ENHANCING THE SKILLS OF PHYSICS MGMP TEACHERS IN MAKING DIFFERENTIATED E-MODULES

Evelina Astra Patriot[1]*, Ketang Wiyono[1], Ida Sriyanti[1], Ismet[1], Nauratun Nazhifah[1], Allika Fitonia[1], Hartisya Nadia[1], Yeni Utami[1], M. Rokhati Harianja[1], Sartina Fadhilah[1], Diana Meitasari[1], Nita Arrum Sari[1]
[1]Universitas Sriwijaya, Palembang, Indonesia
*evelinaastrapatriot@fkip.unsri.ac.id

Abstrak: Kesulitan guru dalam membuat e-modul berdiferensiasi menjadi urgensi yang melatarbelakangi kegiatan pengabdian ini perlu untuk dilksanakan. Hal ini dikarenakan guru-guru MGMP Fisika Kabupaten Musi Banyuasin tersebut tidak memiliki pengetahuan dan keterampilan untuk mengembangkan e-modul berdiferensiasi. Minimnya pengetahuan disebabkan kurikulum baru di realese tahun 2020. Oleh karena itu, tujuan pengabdian ini adalah untuk meningkatkan kapasitas guru dalam merancang hingga menghasilkan produk berupa modul berdiferensiasi. Adapun inovasi teknologi yang dilatihkan dalam pengabdian ini adalah mewujudkan produk dalam bentuk elektronik sehingga menjadi e-modul berdiferensiasi. *Participatory Action Research* (PAR) menjadi metode yang digunakan dalam pelaksanaan kegiatan pengabdian dengan tahapan (a) persiapan, (b) pelaksanaan, dan (c) evaluasi dan refleksi. Sasaran peserta kegiatan pengabdian adalah 20 orang guru mata pelajaran fisika di Kabupaten Musi Banyuasin. Berdasarkan hasil data yang didapatkan adalah terdapat peningkatan hasil tes dengan N-gain sebesar 0,82 yang termasuk dalam kategori tinggi. Sedangkan data hasil evaluasi kegiatan PKM menunjukkan tingkat kepuasan peserta sebesar 82% dengan kategori sangat memuaskan. Secara umum dapat disimpulkan bahwa sebanyak 80% peserta pelatihan dapat membuat dan menghasilkan produk e-modul berdiferensiasi. Melalui hasil angket, didapatkan bahwa 86% peserta pelatihan sangat setuju bahwa kegiatan pengabdian ini dapat memberikan manfaat dalam meningkatkan keterampilan membuat e-modul berdiferensiasi pada mata pelajaran fisika.

Kata Kunci: e-modul, media pembelajaran, pembelajaran berdiferensiasi

Abstract: Teachers need help to make differentiated e-modules, which is the urgency behind this service activity that needs to be carried out. This is because the MGMP Physics teachers of Musi Banyuasin Regency must gain the knowledge and skills to develop differentiated e-modules. The lack of knowledge is due to the new curriculum in 2020. Therefore, this community service program aims to increase teachers' capacity to design products through differentiated modules. The technological innovation trained in this service is to realize the development in electronic format so that it becomes a differentiated e-module. Participatory Action Research (PAR) is the method used in the implementation of service activities with stages (a) preparation, (b) implementation, and (c) evaluation and reflection. The target participants of the service activities were 20 physics subject teachers in Musi Banyuasin Regency. Based on the data obtained, there is an increase in test results with an N-gain of 0.82, which is included in the high category. Meanwhile, the data from the evaluation of PKM activities showed a participant satisfaction level of 82% with a very satisfying category. Generally, as many as 80% of training participants can create and produce differentiated e-module products. Based on the questionnaire results, it was found that 86% of the training participants strongly agreed that this service activity could provide benefits in improving their skills in making differentiated e-modules in physics subjects.

