

How to Cite:

Zulbahri, Z., Astuti, Y., Sasmitha, W., Pitnawati, P., Erianti, E., Damrah, D., & Rosmawati, R. (2022). The effectiveness of developing gymnastics learning media with the application of teileren and global (ganze) a method based on lectora digital. *Linguistics and Culture Review*, 6(S3), 248-263. <https://doi.org/10.21744/lingcure.v6nS3.2133>

The Effectiveness of Developing Gymnastics Learning Media with the Application of Teileren and Global (Ganze) a Method Based on Lectora Digital

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Abstract--This research was motivated by the limited media for sports learning Gymnastics material, especially for schools located in the regions. This research aims to produce digital learning media products in the development of teileren and global (Ganze) methods. This research was carried out by using “Research and Development”

The model that is used as a reference in this research is the Borg & Gall development research with 10 developments, in this research, the researchers adopted the Steps as follows: 1) Preliminary Study; 2) Develop planning and analyze the media to be made; 3) product Initial development; 4) Conduct small group trials; 5) Product Revision; 6) Conduct field trials; and 7) Revise the final product. The sample in this research were students of the PO FIK UNP Department who attended basic Gymnastics and learning lectures with a total of ninety people for small group subject trials and one hundred and forty people for field trials. As a result and conclusion of this research, namely the resulting learning media products for practical material with a score of 4 with good criteria and media with a score of 4.33 with a very good category. Meanwhile, for the effectiveness of development media, the result was the teileren method is more effective in improving gymnastic skills than the global method with an average score of $78.73 > 75.14$.

Keywords---ganze, global, gymnastics, lectora digital, teileren.

Introduction

Artistic Gymnastics is part of the educational curriculum at the elementary, junior high school, senior high school, and college levels, especially at the Sports Faculty. In Learning Gymnastics is used to show physical activities that require a wide range of motion (press body) (Margono et al., 2012; Edouard et al., 2018; Pitnawati et al., 2019; Zulbahri & Astuti, 2020). From the aspect of motoric and movement characteristics, Gymnastics can be said to be a suitable physical activity as a physical education tool, because it can contribute to the quality of the motor and physical development (TIM Pengajar UIP, 2012; Hedbávný et al., 2013; Zulbahri & Astuti, 2020; Zulbahri, 2016; Astuti, 2021). Gymnastics is built on basic skills consisting of; 1) Locomotor, namely the movement to move from place to place; 2) Non-locomotor, namely the movement does not move; and 3) Manipulative, namely manipulating certain objects with limbs (Zulbahri & Astuti, 2020; Astuti, 2021).

In learning, Gymnastics is a motoric activity that extra requires care to practice because the high risk of injury is very high. Therefore, many of the students in school moreover students are there in the college are afraid and anxious to do it. This happens because there are still many teachers who do not master the material of artistic Gymnastics so, it is difficult to build a sense of courage and it is difficult to motivate students to do it. Schools in the regions are also having difficulties due to the lack of maximum media that can be used as a learning platform (Astuti et al., 2022). The solution that has been implemented has not been achieved in a more in-depth and concrete manner, even though it has used media such as youtube. Generally, this is not optimal because the Gymnastics media on YouTube does not contain a more complete explanation in the Steps of the artistic Gymnastics movement Step. To face this, in this research a digital media will be created with the application of the Ganze method which contains all aspects of learning artistic Gymnastics based on the Steps of motion in the mobile

Step in more detail with a concrete explanation with the presence of text, audio, photos, graphics, sound, and video (Beaupre & Hess, 2003; Ponzo & Scoppa, 2010). The mechanism of action is to digitize learning outcomes through student lectures on artistic Gymnastics (Mayer et al., 2009; Evans, 2008). The working concept unites text, audio, photos, graphics, sound, and video gradually until it is comprehensive in the movement Step of artistic Gymnastics. This research is very useful for novice lecturers because it is a driving force and makes it easier to develop lectures, especially artistic Gymnastics. With this research, researchers as lecturers can also help students in using learning media, so that the lecture process becomes easier and more interesting (Psacharopoulos, 1994; Sohrabi et al., 2020).

