

How to Cite:

Rosmawati, R., Zarwan, Z., Astuti, Y., Sari, D. N., Zulbahri, Z., & Erianti, E. (2022). E-module design of sport modification and cybergogy-based small games. *Linguistics and Culture Review*, 6(S3), 264-274. <https://doi.org/10.21744/lingcure.v6nS3.2143>

E-module Design of Sport Modification and Cybergogy-based Small Games

Rosmawati

Universitas Negeri Padang (UNP), Indonesia

Zarwan

Universitas Negeri Padang (UNP), Indonesia

Yuni Astuti

Universitas Negeri Padang (UNP), Indonesia

Dessi Novita Sari

Universitas Negeri Padang (UNP), Indonesia

Zulbahri

Universitas Negeri Padang (UNP), Indonesia

Erianti

Universitas Negeri Padang (UNP), Indonesia

Abstract---The low learning outcomes of students in the subject of modification of sports and small games are considered as the problem in this research that is mostly caused by the lack of learning media facilities for students in the online classes that leads them to difficulty in understanding the provided learning materials. This study aims to develop an e-module on the subject of modification of sports and small games. The ADDIE development model is being used in this Research and Development (R&D). There are several activities needed as the research method, such as exploring the potential and actual problems, collecting all information by developing, validating, revising, conducting trials and errors of the game models for the effectiveness and efficiency of the model used. The results of the study showed from the experts of materials that at the development stage and the level of validity by the score of 3.60 which was in the highly valid by the percentage of 90.5%. From the media experts validation by the score of 3.65 which was high valid category by the percentage of 92, 55%.

Keywords---cybergogy, digitalization, e-module, games, modification.

Introduction

The increasing use of communication and information technology in all aspects of life, including in the education field is considering the movement of the 21st-century world (Siddiq et al., 2020). Thus, the Internet is being optimally used in learning activities as the benefit of technology. The massive use of communication and information technology in the industrial revolution era by Generation Z can be applied as the teaching-learning approach which is known as the Cybergogy. It can be concluded that the demands of this era are taken as a challenge for the teaching-learning process to be applied from basic to the highest education program and Cybergogy-based learning is the solution. However, moving from the conventional method to the modern one is hardly chosen by many lecturers nowadays. Based on research, one of the factors that keep the lecturers in the old ways is the lack of facilities in teaching-learning (Pramana et al., 2020). In the COVID-19 pandemic where the online class is the only choice, the implementation of Cybergogy-based learning, especially at the Faculty of Sports Science can be advantageous for the lecturers and students in practical courses with blended learning. One of the courses is the modification of sports and small games which is mostly aimed as a general warm-up before doing sports activities in particular.

The course modification of sports and small games is a compulsory subject of three (3) credits with learning outcomes that students can modify a sport or more in the form of games, and to practice on a large or small scale. The modification is needed in learning to adjust the immaturity of the students physically and emotionally. When it is compared to adults, the students frequently find difficulty in using adult tools and rules which generate less motivated learning. The modification of tools and regulations allows students to develop their strengths and participation in encouraging them to work together and feel happier. In sports modification, four elements must be considered by the teacher, namely: 1) modification of the size of the field; 2) equipment modification; 3) modification of the length of the game; and 4) modification of the rules of the game. Changing the size of the field and playing time aim to reduce the physical demands of students. Modification of equipment includes bats, rackets, and sticks that are made in small sizes will allow students to use them easier. Likewise, the size and composition of the ball are modified to make students more comfortable while using it, for example, Aussie Sports designs children-friendly use volleyball made from the best materials. It can be said that teachers' creativity is needed in designing tools for learning (Muresan, 2014; Muresan, 2013; Hadlow et al., 2018).