Keywords: differentiated learning, e-modules, learning media

Introduction

Science and technology are developing very rapidly in the era of the Industrial Revolution 4.0 (Hanh et al., 2021). This era will fundamentally change human activities in various fields, such as social, economic, political, and education (Rohida, 2018). Quality education is one of

the points in the 17 Sustainable Development Goals (SDGs) (Kioupi & Voulvoulis, 2019). Improving the quality of education in the SDGs aims to explore the potential and empower people with the knowledge, skills, and values needed to live in the era of the Industrial Revolution 4.0 (Laurie et al., 2016). Governments and schools are responsible for developing new things in the world of education by the demands of the times. The curriculum must contain things that can help students develop every potential so that they can play an active role in the dynamic social life of society (Arlinwibowo et al., 2021; Suprapto et al., 2021).

Governments and schools are responsible for developing new things in the world of education by the demands of the times. The curriculum must contain things that can help students develop every potential so that they can play an active role in the dynamic social life of society (Valiandes, 2015). Differentiated learning puts the differences in learning activities based on the characteristics of the class and learners based on the scope of the material, the variety of teacher-student activities, and the method of assessing student learning outcomes. (Herwina, 2021). Learning is carried out with the principle of differentiation, which seeks to accommodate diverse learners in their learning needs, talents, and interests. (Marlina et al., 2019).

Based on the results of previous research, there is a lack of available learning media that can help develop the potential of each student (Cholifah, 2018). This urgent problem must be overcome to implement differentiated learning maximally and optimally. As facilitators in the learning process, teachers must also provide learning media to provide learning activities based on the characteristics of students' learning styles. Teachers are the frontline in implementing education in schools, so it is necessary to give training on an ongoing basis (Slameto, 2017).

Teachers must also improve their skills by actively participating in various coaching activities, training, meetings, or teacher forums. This shows the commitment of teachers to improve their professionalism, which will affect the learning quality provided (Afandi, 2014). However, this change in curriculum policy tends to confuse teachers and schools, especially teachers and schools that have not been incorporated into driving schools and have never received training. Thus, teacher creativity in designing learning needs attention. Based on the results of distributing questionnaires to 54 MGMP physics teachers in the Musi Banyuasin district, 87.5% of teachers need help understanding developing differentiated e-modules. MGMP Physics teachers in Musi Banyuasin Regency must gain the knowledge and skills to develop differentiated e-modules. The lack of knowledge is due to the new curriculum in 2020.

One of the appropriate strategies for implementing differentiated learning is to develop differentiated-based learning modules (modules typical of the independent curriculum). To make it more exciting and interactive, the module developed is an electronic module. An electronic module (E-Module) is a form of presentation of independent learning materials that are arranged systematically into the minor learning units to achieve specific learning objectives which are presented in an electronic format in which there are animations, audio, and navigation that make users more interactive with the program so that it can be used as a learning media (N. S. Herawati et al., 2018). Differentiated e-modules don't have to meet all learners' needs every time. However, it is expected that the e-modules available can use a variety of learning

approaches so that most students find learning that suits their needs (V. Puspitasari, 2020; N. Latifah, 2020).

Differentiated e-modules in physics subjects can accommodate the characteristics and potential of each learner seen from 3 aspects: readiness, interest, and learning profile. The making of e-modules in this training is directed at the learning aspects of learners. The learners' learning profile refers to the approach or how the learners best understand the lesson. In addition, the five senses also play an essential role in learner learning. Visual-type learners can learn optimally by using their sense of sight. At the same time, auditory-type learners use the sense of hearing to capture information. At the same time, kinesthetic learners need physical movements to remember something (Purba, dkk., 2021).

Some previous research states that this mentoring activity is effective because it can increase participants' gain in the very satisfying category. In addition, teachers also experience understanding, adaptability, and flexibility in developing differentiated teaching modules (Mahdiannur, 2022; Faiz et al., 2022). The objectives of this service activity are 1) to provide training in making differentiated e-modules in physics subjects for teachers who are members of the Physics MGMP in Musi Banyuasin Regency, 2) Open insights to the trainees to continue to innovate in developing other learning media that can support the physics learning process to be more optimal for students, and 3) Improve teacher skills in designing and making differentiated e-modules in physics subjects.