In this research, the digital learning media in the form of messenger tools that combines two or more elements of media and integrated animations that are packaged in a digital format and made a link on YouTube so that, it can be accessed easily, including used an Android make it easier for participants to learn it every time related to the developed program (Zulbahri & Astuti, 2021). To facilitate the mastery of motion in artistic Gymnastics, digital media will be arranged learning steps for artistic Gymnastics which is designed by applying the teileren method, namely understanding in parts or Steps, as well as the Ganze global method, that it's understanding thoroughly¹.

The teileren method is a learning model in a step-by-step manner, where the teaching materials that will be presented to students in college are taught in parts. The Harsono's contention (Malik & Putra, 2015) said that "With the part method, at each Step of training athletes can concentrate in only one aspect of the overall skill". Likewise with Gymnastics learning, where the level of difficulty to learn it was quite high to compared other sports (Pop & Ciomag, 2014; Asseman et al., 2008). According to Singer, the method of parts is "A way of training that is based on the view that an exercise can be given according to its parts, the Steps of training should be simplified and divided" (Malik & Putra, 2015).

According to Kramatmadja in a quote at (www.Koni.or.id) (Malik & Putra, 2015), said that "The part method, provided the Steps of a technique, in other words, it gave training material in part, which is given fully when the Steps have been completed. "The part method is a teaching material that is delivered to students and students collage that is presented in a Step, or from special to general parts (Malik & Putra, 2015; Kasma, 2018). For example, In Gymnastics learning. Every element of the movement is taught in parts. Or in other words, the method of this section in terms of studying a movement not directly as a whole but from each session to the next session will be taught from the simple movements come to easiest movements, to more difficult movements (Vuillerme & Nougier, 2004; Vuillerme et al., 2001). Part practice method was one way that focuses on parts of teaching material. In this section, the pattern of learning motoric skills was a modification of the stimulus-response learning theory or elementaristic behavior. As explained above, the method of this section started from the easiest to the

¹ <https://www.coursehero.com/file/p54r158/13-Tailerren-Method-Teilerren-Method-i.e.-a-method-teaching-with/> (Accessed February 23, 2021, 09.00).

hardest. With this method, it is hoped that students will master the internal elements of skill, eventually become a complete skill (Marpaung & Hambandima, 2018; Kanca et al., 2020). Eva L. Baker also stated that the application of Thorndike's connectionism theory in motoric learning as follows: 1) Divided learning activities must be carried out in happy conditions so the students can participate in learning activities without feeling forced; 2) Students must be ready to receive subject matter both physically and psychologically; 3) The skills taught in the section method must start from the easiest to the most difficult and combined into a complete movement; and 4) This learning pattern should be done through the existing procedure, and it should not be done randomly (Malik & Putra, 2015; Kasma, 2018; KEMENDIKBUD, 2014).

Meanwhile, the overall method was a method that teaches motoric skills in a whole movement, from a teaching material that wants to be delivered (Malik & Putra, 2015; TIM Pengajar UIP, 2012). This is the opposite of the section method. The exercise method is an exercise that refers to learning by looking at the pattern and organization of parts into a whole that was in a problem situation, in addition to observing the stimulus or to seeing the excitement in a series of organized movements, in separate parts. What was learned was only the whole and not in parts (Rinartha et al., 2018). The singer stated that the overall method is "more profitable when the activity is simpler and well-organized" (Malik & Putra, 2015). Meanwhile, according to Bower "the observed pattern of the whole method is always aimed at a simple state, a balanced state, a stable state, and all activities have a purpose" (Malik & Putra, 2015). To see the individual's ability and the relationship between a series of movements that are composed and organized by using the Overall method. In this method the individual got: 1) Overall understanding that suddenly gotten from the relationship of the parts; 2) Subjects can observe and perform each part of the movement; and 3) Subjects were activated in solving the problems encountered (Malik & Putra, 2015). The basic overall concept in studying motoric skills was a modification of the wholistic theory. The main idea of this theory was students organize their responses or perceptions into a pattern or overall form in dealing with a problem that occurs. Lutan explained that the application of Gestalt theory in the motoric learning process is as follows; 1) Movement activities did not do separately, but it carried out totality, therefore students should be aware and understand the overall form of the skills learned; 2) Teacher task or teacher instructor is to maximize the transfer of various activities; 3) For solving the Problems Insight factor is important. For this, mental exercise is very useful for a smooth learning process; and 4) An understanding of the interrelationships is parts of skill is an important matter to perform effective skills.

