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Development of E-Book Textbooks in Injury Prevention and Treatment Subjects Based on Media Flip Book Maker

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Abstract

This study has the objectives of knowing the results of identifying learning outcomes problems, reviewing and planning products, knowing the consequences of expert trials, the results of small group trials and large group trials, and knowing the effects of product effectiveness tests from the E-Book Textbook for the Prevention and Treatment course. Injury-Based Media Flip Book Maker. This study uses a research development/RnD (research and development) approach. The data source for this research is IKOR Untirta students class of 2018-2021. The data collection techniques used were: a) Interview techniques, b) Questionnaire techniques, c) Test techniques, and d) Observation techniques. Qualitative and quantitative approaches were chosen as data analysis techniques in this study. The research results in the first stage showed that the final percentage of the evaluation of academic experts was 80.2%, with the results of assessments from practitioners, namely 84.2%, so an average of 82.2% was obtained from the expert test. And the two experts have stated that the contents of the product design are feasible for further trials in the limited/small group trial stage. From the table above, the initial product in each chapter has an average rating of 79% for ease of understanding, 69% for attractiveness, and 84% for usefulness. And it needs improvement at several points in specific chapters to get better results from the initial product. In the large group trial stage, each chapter has an average rating of 88% for ease of understanding, 87% for attractiveness, and 90% for usefulness. The points in each chapter no longer require significant improvement because the researcher assesses from the table above that each chapter has obtained satisfactory results on the product effectiveness test. The conclusion from this study is that the methods that have been used so far have not been able to make students understand PPC material fully; product preparation is prepared using systematic steps referring to the current P2SIKI curriculum; in the expert test it is stated that the contents of the product design are feasible for testing the next stage, the results of the small group and large group trials need to be carried out several evaluations which are completed at the product revision stage.

Finally, the effectiveness test results show a significant effect of using e-book textbooks based on flip book maker media on student understanding in injury prevention and treatment courses.

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INTRODUCTION

The pandemic changed how people live in the world in terms of many segments. Human beings of all classes and generations are forced to remain adaptable to these changing conditions. This change also touches on the education segment. Learning methods in the world have changed very drastically; offline learning, which is usually done, is now forced to be carried out online to maintain the quality of education in each country. No exception in Indonesia, especially the Untirta sports science study program. Residents of the Untirta academic community are often forced to come into contact with computers, including lecturers and students, and to carry out online learning without eliminating the fulfilment of the curriculum through existing teaching materials. Teaching materials are one of the learning resources that must be compiled by teachers and need to be developed with scientific procedures so that they can meet the requirements for teaching materials issued by Higher Education. (Muga, Suryono, & Januarisca, 2017). Teaching materials are generally found in textbooks, where the definition of a textbook is a set of materials that are systematically arranged, both written

and not, to create an environment or atmosphere that allows students to learn (Kemdikbud, 2013). In addition, the Director General of Higher Education (2014) added that textbooks are information, tools and texts needed by teachers or instructors for planning and studying learning implementation. And the definition of the book itself According to Wahya and Ernawati (2013:123), a book is a collection of bound sheets of paper containing writing or blank.

It is undeniable that the effectiveness of online learning still needs to outperform offline learning in terms of the quality of knowledge transfer. Budiman (2013) explained that there are two types of knowledge, namely explicit and implicit.

When the academic community was always forced to be familiar with computers, it turned out that many students did not have computers because the price of computers soared during this pandemic. Therefore, there is a need for practical learning innovations that can improve student learning outcomes both online and offline later. One of them is to make optimal use of audio-visual media. According to Dwiyoogo (2008:334), audio-visual media is "the medium of listening and sound view, as is common in television, sound

films and video". According to the experts' understanding above, audio-visual media can support learning by projecting material, such as films, slides and images. In addition, it is now known for its e-book technology. An e-book or electronic book, also known as a digital book, is an electronic version that is felt to help the current learning difficulties. This is because electronic books are easier to carry around because of their small size (adjusting to cellphones, tablets, computers, etc.) compared to printed books that students generally have. (Octamela, Suweken, & Ardana, 2019). Even related to research on electronic books, the use of electronic books can increase the interaction between educators and students in learning, and students are more interested in using electronic books in learning Lestari, R. T., Adi, E. P., & Soepriyanto, Y. (2018).

The Injury Prevention and Treatment course is compulsory in the P2SIKI curriculum, which means that this course must be given to all sports study programs in Indonesia. This course contains materials that sports practitioners need because the world of sports is very close to the name of injury. Injury is a disorder that occurs in the body that results in pain, heat, redness, and swelling. It cannot function appropriately in muscles, tendons, ligaments, joints and bones due to excessive movement or accidents (Ali Satia Graha and Bambang Priyonoadi, 2012). This course is essential to give because the first step to prevent the risk of more severe injuries, knowledge of sports injuries, can be an anticipation for students and graduates in

carrying out activities as sports practitioners so that they can provide first aid to injuries quickly and precisely, and can prevent injuries both for themselves and others. (Simatupang, 2016).