Methods

Service activities are carried out using the Participatory Action Research (PAR) method. This method is a learning approach to overcoming problems and meeting the practical needs of the community, as well as producing science and encouraging social change in the community (Sari, 2023). The steps taken to achieve the predetermined objectives include presentations, workshops/training, demonstrations, and discussions. The stages of activities that will be carried out by the University Team and the Partner community (MGMP Physics teachers in Musi Banyuasin Regency) through 1) preparation, 2) implementation of service, and 3) the final stage consists of evaluation and reflection.

Preparation activities are carried out by observing schools and preparing proposals and evaluation instruments that will be used. The evaluation in this program used an observation sheet to determine the implementation carried out by participants consisting of trainees' progress in making e-modules. This mentoring is successful if 80% of the participants can produce differentiated e-modules in physics subjects. Evaluation of the achievement of skill improvement and the effectiveness of service activities is used through interviews, observations, closed questionnaires, and documentation.

The implementation of training program for making differentiated e-modules was aimed at physics subject teachers (MGMP), as many as 20 trainees in Musi Banyuasin Regency. The implementation was held on Saturday, September 16th, 2023, and starting at 08.00 WIB until 12.00 WIB. Specifically, training activities are carried out face-to-face in the classroom between

lecturers as a team of community service activities and physics teachers (MGMP) involved as training participants. The activity stages began with administering pre-test questions and delivering differentiated e-module material in physics subjects by the lecturer team.

Activities in the final stage are evaluation and reflection through administering post-tests and distributing response questionnaires to training and mentoring activities on creating differentiated e-modules for physics subjects. This questionnaire is analyzed using a Likert scale of 1 to 5 with the provisions in Table 1 below.

Table 1. Scale category of participants respond

Scale	Description
3,51 − 4,00	Strongly agree
3,01 − 3,50	Agree
2,51 − 3,00	Disagree
1,00 − 2,50	Strongly disagree

The N-Gain test represents the difference and increase in pre-test and post-test results. The N-gain test is used to determine the improvement in trainees' understanding before and after being given differentiated e-module material in physics subjects using the following formula (Hake, 2002). N-Gain Criteria are shown in Table 2.

$$N - Gain = \frac{\bar{X}_{post} - \bar{X}_{pre}}{\bar{X}_{max} - \bar{X}_{pre}}$$

Table 2. N-Gain Criteria

Skala N-Gain	Category
N-gain≤0,3	Low
0,7 ≥ N-gain > 0,3	Medium
N-gain > 0,7	High

Result and Discussions

Activity Implementation

The N-Gain test represents the difference and increase in pre-test and post-test results. The N-gain test is used to determine the improvement in trainees' understanding before community service, which is an activity that aims to help specific communities in several activities. In general, this program is designed by the Community Service Team to make a real contribution to the community, in this case, teachers, especially in developing the welfare and progress of the community. Community service activities are one part of the Tridarma of Higher Education. The training participants who participated in this activity were 20 members of the Physics MGMP in Musi Banyuasin Regency. After being given differentiated e-module material in physics subjects using the following formula.

The implementation of service activities, namely training and assistance in making differentiated e-modules, is carried out face-to-face. The activity began by giving pre-test questions to trainees through LMS Moodle. This activity is carried out to see the trainees' initial

knowledge regarding differentiated e-modules and students' learning styles. Material delivery by resource persons was carried out for 60 minutes. The material presented alternately by the resource persons of the service team is listed in Table 3 below.