Furthermore, the effectiveness of sports modification in learning can be concluded as follows: 1) Increasing the motivation and enjoyment of students in physical education learning at school; 2) Improving student learning activities; 3) Improving physical education learning outcomes of students; and 4) Aiding in the lack of facilities and infrastructure related to throwing and catching the ball, the development of strength and physical fitness components. By the analytical experience, the physical education teachers can improve the physical education learning materials for practical subjects that provide the class with more ideas in teaching-learning processes (Sorgor, 1989; Balakrishnan & Griffiths, 2018).

E-modules are teaching materials packaged digitally to facilitate teachers and students in learning that are systematically arranged so that students can learn independently and solve existing problems (Asrial et al., 2020; Citrawathi et al., 2016; Diantari et al., 2018; Udayana et al., 2017). In addition, by research, it is known that e-modules can improve student learning outcomes by supporting the learning processes (Wirawan et al., 2017). Also, Aryawan (2018), states that interactive electronic modules can be used to significantly improve student learning outcomes. It can be said that e-modules have the main role for online teaching-learning processes with some benefits;) interactively used by students in digital platforms; 2) supporting learning materials with video audio, animation, pictures, texts, and tests as direct feedback (Sugihartini & Jayanta, 2017). Also, the e-module can be used as one of the best alternatives to improve the understanding and the learning outcomes of the students (Hastari et al., 2019). In conclusion, the e-module of Cybergogy-based sports and small game modification courses can be the best alternative method for students, especially in online classes.

The Cybergogy is a learning strategy that involves students learning digitally/online connected to the network that makes it easier for teachers and students to keep the situation more relevant and interesting without being limited by such as curriculum, schedule, and classrooms (Yusron, 2018). The Cybergogy approach is applied independently of time and location by adapting students' needs about their access to the internet where access to complete and heterogeneous material can be achieved (Ocaña-Fernández et al., 2020). Furthermore, Sumarsono (2020), states that the Cybergogy also facilitates learning through the communities where students actively express opinions and find solutions. The Cybergogy learning strategy model can be used for the advancement of cognitive, emotive, and social factors as mentioned by Mishra & Koehler (2006), such as task vision, assessment, learning model, learning context, grouping, teacher role, and student role as indicators of engaged learning. Also, it recognizes as an innovative learning strategy model for learning by using ICT as in the following example:

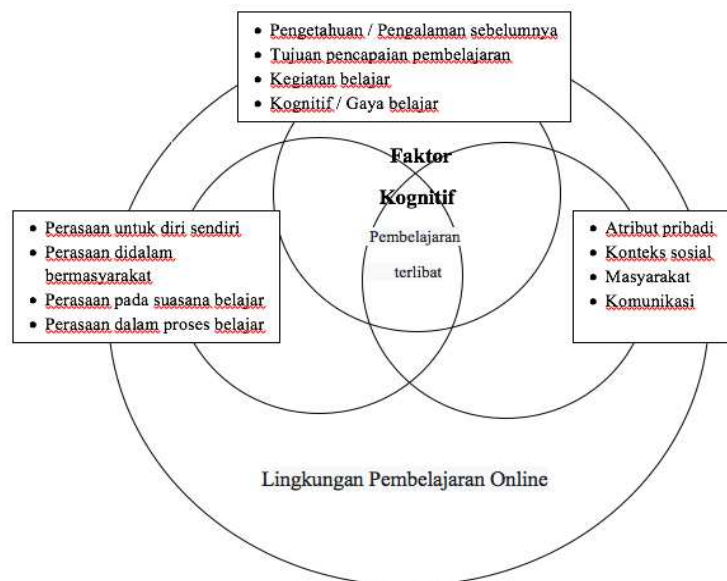


Figure 1. The cybergogy used in online learning (in Indonesia) (Mishra & Koehler, 2006)

Figure 1 shows several engagement forms of online learning strategies, indicators, and ways to assess the learning. The Cybergogy learning strategies engage students to be more active in cognitive, emotive, and social domains. For example, it can be used in exploring the students' emotional cues, fostering positive feelings, increasing students' self-confidence, and arousing their curiosity through the design of special, building a supportive learning environment (Wang & Kang, 2006).