In addition, expertise in applying the science of Injury Prevention and Treatment is one of the community's benchmarks for campus outcomes. This means that the more expert students can use this knowledge in society, the view of the University where the student seeks knowledge is also more positive. However, with conditions like this, it is feared that the quality of study program outputs will decrease due to insufficient learning, which will also impact the community's assessment of the University, especially the external study program. So it is necessary to find solutions and innovations in learning media that can significantly help the learning process both online and offline later. It is known that several learning resources can be used to introduce injury relief and treatment, including smart cards, audio-visual media, pocketbooks, and so on. (Meikahani & Kriswanto, 2015)

This flip book maker media can help to make this happen. The kvisoft flipbook maker application is one of the applications that support as a learning medium that will help in the learning process because this application is not focused only on writing but can include motion, video, and audio animations that can make an interactive learning media enjoyable so that learning is not monotonous. (Wibowo & Pratiwi, 2018). In addition, the advantages of this flip book maker media are that it can

directly display narration or steps to handle injuries, insert videos in practice and pictures and can be accessed through laptops or cellphones during shopping and after learning. So that students can study and practice injury confectionery material in more detail to improve their learning outcomes.

Therefore, students need a textbook containing material from the existing Injury Prevention and Treatment Course, gamba-pictures of injuries, anatomy of body parts, and practical videos for managing injury treatment. With the existence of a flip book maker-based Injury Prevention and Treatment textbook for students, it is hoped that later it can make it easier for students both from until or even outside Untirta to study the injury prevention and treatment course material more efficiently and improve student competence both in the academic environment and professional environment later.

METHODS

This research is development research (Research and Development). This research uses the development research method, Degeng (2002: 1) concluded that the definition of development research is scientific research that examines a theory, model, concept, or principle and uses the results of the study to develop a product". Development research is a type of research that aims to build something that exists or creates something new and has never been created to support learning activities. So development research only

sometimes develops new products; it can be by refining existing products that can be accounted for. In this study, product drafts will be made by researchers, of course, referring to the RPS and draft textbooks that have been made in the Prevention and treatment of injuries course previously by the course supervisor, which will later be refined according to the problems found from the implementation of the Borg and Gall model development stages. The selection of this model is due to the conformity with the development carried out by the researcher with the Borg and Gall development model, which consists of 10 stages, there are ten steps, namely: (a) Potential and problems, (b) Data collection, (c) Product design, (d) Design validation, (e) Design revision, (f) Product trial, (g) Product revision, (h) Usage trial, (i) Product revision and (j) Mass production.

FINDINGS AND DISCUSSION

Development research can be broadly concluded as a solution to problems found in the field. Degeng (2002:1) completes the meaning of development research: "scientific research that examines a theory, model, concept, or principle, and uses the results to develop a product". Based on the development research procedure, four groups of analysis conclusions are produced and divided into several stages, which will be explained as follows.

The implementation stage starts with a preliminary study, the initial process of

research that has a problem-based nature. According to Arikunto (2009:26), "Preliminary studies are activities carried out by prospective researchers to hold temporary data collection for the sake of certain steps to be passed". Preliminary studies are early identification of the problem that you want to reveal and discuss in the study. From the scope that has been prepared, steps will be formulated to be carried out in the research process based on existing theories. At this stage, two activities will be carried out, namely, needs analysis and analyzing data resulting from needs analysis, which are described in the following sections.

Based on preliminary studies that have been carried out, it is known that the use of learning media can help lecturers in delivering lecture materials to students more effectively and efficiently. Learning media can change the perception of learning itself so that it can convey the target so that it is more transparent and easier to understand by students and can generate motivation and interest in learning (1). This research focuses on the IKOR Untirta Study Program students, where during this pandemic, the learning process needs exciting and informative learning media and is portable, of course. Especially in the injury prevention and treatment (PPC) course, which is an introductory course in the IKOR study program, really needs learning media that can support learning to be more effective and efficient, can be delivered offline or online and can be studied independently or accompanied. The researcher's activities began with

conducting free interviews with students and lecturers related to PPC learning media.

The analysis of blindness in this study was carried out with free interview techniques. For the interview to be effective, how many stages must be passed, namely; a). introduce yourself, b). explain the intention of arrival, c). present the interview material, and d). ask questions (Jonah, 2010: 358). The results of free interviews with lecturers show that the preparation of material and the management of injuries through e-books have never been carried out among study programs. The PPC learning process was previously delivered through presentations and assignments. Student learning outcomes on the understanding of PPC material still have many shortcomings or could be more optimal when dephasing UTS, so it needs to be remedial, and lecturers give assignments to improve student scores.