Table 3. Community Service Materials

No.	Content
1.	Learning of Module and E-Module
2.	The Learning Styles
3.	Learning into Differentiated Learning
4.	Deepening Visual Learning
5.	Deepening Auditory Learning
6.	Deepening Kinesthetic Learning
7.	Visual E-Module Creation
8.	Creation of Auditory E-Modules
9.	Creation of Kinesthetic E-Module
10.	Deepening Instructions for Use of Differentiated E-Modules

The implementation activities continued by presenting examples of differentiated e-modules in physics subjects that can facilitate the learning styles of each learner. The intended learning styles of learners are visual, kinesthetic, and auditory. Learning styles have three modalities (types): visual, auditory, and kinesthetic (De Porter, 2000). Many other experts categorize learning styles based on cognitive preferences, intelligence profiles, and sensory preferences (Rambe, 2019).

Visual learning style emphasizes visual acuity. This learning style suggests that concrete evidence must be shown first for students to understand. Auditory learning style is a learning style by hearing. The auditory learning style prioritizes the listening senses (Faiz et al., 2022). (De Porter, 2009) says that an auditory learner is dominant in hearing and remembering what is discussed rather than seen. The kinesthetic learning style is learning by moving, working, and touching. This learning style is a learning style that prioritizes the sense of taste and physical movements. Kinesthetic learning style is a learning style that applies to a learner who utilizes his physicality as an optimal learning tool.

Optimizing the physics learning process through learning styles is facilitated through e-modules developed by the trainee teachers. The implementation activities involved discussions, questions, and answers between resource persons and trainees. The series of core activities on the service agenda that have been carried out are documented in Figure 1 below.

Apart from providing face-to-face assistance, the service team also provided online assistance through Zoom meetings. Consultation on making e-modules is intended for training participants who have difficulty adding features to e-modules through flip professional builder. The training and mentoring activities ended with the trainees' presentation of each physics learning e-module. The results of e-module products made by trainees in Musi Banyuasin Regency can be seen in Figure 2.

The developed product is an indicator that teachers can create different e-module products with different module characteristics. The display of e-modules for visual learning styles will involve pictures, tables, and diagrams and include reading references for students. At the same time, e-modules for auditory learning styles will use learning videos included with

voice recordings for explanations of physics material presented through e-modules. E-modules for kinesthetic learning styles will use hands-on activities such as Phet Simulation to facilitate learners.

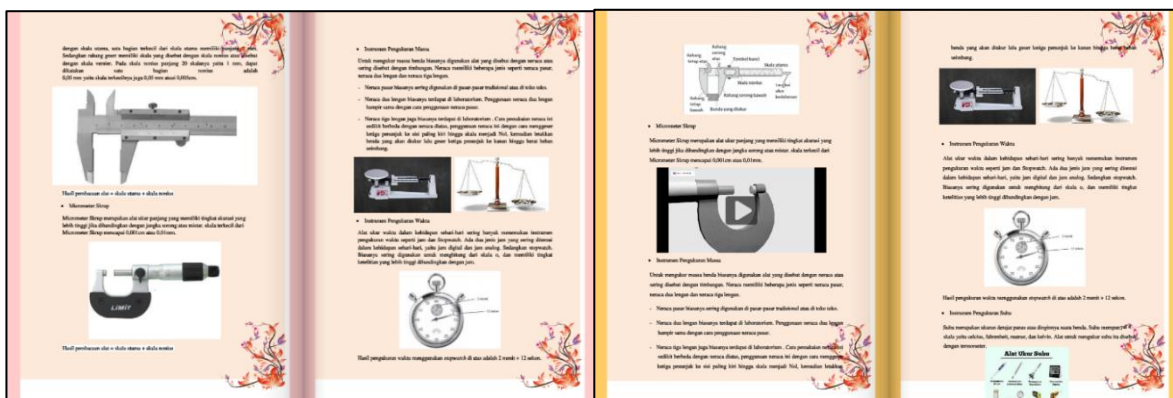**Figure 1.** Community Service Implementation Activities