It can be concluded that overall method is a method used to teach or train the students to achieve a certain skill in the form of a series of movements by teaching as a whole and also the students were asked to practice as a whole as well, for example in teaching swimming to children, coaches or teachers. immediately gave an example of swimming movements as a whole and the child was also told to do it.

In this Step, in making media, students was be fostered, trained, and taught to master the movement Step of artistic Gymnastics by forming a group

collaboration. So that, the artistic Gymnastics lectures can produce results or projects from student activities with their groups. In making this digital learning media for Gymnastics, some movements will be made into the media according to learning these subjects include; rolling front and back with three (3) shapes around, straddle, and corner. Then tiger sprong, handstand, handspring, candle stance, heaven, media, and others (Akmal et al., 2018; Kemal, 2020). An example of the movement was as follows:



Figure 1. Basic movements illustration of artistic Gymnastics

Then for digital media that will be created, in the following illustration form:



Figure 2. Media digital illustration

Methods

This Research on the development of digital-based teileren and global methods was carried out with Research and Development, this method was used to produce certain products, as well as test the effectiveness of these products (Sugiyono, 2011). Research and Development aim to discover new knowledge through “basic research” or to answer specific questions about practical problems through “applied research” which is used to improve educational practices

(Syauqye, 2020). In this research, Research and Development are used to produce digital learning media.

In making digital media, several Steps need to be considered, such as 1) Preview a Step that aims to introduce the skills/teaching materials to be studied (verbals, live demonstrations, displaying images or photos, playing videos or films, and so on). -other); 2) Analyze the Step where students recognize the important parts; and 3) Training sections/units is the Step where students train the Steps each unit. 4) Synthesis is the Step of combining each unit. It means that each unit has been studied and combined so that, it is easier to master the material².

The specific purpose of this research is to design a learning media for Gymnastics that utilizes digital-android technology so that it is expected to be able to answer the problems that have been faced so far. This research was by one of the main research designs of Universitas Negeri Padang related to the development of sports media, modules, and instruments. This research was carried out at Universitas Negeri Padang, from June to November 2021. Subjects of this research were FIK UNP students who took basic and advanced Gymnastics/learning courses with a total of 90 people for small group subject trials and 140 people for field trials. Furthermore, the steps of the learning process using the global method were: 1) The teacher/lecturer introduces pictures, videos, and sentences as a whole; 2) Describing motion in mobile Steps so that it becomes a whole movement unit; 3) Describe the Steps of movement as form Steps in motion; and 4) Next, describe one body movement to form a Step of motion³.

The research steps carried out are based on the 10 development steps developed by Borg and Gall, the researchers adopted into 7 (seven) Steps, as follows: 1) Preliminary Study (research and data collection). Conducting observations, interviews, and field observations; 2) Develop a Plan. Researchers plan and analyze the learning media that will be made; 3) Initial product development. Researchers produce learning media. After the production is complete, validation is carried out by media experts and material experts; 4) Conduct small group trials. The media that has been revised based on a one-on-one trial is then tested in small groups with 15 students participating; 5) Product Revision. Fixed media errors and deficiencies; 6) Conduct field trials. The number of students and students in the operational group trial was 7 groups with a total of 50 people, and 7) Revise the final product. The data from the main field trials are used as reference material in product revision and is the final result in media development (Gall et al., 2007).

Work designed in this research was to design a digital android, then validated by media experts and material experts, then tested in small groups and large groups until the final product revision Step as finalization in media development. For more details, it can be seen in Figure 3 below.

² <https://rahmadahlib9.blogspot.com/2019/11/method-section-teileran-method.html> (Accessed on March 14, 16.00).

³ http://repository.uinsuska.ac.id/8728/1/2013_2013732PGMI.pdf (Accessed on March 14, 2021, at 16.30).