Meanwhile, the results of free interviews with students were conducted with several students who had already taken MK PPC. It was found that learning is often done online so that students feel sleepy, and sometimes without falling asleep. In addition, giving a lot of homework simultaneously with other MK makes it difficult to concentrate during MK PPC. In addition, the PowerPoint material given to students needs more detailed information to make students understand fully.

The draft that has been compiled is then changed to a format according to the e-book

format in general, which is then synchronized with the flip book maker application with the hope that students feel more interested in reading anywhere and anytime through laptops and their respective student gadgets.

This product trial consists of several stages that must be carried out, namely, expert judgements on product development designs in the form of Media Flip Book, Maker-based e-books for students. The following steps are the limited trial stage and extensive trials and will involve research subjects.

Product trials are the next step, but with an expert evaluation of the initial product design made. In this stage, the researcher involves two experts with qualifications in the field of injury treatment; one expert is a doctor, and one expert is in the area of practitioners. The academic expert is Dr Rukman, a civil servant who lives in Serang Kota, while the Practitioner is Bimo Alexander. M.Or, who is a licensed lecturer as well as practitioner and domiciled in di Jogja. Expert tests and practitioner tests are carried out to maintain and guarantee the quality of the content created.

The final percentage of the evaluation of academic experts is 80.2%, with the results of assessments from practitioners, namely 84.2%, so an average of 82.2% of expert tests is obtained. And both experts have already stated that the product design content is worthy of the next stage of trials.

The following study stage is a small group trial that includes the research subjects. This stage results from follow-up after experts

have approved the initial product to be developed. From the results of the implementation of a limited trial using a questionnaire containing 12 questions/ correspondents, it can be interpreted that the design of the development product is as follows. Each chapter has an average rating of 79% for ease of understanding, 69% for practicality, and 84% for expediency. So it needs improvement on some points in specific chapters to get better results from the initial product.

According to the results of the limited trial, the product revision will be focused on improving grammar in the kinesiotaping chapter, improving the appearance in the introductory chapter, and kinesiotaping, as well as clarity of information in the preceding chapter because researchers still feel that the assessment obtained is not optimal.

The next stage is a large group trial involving a more significant number of research correspondents. This stage is a follow-up to implementing small group trials of the developed e-book products. From the results of the implementation of the limited test using the same questionnaire with the content of 12 questions/correspondents, it can be interpreted that the design of the development product is as follows.

The initial product in each chapter has an average rating of 88% for ease of understanding, 87% for attractiveness, and 90% for expediency. The points in each of the chapters are no longer in need of meaningful improvement because the researchers judged

from the table above each chapter has produced quite satisfactory results. But even so, there are still a few improvements, especially in the writing system, which still found typing errors.

The completion of the implementation of the widespread trial results will still be revised from the results of the trials carried out as improvements to the products that have been tested, containing responses and input from research subjects who have been involved in the widespread problems. Product revision is carried out to obtain acceptable development results, product revision is carried out continuously starting from after the initial product development to before the implementation of the product effectiveness test. From the assessment of the results in the previous test and the product, revision has been carried out; the product can be carried out to the next phase, namely the effectiveness test.

This product effectiveness test is carried out to determine the level of effectiveness of the development product to be formulated into the final product results and further utilization for the application of learning in the future. For experimental design, using pretest and post-test design with the research subject is in all 3rd semester, ikor students.

The T-paired samples test found an average increase in pretest and post-test at 16.37 points. The significance value (2-tailed) is 0.000 ($p < 0.05$). So that the results of the initial test and the final test undergo significant (meaningful) changes. Based on descriptive

statistics, the initial examination and the final test proved to be the higher final test. The use of flipbook maker-based e-book textbooks has a considerable influence on students' understanding of injury prevention and treatment courses.

CONCLUSION

Based on the results of research data analysis, both in the form of data descriptions and the effectiveness tests that have been carried out, conclusions and discussion of findings can be put forward as follows: 1) The preparation of material through e-books has never been done among Study Programs. The methods used cannot fully make students understand because of the need for more detailed information, and lecturers need to improve student scores; 2) *Preparation of Media-Based Products Flip Book Maker* has been prepared using systematic steps from drafting to product creation; besides, the book's contents refer to the current P2SIKI curriculum; 3) The results of the expert trial stated that the two experts had indicated that the contents of the product design were feasible for further stage trials. In the results of the small group and large group trials, it is necessary to carry out several evaluations, which are completed at the product revision stage; 4) In the results of the effectiveness test, there is a significant effect of the use of e-book textbooks based on *flip book* maker media on student understanding of the subject of injury prevention and treatment.

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