Figure 2. E-Module Products for Learners' Learning Styles

Trainee Capability Evaluation

At the beginning of the service activity, the trainees were given a pre-test, and a post-test was given after the activity. Based on the data obtained from the pre-test, post-test, and N-Gain scores, it can be concluded that learning has increased theoretical understanding of differentiated learning and making differentiated learning modules for physics subjects. This

can be seen from the acquisition of teacher scores that have increased after being given treatment. Pre-test and post-test values, namely, the pre-test value, are obtained before giving it to the teacher through a series of service activities. The teacher obtains the post-test value after treatment or after the teacher participates in the service. The evaluation results of the participants' abilities are illustrated through a bar chart in Figure 3 below.
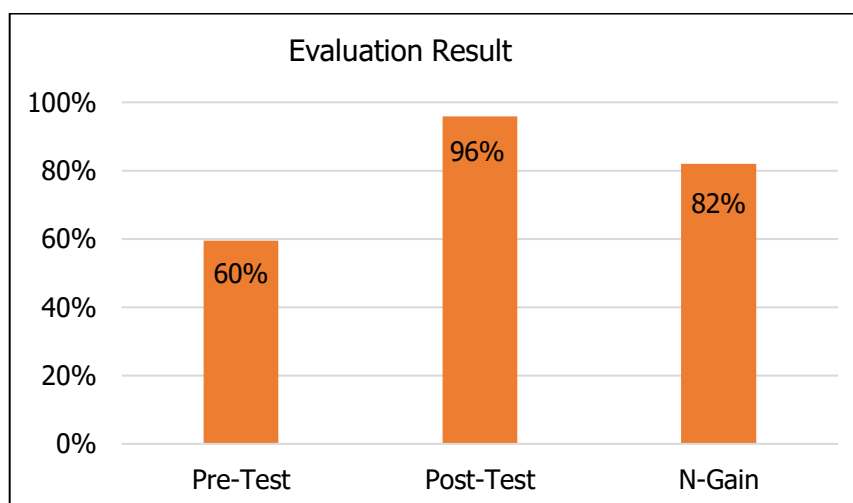

Figure 3. Pre-Test, Post-Test, and N-Gain Result

Through the graph in Figure 3, the pre-test and post-test scores can be seen. The pre-test score with 20 participants obtained an average of 60%, and the post-test score obtained an average of 96%, for a Gain score of 82%. This value represents the interpretation of the practical improvement category. Even though the concept of differentiation has developed since the NCLB era (Bondie et al., 2019), the pre-test results of the service participants show that so far, the teachers have yet to recognize and understand the concept of differentiated learning. Through the post-test results, the service activities carried out have positively impacted the ability of high school teachers to make differentiated modules. The improvement of teachers' abilities and skills is seen in terms of knowledge and of teachers' skills in making differentiated modules. All participants completed the worksheets and collected them well, which shows that high school teachers already have sufficient knowledge and skills to make differentiated modules.

Participant's Satisfaction Level

The satisfaction level of participants in making differentiated e-modules in physics subjects for physics subject teachers in Banyuasin Regency, which 20 participants attended, is demonstrated in the following demographic data. The questionnaire statement items are presented in Table 4 below. The statements were processed using a Likert scale through the options of Strongly Agree, Agree, Disagree, and Strongly Disagree. The results of the trainees' responses are depicted in Figure 4 below.