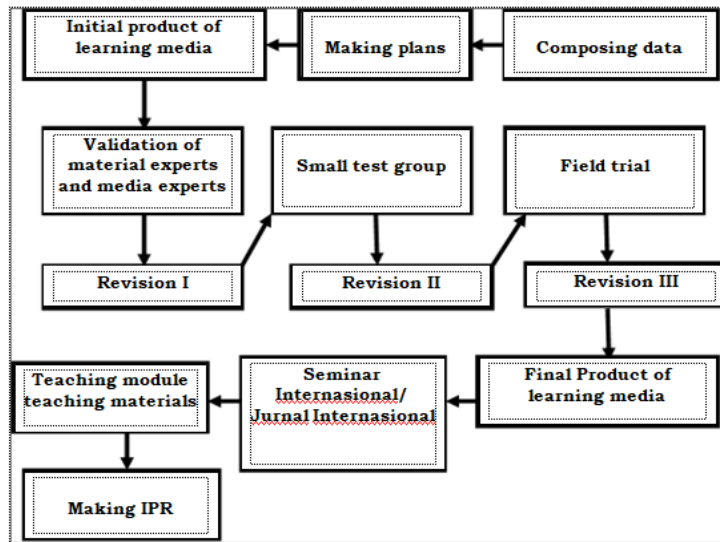


Figure 3. Research flow chart

Then, for the conversion of quantitative data to qualitative data, guidelines are used in the conversion of scores on the five-scale assessment criteria, for more details, we can consider the following Table 1 below.

Table 1
Results of conversion of quantitative to data qualitative

Interval	Criteria
$X >$	Very good
$3,40 < X \leq 4,21$	Good
$2,60 < X \leq 3,40$	Enough good
$1,79 < X \leq 2,60$	Not good
$X \leq$	Very not good

The validators who became material experts and media experts in this development research were the Gymnastics Lecturer in the Department of Sports Education and Education Technology Lecturer at Universitas Negeri Padang. Validation is done by providing learning media product results.

Results and Discussions

Initial product [Results]

The manufacture of learning media products is carried out based on the needs analysis that has been done previously. The design process begins with drafting a concept, collecting the required materials, and integrating it by utilizing a computer program in a form of learning media. Following an initial display of learning media products before being validated by material experts and media experts.



Figure 4. Some forms of motion video series on early media

a) Step I Validation and Revision by Material and Media Expert

The validators who became material experts and media experts in this development research were the Gymnastics Lecturer in the Department of Sports Education and the Education Technology Lecturer. Validation is done by providing a form of learning media. In this validation, researchers and the material experts discuss the quality of the material in the learning media. The evaluation given by the material expert in the form of a description of each item of the basic movements is accompanied by photos of the movement steps to make it more visible, clarify the Steps and smoothness of the movements carried out. Step I evaluation was carried out on June 21, 2021, and the following data were obtained.

Table 2
Score of quality aspects of learning material by material expert material step I

No	Rated aspect	Scoring scale					Criteria
		1	2	3	4	5	
1	Overall movement accuracy		v				Not enough
2	Movement Step accuracy			v			Enough
3	smoothness and beauty of motion		v				Not enough
Total		0	0	6	4	0	
Score total		7					Not good
mean score		2,33					

Then for media validation, it is done by providing a form of learning media. In this validation, researchers and media experts discuss the quality of videos and images in learning media. The evaluation given by media experts in the form of room lighting needs to be considered. Step I evaluation was carried out on June 23, 2021, and the following data were obtained.

Table 3
Score of learning media quality aspects by experts media step I

No	Rated aspect	Scoring scale					Criteria
		1	2	3	4	5	
1	Video lighting and media images		v				Not good
2	Media image and video clarity		v				Not good
3	Video and motion picture recording side		v				Not good
Total		0	4	3	0	0	Not very good
Score total		6					good
mean score		2					

b) Step II Validation and Revision by Material and Media Expert

The validators who became material experts and media experts in this development research were the Gymnastics Lecturer in the Department of Sports Education and Education Technology Lecturer at Universitas Negeri Padang. Validation is done by providing a form of learning media. In this validation, researchers and material experts discuss the quality of the material in the learning media. The evaluation given by the material expert is in the form of smoothing the movement. Step II evaluation was carried out on August 27, 2021, and the following data were obtained.

Table 4
Score aspect quality of learning material by Step II material expert

No	Rated aspect	Scoring scale					Criteria
		1	2	3	4	5	
1	Overall movement accuracy			v			Good enough
2	Movement Step accuracy			v			Good enough
3	smoothness and beauty of motion			v			Good enough
Total		0	0	3	8	0	
Score total		9					Good enough
mean score		3					

For media validation, it is done by providing a form of learning media. In this validation, researchers and media experts discuss the quality of videos and images in learning media. The evaluation given by media experts is in the form of taking motion videos from various sides. Step II evaluation was carried out on August 31, 2021, and the following data were obtained.