Method

The Research and Development (R & D) is the research method that starts with an activity to be observed and developed to finally bring life innovation. This research activity is obtaining information about the needs of users and developing activities to produce learning products. The flow chart in this development research can be seen as follow: 1) Understanding the object of research by conducting preliminary research by interviews and questionnaires to identify problems, learning sources, and motivation of the students; 2) Developing a model by observing the learning process (preparation, implementation, and evaluation) as well as the participation of the students. At this stage, the developed model will be discussed with professional experts to provide direct feedback from the basic ideas to complex implementation; and 3) Testing the model by using questionnaires and test equipment to check the effectiveness and to evaluate the learning process and results. At this stage, revisions, changes, and subtractions are taken as well as additional items if needed depending on the trial and errors stages (Baranov et al., 2021; Peter, 2015; Rivas et al., 2021).

Results and Discussions

The results of Research & Development in the form of e-modules for modification of sports and small games using Cybergogyis improving the learning strategies for students. The feasibility assessment of the module will be developed on practical material with a focus on validity and practicality which is carried out by media experts and material and practicality tested to the students (Boendermaker et al., 2015; Hendriarto, 2021; Widana et al., 2020). In this research, the ADDIE development model consists of the stages of Analysis, Design, and development which is easy to apply with structured steps and evaluation sessions.

- Need Analysis Stage: At the needs analysis stage, the discussion with the teaching team and students related to the material for sports modification courses and Cybergogy-based small games was the first step to observe the design of e-module based on the needs in teaching-learning. Thus, it was found that the modifications would be regarding; 1) big ball games such as volleyball, football, basketball; 2) small balls games such as rounders, badminton, softball, table tennis; 3) athletic sports; 4) rhythmic gymnastics; 5) floor exercises; 6) games for physical fitness; 7) games for self-defense; and 8) activities in the water.
- Designing Stage: At this design stage, the researchers facilitated all of the results of the needs analysis observation to provide solutions to the problems by the Cybergogy-based e-module using the Kvisoft Flipbook Maker application as the framework before developing the product. This stage aims to produce the finest teaching materials which relate to the needs of teachers and students to finally achieve the learning outcomes. The components of the e-module are the book cover, the preface, the table of contents, the instructions for using the e-module, the introduction, the learning materials (theories and game models), and the formative tests of each material designed, and designed game models video. The following is a storyboard for the modified sport and small game based on Cybergogy learning.
- The e-module book cover is designed to attract readers which consist of module title, author identity, picture, and institutional identity.

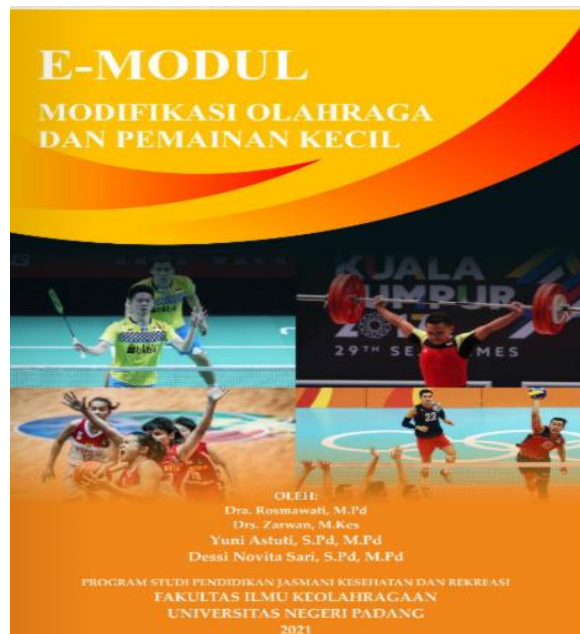


Figure 2. E-Module book cover (in Indonesia)

- The preface is a leading introduction sentence to the table of contents.



Figure 3. The preface (in Indonesia)

- The Table of Contents as readers' guidance for the e-module.

