor skills, healthy living behavior and knowledge, emotional intelligence, and sportsmanship. One of the topics in physical education is basketball. Basketball is a large ball game played by two teams, each team consisting of five people, where each team tries to put the ball into the ring to score points, where the ball is passed, shot, and dribbled. (dribble) or reflected in all directions according to the regulations (Kurniawan, 2011). Basketball is a sport played by two teams and each team consists of 5 people who aim to collect points by putting the ball into the ring (Hafridarli, 2018). In realizing good physical education, media is needed that is in accordance with existing technological developments.

Based on the results of the initial needs analysis where as many as 90.9% of the students of the PJKR FIK UM Department needed the development of application-based basketball basic technique learning materials to assist in the learning process of the material in an interesting and not boring way. Based on the results of the assessment from media experts, this application is useful for users and this application is also made attractively so that users can use the application as well as possible. Learning media can create a learning process that is more effective, interesting, and fun (Novita & Harahap, 2020). The role of learning media is very influential on the learning process in the current era, students will experience difficulties if the learning media used are inadequate (Ayu et al., 2021). Learning media is an auxiliary tool in the learning process so that the material presented is

clearer and can achieve educational goals (Nurrita, 2018). Learning media must be able to improve the quality of learning for both educators and students (Tafonao, 2018). Learning media is expected to maximize the learning process inside and outside the classroom, learning media can also motivate students to learn happily and actively, to improve learning outcomes (Sari & Pujianto, 2018).

The use of media in the basketball learning process, especially in the basic basketball technical material, has not been implemented effectively. Basketball is a type of game that has a complex technique. This means that the technique consists of a combination of neatly coordinated technical elements so that they can play well. To achieve maximum results in the game of basketball, it is necessary to learn basketball game results such as basic techniques of catching the ball (catching), basic techniques of dribbling (dribble), basic techniques of passing the ball (passing), and basic techniques of shooting (shooting) (Perbasi, 2006). Basketball is a game played by two teams with each team consisting of five players. The goal in the game is to get a score (score) by putting the ball into the opponent's basket and trying to prevent the opposing team from scoring. In dribbling the player can push the ball, hit the ball with open palms, throw, roll or dribble in any direction on the playing field.

The advantages of this application product for learning basic basketball technical material are packaged in the form of an application that is made attractively, easy to use, and operated, and this application can also be used without a data network or internet. In the application product developed, there is a main menu containing learning chapters of basic basketball technical material including history, facilities, and infrastructure, basic technical material, exercise variation material, videos, quizzes, and reference lists. In the material menu, there are basic basketball techniques, namely dribbling, passing, shooting, and pivots. The resulting product can be used by educators in delivering material, during learning to improve students' knowledge and skills accompanied by multiple choice questions as an instrument for evaluating student learning. With the development of this application product, it is hoped that learning basic basketball techniques can

be understood easily and can also attract students in learning basic basketball technical material, and educators get interesting media in conveying learning. Meanwhile, the weakness of this application product for learning basketball basic technical material is the large application capacity size, so using the product requires a device with a larger space capacity.

## CONCLUSION

The problem of this research is the lack of development of learning media on basic basketball technical material so educators need effective and efficient application-based learning media for basketball basic technical material for students of the PJKR FIK UM. Based on these problems, researchers want to develop multimedia in basketball learning through the iSpring suite application. Then the results of the development of learning materials for basic basketball techniques based on the iSpring suite application can be concluded based on the analysis of application product data that obtained 90% small group trial data and 91% large group trials, then the basketball material application product is suitable for use in basketball learning basketball basic technique material. This product will make it easier for students to learn and practice basic basketball technical material. Because this can be proven by the results of the product feasibility test, the results of group trials, the effectiveness, and effectiveness of the product, and the attractiveness of students, the results are average (very effective), so it is feasible to develop application-based learning media development products for implementation in lectures.

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