Table 5
Learning media quality aspect score by expert media step II

No	Rated aspect	Scoring scale					Criteria
		1	2	3	4	5	
1	Video lighting and media images			v			Good enough
2	Media image and video clarity			vv			
3	Video and motion picture recording side						
Total		0	0	6	4	0	
Score total		9					Good enough
mean score		3					

c) Step III Validation and Revision by Material and Media Experts

In this validation, researchers and the material experts discuss the quality of the material in the learning media. The evaluation given by the material expert in the form of a description of each item of the basic movements is accompanied by photos of the movement steps to make it more visible, clarify the Steps and smoothness of the movements carried out. Step III evaluation was carried out on September 7, 2021, and the following data were obtained.

Table 6
Scores of quality aspects of learning materials by experts step III material

No	Rated aspect	Scoring scale					Criteria
		1	2	3	4	5	
1	Overall movement accuracy				v		Good
2	Movement Step accuracy				v		Good
3	smoothness and beauty of motion				v		Good
Total		0	0	3	8	0	
Score total		12					Good
mean score		4					

Then for media validation, it is done by providing a form of learning media. In this validation, researchers and media experts discuss the quality of videos and images in learning media. The evaluation given by the media experts in form of room lighting needs to be considered. Step III evaluation was carried out on September 19, 2021, and the following data were obtained:

Table 7
Scores of learning media quality aspects by experts step III media

No	Rated aspect	Scoring scale					Criteria
		1	2	3	4	5	
1	Overall movement accuracy				v		Good
2	Movement Step accuracy					v	Very Good
3	smoothness and beauty of motion				v		Good
Total		0	0	6	4	0	
Score total		13					Good

No	Rated aspect	Scoring scale					Criteria
		1	2	3	4	5	
mean score		4,33					

d) Effectiveness of Learning Media Development

The results for the effectiveness of media development are seen from the comparison of the average scores media that is seen from the comparison of the average scores, namely.

Table 8
Score of learning media quality aspects by experts media step III

No	Media Development Method	Average Score
1	Teileren	78,73
2	Global	75,14

Discussions

a) Step I Validation and Revision by Material and Media Experts

The results of the assessment for the material, namely the criteria are not good with the average obtained, namely at a score of 2, 33. The suggestions and revisions made to the input of material experts can be seen in the following Table 9 below.

Table 9
Suggestions for improvement from material experts and revision Step 1

Suggestion	Revision
A description each movement item is included with slowing down the movement by clarifying the Steps of motion, including with an explanation of the motion.	Repeat video creation with per movement item and perform motion slowdown in motion Steps, including explanations.
Additional step-by-step photos. Adding motion photos in motion Steps.	Add motion steps photos. Adding motion photos in motion Steps.

The results of the assessment for the media are in poor criteria with the average obtained, which is a score of 2. The suggestions and revisions made to media expert input can be seen in the following Table 10 below.

Table 10
Suggestions for improvements from media experts and revisions Step I

Suggestion	Revision
Video lighting needs attention.	Recreate video with better lighting.
The clarity or quality of videos and images need to be improved.	Repeat making videos using a camera with better quality.

The results of the improvement in the form of the video series of movements in Step 1 revision are in the following Figure 5 below.

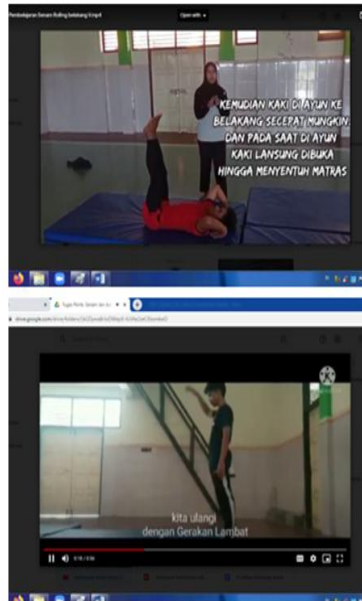


Figure 5. Some forms of motion video series after revision

b) Step II Validation and Revision by Material and Media Experts

The results of the assessment for the material are quite good with the average obtained, namely at a score of 3. The suggestions and revisions made to the input of material experts can be seen in the following Table 11 below.

Table 11
Suggestions for improvement from material experts and revision Step II

Suggestion	Revision
Refine the technique movement properly	Repeat video creation with motion smoothing

The results of the assessment for the material are quite good with the average obtained, which is a score of 3. The suggestions and revisions made to media expert input can be seen in the following Table 12 below.