DAFTAR ISI	
KATA PENGANTAR.....	i
DAFTAR ISI.....	ii
Modul 1. PENDAHULUAN.....	1
MODUL 2. MODEL-MODEL PERMAINAN KECIL.....	6
Tes Formatif.....	25
MODUL 3. MODIFIKASI OLAHRAGA DAN PERMAINAN BOLABESAR.....	26
Permainan Cabang Olahraga Bola Basket.....	27
Permainan Cabang Olahraga Bola Kaki.....	33
Permainan Cabang Olahraga Bola voli.....	35
Tes Formatif.....	38
MODUL 4. MODIFIKASI OLAHRAGA DAN PERMAINAN BOLA KECIL.....	39
Permainan untuk Rounders.....	40
Permainan Cabang Olahraga Bulutangkis.....	42
Permainan Cabang Olahraga Soft Ball.....	46
Permainan Cabang Olahraga Tenis Meja.....	48
Tes Formatif.....	49
MODUL 5. MODIFIKASI OLAHRAGA ATLETIK.....	50
Permainan Lari Estafet.....	50
Permainan Lompat.....	54
Permainan Tolak Peluru.....	56
Permainan Lempar Lembing.....	58
Permainan Lari Rintang.....	60
Tes Formatif.....	61
MODUL 6. MODIFIKASI OLAHRAGA SENAM RITMIK.....	62
Permainan Senam Ritmik dengan Alat.....	63
Permainan Senam Ritmik Tanpa Alat.....	69
Tes Formatif.....	72
MODUL 7. MODIFIKASI OLAHRAGA SENAM LANTAI.....	73
Permainan untuk Handstand.....	74
Permainan untuk Meroda.....	76
Permainan untuk Rolling Depan.....	78
Permainan untuk Sikap Lilit.....	80
Permainan untuk Split.....	82
Tes Formatif.....	83
MODUL 8. MODIFIKASI PERMAINAN UNTUK KEBUGARA JASMANI.....	84
Permainan untuk Harvard Step Test.....	85
Permainan untuk Keseimbangan.....	87
Permainan untuk Kelincahan.....	89
Permainan untuk Kecepatan.....	91
Permainan untuk Kekuatan.....	93

Figure 4. The table of contents (in Indonesia)

- Cybergogy-based learning materials for sports and small games modification courses consist of the title and the description of the material.

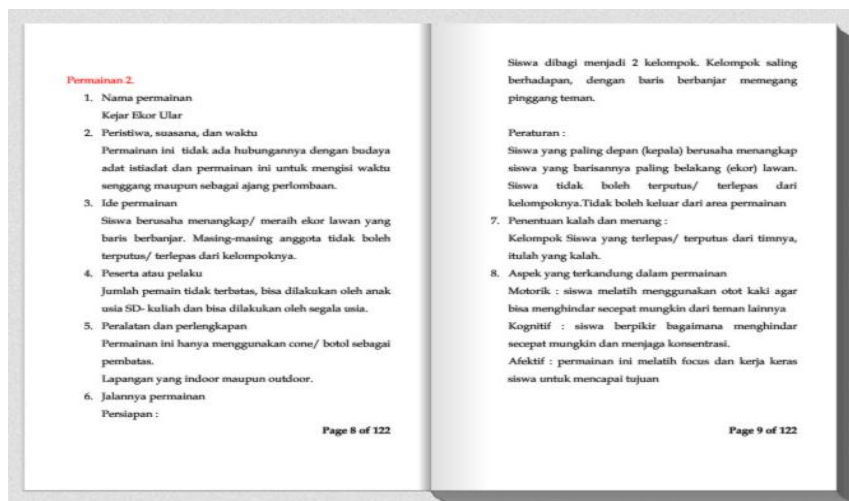


Figure 5. Learning materials (in Indonesia)

- The video of modified game types for sports and small games is based on the material listed in the needs analysis stages.