Table 12
Suggestions for improvements from media experts and revisions Step II

Suggestion	Revision
Take videos from various sides	Added video creation from multiple angles

Result improvement in form of a series of motion videos in Step II revision is in the following Figure 6 below.

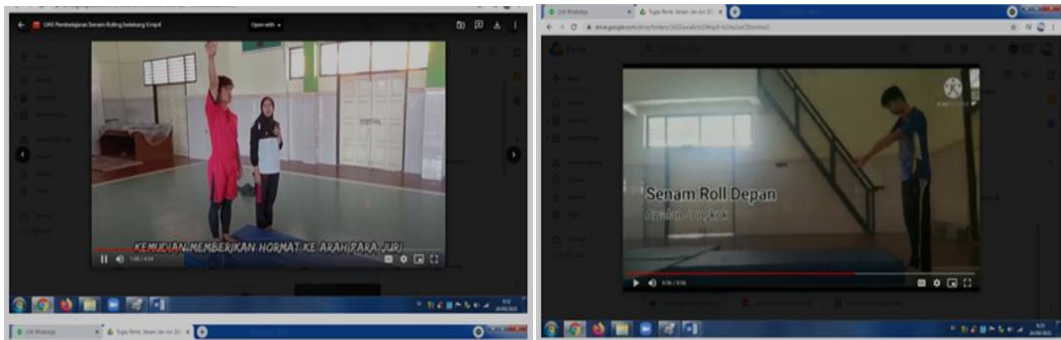


Figure 6. Some forms of motion video series after revision II

c) Step III Validation and Revision by Material and Media Experts

The results of the assessment for the material are on good criteria with the average obtained at a score of 4. Meanwhile, the results of the assessment for the material are on very good criteria with the average obtained at a score of 4. The results of the improvement in the form of the video series of movements in the step III revision are in the following Figure 7 below.

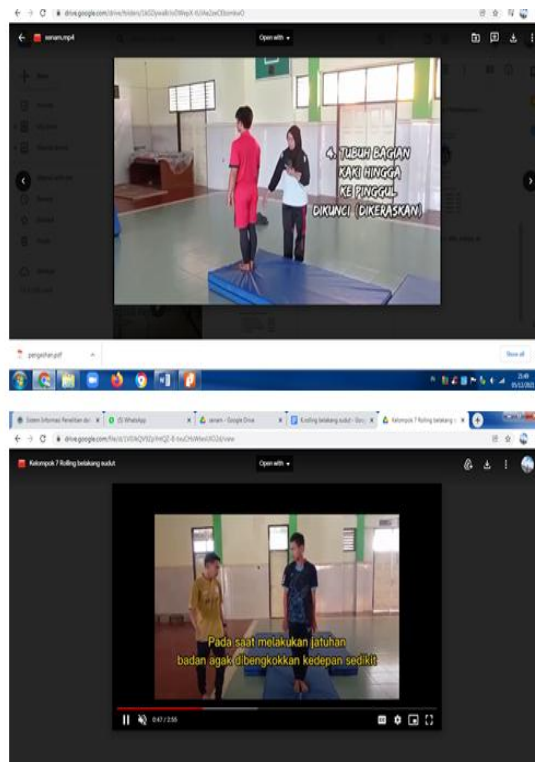


Figure 7. Several forms of motion video series after revision III

d) Effectiveness of Learning Media Development

The effectiveness of the media development carried out, the results obtained that the teileren method was more effective in improving basic gymnastic skills than the global method with a mean score comparison of $78.73 > 75.14$.

Conclusions

Based on the results of development learning media products for Gymnastics, it can be concluded that the steps taken in developing learning media are carried out through several stages, such as; the preliminary stage which consists of analyzing needs, and determining the material, the initial product manufacturing stage, the evaluation stage consisting of validation of material experts and media experts, small group trials and field trials. After carrying out the development stage, learning media products were produced up to stage III revision for practical material with a score of 4 with good criteria and media with a score of 4.33 in the good category. Meanwhile, for the effectiveness of the media development carried out, the results obtained that the teileren method was more effective in improving basic gymnastic skills than the global method with a mean score comparison of 78.73 > 75.14.

Acknowledgments

The authors would like to thank Institute for Research and Community Service (LP2M) Universitas Negeri Padang for funding this work with a contract number: 637/UN35.13/LT/2021.

References

- Akmal, A., Sugihartono, T., & Ilahi, B. R. (2018). Analisis Muatan Materi Senam Pada Bahan Ajar Pjok Sekolah Dasar Negeri Di Kota Bengkulu. *Kinestetik: Jurnal Ilmiah Pendidikan Jasmani*, 2(1), 11-15.
- Asseman, F. B., Caron, O., & Crémieux, J. (2008). Are there specific conditions for which expertise in gymnastics could have an effect on postural control and performance?. *Gait & posture*, 27(1), 76-81. <https://doi.org/10.1016/j.gaitpost.2007.01.004>
- Astuti, Y. (2021, June). Development of Lectora Based PJOK Digital Learning Media on Floor Gunning Materials (Artistic). In *2nd Progress in Social Science, Humanities and Education Research Symposium (PSSHERS 2020)* (pp. 245-249). Atlantis Press.
- Astuti, Y., Zulfahri, Z., Erianti, E., Damrah, D., Pitnawati, P., & Rosmawati, R. (2022). Development of interactive learning media for low and overhead passing techniques in volleyball based on android technology using MIT app inventor. *Linguistics and Culture Review*, 6(S3), 213-220. <https://doi.org/10.21744/lingcure.v6nS3.2132>
- Beaupre, M. G., & Hess, U. (2003). In my mind, we all smile: A case of in-group favoritism. *Journal of Experimental Social Psychology*, 39(4), 371-377. [https://doi.org/10.1016/S0022-1031\(03\)00012-X](https://doi.org/10.1016/S0022-1031(03)00012-X)
- Edouard, P., Steffen, K., Junge, A., Leglise, M., Soligard, T., & Engebretsen, L. (2018). Gymnastics injury incidence during the 2008, 2012 and 2016 Olympic Games: analysis of prospectively collected surveillance data from 963 registered gymnasts during Olympic Games. *British journal of sports medicine*, 52(7), 475-481.
- Evans, C. (2008). The effectiveness of m-learning in the form of podcast revision lectures in higher education. *Computers & education*, 50(2), 491-498. <https://doi.org/10.1016/j.compedu.2007.09.016>

- Gall, M. D., Gall, J. P., & Borg, W. R. (2007). Educational research: an introduction (8. utg.). *AE Burvikovs, Red.) USA: Pearson*.
- Hedbávný, P., Sklenářiková, J., Hupka, D., & Kalichová, M. (2013). Balancing In Handstand On The Floor. *Science of Gymnastics Journal*, 5(3).
- Kanca, I. N., Ginaya, G., & Sri Astuti, N. N. (2020). The effectiveness of the problem solving method on learning outcomes of the English course for room division operation during the COVID-19 pandemic. *International Journal of Linguistics, Literature and Culture*, 7(1), 12-22. <https://doi.org/10.21744/ijllc.v7n1.1102>
- Kasma, O. (2018). Meningkatkan Hasil Belajar Servis Bawah Dalam Permainan Bola Voli Menggunakan Metode Bagian Siswa Kelas V SDN Rawabadak Kecamatan Subang Kabupaten Subang. *JPG: Jurnal Penelitian Guru FKIP Universitas Subang*, 1(02), 67-74.
- Kemal, K. A. (2020). Model Pembelajaran Senam Irama Berbasis Media Pembelajaran Pada Siswa Smp. *Jurnal Pendidikan Jasmani dan Adaptif*, 3(02), 61-68.
- KEMENDIKBUD. (2014). Buku Guru Pendidikan Jasmani, Olahraga, dan Kesehatan. Jakarta: Kementrian Pendidikan dan Kebudayaan.
- Malik, A., & Putra, S. (2015). Perbedaan Hasil Belajar Renang Gaya Bebas antara Metode Bagian dengan Metode Keseluruhan pada Mahasiswa Penjaskesrek Fkip Unsyiah Angkatan 2010. *Jurnal Ilmiah Mahasiswa Pendidikan Jasmani, Kesehatan dan Rekreasi*, 1(1).
- Margono, A., Mukholid, A; Purnama, S.K., & Satyawan, B. (2012). Modul PLPG “Pendalaman Materi PENJAS”. Surakarta.
- Marpaung, T., & Hambandima, E. S. N. (2018). Collaborative experiential learning: Five senses exploration to higher descriptive writing quality. *International Journal of Linguistics, Literature and Culture*, 4(5), 55-67. <https://doi.org/10.21744/ijllc.v4n5.292>
- Mayer, R. E., Stull, A., DeLeeuw, K., Almeroth, K., Bimber, B., Chun, D., ... & Zhang, H. (2009). Clickers in college classrooms: Fostering learning with questioning methods in large lecture classes. *Contemporary educational psychology*, 34(1), 51-57. <https://doi.org/10.1016/j.cedpsych.2008.04.002>
- Pitnawati, P., Damrah, D., & Zulfahri, Z. (2019). Analysis of Motivation to Learn and Motion Gymnastics Sequentially Dexterity Primary School Students. *International Journal of Research and Innovation in Social Science (IJRISS)*, 3(8), 233-236.
- Ponzo, M., & Scoppa, V. (2010). The use of informal networks in Italy: Efficiency or favoritism?. *The Journal of Socio-Economics*, 39(1), 89-99. <https://doi.org/10.1016/j.socec.2009.07.007>
- Pop, C., & Ciomag, V. (2014). The Influence of Aerobic Gymnastics on the Students' Body Image. *Procedia-Social and Behavioral Sciences*, 117, 129-135. <https://doi.org/10.1016/j.sbspro.2014.02.190>
- Psacharopoulos, G. (1994). Returns to investment in education: A global update. *World development*, 22(9), 1325-1343. [https://doi.org/10.1016/0305-750X\(94\)90007-8](https://doi.org/10.1016/0305-750X(94)90007-8)
- Rinartha, K., Suryasa, W., & Kartika, L. G. S. (2018). Comparative Analysis of String Similarity on Dynamic Query Suggestions. In *2018 Electrical Power, Electronics, Communications, Controls and Informatics Seminar (EECCIS)* (pp. 399-404). IEEE.