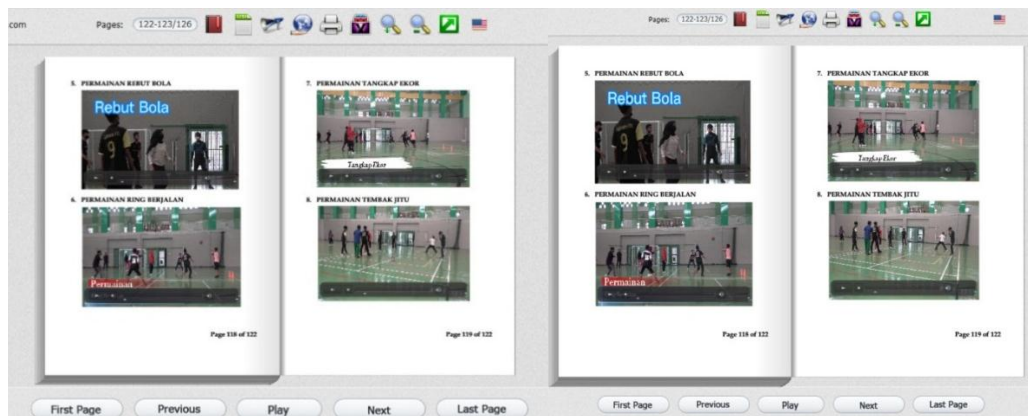


Figure 6. Games model video (in Indonesian)

- The references as the source of information used by the researchers to develop the e-modules



Figure 7. References (in Indonesian)

- Development Stage: At this development stage, the researcher started to design the e-module based on Cybergogy using the kvisoft flipbook maker application. Then, it would be legalized to assess and measure the validity and practicality of the designed product. Validation was carried out by material experts with two lecturers of the subject with the finding of the average score of 3.60 with the valid category for field testing (Mäkiö-Marusik et al., 2019; Reinhold et al., 2021). The last, the validation by media experts with 2 experts in the field of technology found the average score of 3.70 with the high valid category for field testing.

- Implementation: After the product validity, the e-module for modification of sports and small games based on Cybergogy is now ready to be tested to the students with the courses to find out responses by providing a questionnaire in the form of statements. As the result, it was found the average score of the e-module is 3.60 with the criteria or interpretation as "very interesting". It can be understood that this modification sports and small games e-module are very interesting for online classes (Zu, 2021; Hulla et al., 2019; Forma & Matyjas, 2015).
- Evaluation: At this evaluation stage, assessment and evaluation are the final stages to check the testing result of modified sports and small game e-modules by detailing the effectiveness of the availability of these modules.

Conclusion

Based on the results of the Cybergogy-based sports and small game modification e-module development using the Kvisoft Flipbook Maker application with the ADDIE model has reached the development stage. The level of validity of the e-module was obtained from; a) the material experts by the score of 3.60 which is in the high valid category with a percentage of 90.5%, b) the media experts by the score of 3.65 which is in the high valid category with a percentage of 92.55%. Meanwhile, the responses from students who were tested by the product obtained a score of 3.85 which is a highly attractive category with a percentage of 94.85%. It can be concluded that students are very motivated to take online lectures and to study independently with this Cybergogy-based e-module.

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: 798/UN35.13/LT/2021.

References

- Aryawan, R., Sudatha, I. G. W., & Sukmana, A. I. W. I. Y. (2018). Pengembangan E-Modul Interaktif Mata Pelajaran IPS Di SMP Negeri 1 Singaraja. *Jurnal Edutech Undiksha*, 6(2), 180-191.
- Asrial, A., Syahrial, S., Maison, M., Kurniawan, D. A., & Piyana, S. O. (2020). Ethnoconstructivism E-Module to Improve Perception, Interest, And Motivation of Students in Class V Elementary School. *JPI (Jurnal Pendidikan Indonesia)*, 9(1), 30-41.
- Balakrishnan, J., & Griffiths, M. D. (2018). Loyalty towards online games, gaming addiction, and purchase intention towards online mobile in-game features. *Computers in Human Behavior*, 87, 238-246. <https://doi.org/10.1016/j.chb.2018.06.002>
- Baranov, P. P., Mamychyev, A. Y., Dremluga, R. I., & Miroshnichenko, O. I. (2021). Legal consciousness and legal culture in the era of total digitalization: Theoretical-methodological and legal-technical problems. *Linguistics and Culture Review*, 5(S3), 899-910. <https://doi.org/10.21744/lingcure.v5nS3.1665>

- Boendermaker, W. J., Prins, P. J., & Wiers, R. W. (2015). Cognitive Bias Modification for adolescents with substance use problems—Can serious games help?. *Journal of behavior therapy and experimental psychiatry*, 49, 13-20. <https://doi.org/10.1016/j.jbtep.2015.03.008>
- Citrawathi, D. M., Adnyana, P. B., & Santiasa, M. P. A. (2016). Analisis Kebutuhan untuk Pengembangan Modul Inkuiri Berbasis Pertanyaan (Mibp) di SMP. *JPI (Jurnal Pendidikan Indonesia)*, 5(1), 1-11.
- Diantari, L. P. E., Damayanthi, L. P. E., Sugihartini, N. S., & Wirawan, I. M. A. (2018). Pengembangan e-modul berbasis mastery learning untuk mata pelajaran KKPI kelas XI. *Jurnal Nasional Pendidikan Teknik Informatika: JANAPATI*, 7(1), 33-47.
- Forma, P., & Matyjas, B. (2015). Digitalization of upbringing and education in relation to shifted socialisation of Polish students. *Procedia-Social and Behavioral Sciences*, 176, 985-991. <https://doi.org/10.1016/j.sbspro.2015.01.568>
- Hadlow, S. M., Panchuk, D., Mann, D. L., Portus, M. R., & Abernethy, B. (2018). Modified perceptual training in sport: a new classification framework. *Journal of Science and Medicine in Sport*, 21(9), 950-958. <https://doi.org/10.1016/j.jsams.2018.01.011>
- Hastari, G. A. W., Agung, A. G., & Sudarma, I. K. (2019). Pengembangan Modul Elektronik Berpendekatan Kontekstual Pada Mata Pelajaran Ilmu Pengetahuan Sosial Kelas Viii Sekolah Menengah Pertama. *Jurnal Edutech Undiksha*, 7(1), 33-43.
- Hendriarto, P. (2021). Understanding of the role of digitalization to business model and innovation: economics and business review studies. *Linguistics and Culture Review*, 5(S1), 160-173. <https://doi.org/10.21744/lingcure.v5nS1.1347>
- Hulla, M., Hammer, M., Karre, H., & Ramsauer, C. (2019). A case study based digitalization training for learning factories. *Procedia manufacturing*, 31, 169-174. <https://doi.org/10.1016/j.promfg.2019.03.027>
- Mäkiö-Marusik, E., Colombo, A. W., Mäkiö, J., & Pechmann, A. (2019). Concept and case study for teaching and learning industrial digitalization. *Procedia Manufacturing*, 31, 97-102. <https://doi.org/10.1016/j.promfg.2019.03.016>
- Mishra, P., & Koehler, M. J. (2006). Technological pedagogical content knowledge: A framework for teacher knowledge. *Teachers college record*, 108(6), 1017-1054.
- Muresan, M. (2013). A blended learning system within the cybergogy paradigm. *Procedia-Social and Behavioral Sciences*, 89, 193-198. <https://doi.org/10.1016/j.sbspro.2013.08.833>
- Muresan, M. (2014). Using cybergogy and andragogy paradigms in lifelong learning. *Procedia-Social and Behavioral Sciences*, 116, 4722-4726. <https://doi.org/10.1016/j.sbspro.2014.01.1015>
- Ocaña-Fernández, Y., Fernández, L. A. V., Chiparra, W. E. M., Gallarday-Morales, S., & Gallarday-Morales, S. (2020). Digital skills and digital literacy: New trends in vocational training. *International Journal of Early Childhood Special Education (INT-JECSE)*, 12(1), 370-377.
- Peter, V. F. (2015). Relationship among culture, education and sports. *International Research Journal of Management, IT and Social Sciences*, 2(11), 38-42. Retrieved from <https://sloap.org/journals/index.php/irjmis/article/view/326>