- Sohrabi, C., Alsafi, Z., O'Neill, N., Khan, M., Kerwan, A., Al-Jabir, A., ... & Agha, R. (2020). World Health Organization declares global emergency: A review of the 2019 novel coronavirus (COVID-19). *International journal of surgery*, 76, 71-76. <https://doi.org/10.1016/j.ijssu.2020.02.034>
- Sugiyono. (2011). *Metode Penelitian Kuantitatif, kualitatif dan R&D*. Bandung: Alfabeta.
- Syauqye, A. (2020). Pengembangan Model Pembelajaran Senam Lantai Berbasis Pendekatan Saintifik Pada Siswa Sekolah Menengah Pertama:(The Development of Gymnastics Learning Model Based on a Scientific Approach to Junior High School Students). *Indonesian Journal of Sport Science and Coaching*, 2(2), 82-89.
- Tim Pengajar, U. P. I. (2012). Modul 2 "Pendekatan Mengajar Senam dan Hakikat Bantuan". *File UPI. Bandung*.
- Vuillerme, N., & Nougier, V. (2004). Attentional demand for regulating postural sway: the effect of expertise in gymnastics. *Brain Research Bulletin*, 63(2), 161-165. <https://doi.org/10.1016/j.brainresbull.2004.02.006>
- Vuillerme, N., Teasdale, N., & Nougier, V. (2001). The effect of expertise in gymnastics on proprioceptive sensory integration in human subjects. *Neuroscience letters*, 311(2), 73-76. [https://doi.org/10.1016/S0304-3940\(01\)02147-4](https://doi.org/10.1016/S0304-3940(01)02147-4)
- Zulbahri, Z. (2016). Pengaruh Pendekatan Bantuan Langsung Terhadap Keterampilan Handstand. *Edu Research*, 5(2), 105-112.
- Zulbahri, Z., & Astuti, Y. (2020). Pengembangan Media Belajar Pjok Pada Materi Senam Lantai (Artistik). *Jurnal Ilmu Keolahragaan Undiksha*, 8(2), 86-91.
- Zulbahri, Z., & Astuti, Y. (2021). Pendampingan Nagari Dalam Pencegahan Penularan Corona Virusdisease (COVID-19) Dengan Program "KSNH"(Knowledge, Sports, Nutrition And Health) Berbasis Digital Di Kenagarian Singkarak Kecamatan X Koto Singkarak, Kabupaten Solok. *Widya Laksana*, 10(1), 77-85.