- Pramana, M. W. A., Jampel, I. N., & Pudjawan, K. (2020). Meningkatkan hasil belajar biologi melalui e-modul berbasis problem based learning. *Jurnal Edutech Undiksha*, 8(2), 17-32.
- Reinhold, F., Schons, C., Scheuerer, S., Gritzmam, P., Richter-Gebert, J., & Reiss, K. (2021). Students' coping with the self-regulatory demand of crisis-driven digitalization in university mathematics instruction: do motivational and emotional orientations make a difference?. *Computers in Human Behavior*, 120, 106732. <https://doi.org/10.1016/j.chb.2021.106732>
- Rivas, F. E. C., Pilligua, M. L. B., Guerrero, J. A. A., Moreira, J. A. M., & Zambrano, M. J. Z. (2021). Processes aimed at students to improve their learning. *International Research Journal of Management, IT and Social Sciences*, 8(6), 712-719. <https://doi.org/10.21744/irjmis.v8n6.1972>
- Siddiq, Y. I., Sudarma, I. K., & Simamora, A. H. (2020). Pengembangan Animasi Dua Dimensi Pada Pembelajaran Tematik Untuk Siswa Kelas III Sekolah Dasar. *Jurnal Edutech Undiksha*, 8(2), 49-63.
- Sorger, G. (1989). Competitive dynamic advertising: A modification of the Case game. *Journal of Economic Dynamics and Control*, 13(1), 55-80. [https://doi.org/10.1016/0165-1889\(89\)90011-0](https://doi.org/10.1016/0165-1889(89)90011-0)
- Sugihartini, N., & Jayanta, N. L. (2017). Pengembangan e-modul mata kuliah strategi pembelajaran. *Jurnal Pendidikan Teknologi dan Kejuruan*, 14(2).
- Sumarsono, S. (2020). The paradigms of heutagogy and cybergogy in the transdisciplinary perspective. *Jurnal Pendidikan dan Pengajaran*, 52(3), 172-182.
- Udayana, N. N. A., Wirawan, I. M. A., & Divayana, D. G. H. (2017). Pengembangan E-Modul Pada Mata Pelajaran Pemrograman Berorientasi Objek Dengan Model Pembelajaran Project Based Learning Kelas XII Rekayasa Perangkat Lunak Di SMK Negeri 2 Tabanan. *Jurnal Nasional Pendidikan Teknik Informatika: JANAPATI*, 6(2), 128-139.
- Wang, M., & Kang, M. (2006). Cybergogy for engaged learning: A framework for creating learner engagement through information and communication technology. In *Engaged learning with emerging technologies* (pp. 225-253). Springer, Dordrecht.
- Widana, I.K., Dewi, G.A.O.C., Suryasa, W. (2020). Ergonomics approach to improve student concentration on learning process of professional ethics. *Journal of Advanced Research in Dynamical and Control Systems*, 12(7), 429-445.
- Wirawan, I. K. Y. A. P., Sudarma, I. K., & Mahadewi, L. P. P. (2017). Pengembangan e-modul berbasis Problem Based Learning untuk mata pelajaran IPA siswa kelas VII semester ganjil. *Teknologi Pendidikan*, 8(2).
- Yusron, I. R. (2018). *Heutagogy, Pedagogy dan Cybergogy*. Forum Guru.
- Zu, Z. (2021). The right contextual information determining the success of communication on translation. *Applied Translation*, 15(1), 39-43. Retrieved from <https://appliedtranslation.nyc/index.php/journal/article/view/1423>