Table 4. Participant Satisfaction Response Questionnaire Statement

No.	Statement
1.	The material with the title above is in accordance with the needs of the teacher
2.	The activities is in accordance with teacher expectations
3.	The way the presenter presents the material to the teacher is very interesting
4.	The material presented is clear and easy to understand
5.	Time for material delivery has been in accordance with the service activities
6.	The team involved in the service activities has provided services according to the needs of teachers
7.	The activities for teachers are carried out on an ongoing basis
8.	Every complaint/question/problem raised by teachers has been followed up well by the service team involved
9.	Teachers get direct benefits from the service activities carried out
10.	The service activities improved teacher competence in the material for developing differentiated E-Modules.
11.	Teachers are satisfied with the service activities that have been carried out
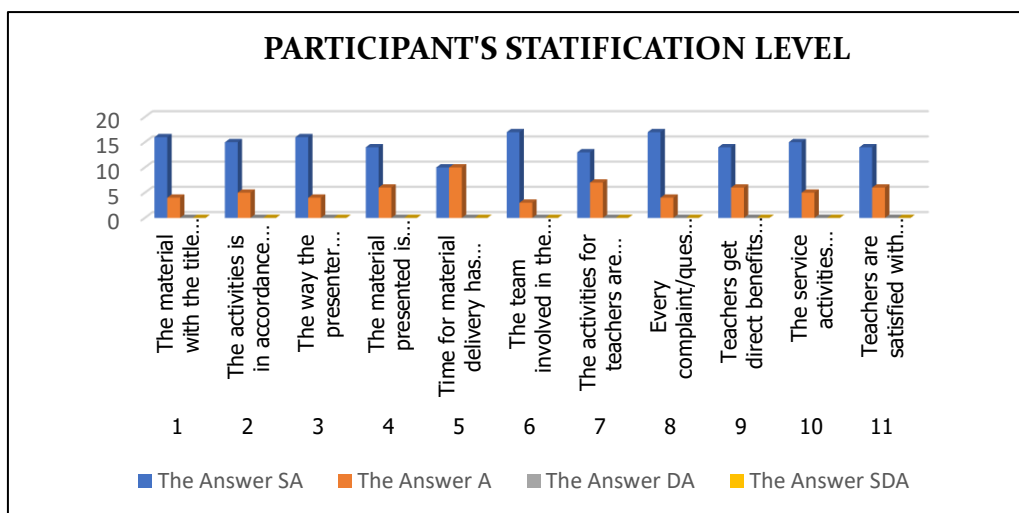
Figure 4. Participants' satisfaction level response

The diagram above shows the percentage demographics that teachers get direct benefits from the team involved in service activities that are in accordance with their needs. The service material is delivered in accordance with the needs of the teacher, getting a very agreeable response at a rate of 80%. Training participants strongly agreed that the form of service activities was in accordance with teachers' expectations by 75%, and 80% of participants strongly agreed that the way the presenter delivered the material from the resource person to the teacher was very interesting. As many as 70% of training participants strongly agreed in understanding the material presented, the time for delivering the material was in accordance with the service activities received a strongly agreed response of 50%, a strongly agreed response of 85% was illustrated through the team's involvement in the service activities had provided services according to the needs of the teachers.

As many as 65% of the training participants strongly agreed that the service activities need to be carried out on an ongoing basis, and 85% strongly agreed that every complaint/question/problem raised by the teacher had been followed up well by the service

team involved, the teacher received direct benefits from the service activities carried out received a response of 70% strongly agreed. As many as 15% strongly agreed that the service activities increased teacher competence in differentiated e-module development material. Support these results Lukman, H.S. et al. (2023) who also stated that the teachers' response to the mentoring activity showed that it was helpful for teachers as a preparation for implementing the Merdeka curriculum in the new school year. This mentoring activity also provides teachers with direct experience in utilizing the Merdeka teaching platform and adapting teaching modules to suit the needs of each education unit (Anggara, B., et al., 2023; Mulyati, T., et al., 2023).

The above results show that it is important to carry out continuous service activities in developing e-modules and other tools. This aligns with previous research by Muhardini et al. (2023), who stated that teaching modules and their devices in a differentiated format are very important to develop to support the implementation of the current independent curriculum. This service activity has generally improved teachers' skills in making differentiated e-modules in physics subjects. Of course, many things could be improved in this service activity, so there is a need for further service activities and the involvement of all physics subject teachers to develop other learning tools in a differentiated learning format.

Conclusion

The community service program was conducted through training and assistance in making differentiated learning e-modules for MGMP Physics teachers in Musi Banyuasin Regency. Activities are carried out in preparation, implementation evaluation and reflection stages. Teachers have an understanding and skills in making differentiated e-modules. The results showed an increase in the ability of pre-test and post-test results, which increased in the high category by 0.82 with a percentage of 82%. Based on the questionnaire results, it was found that 86% of the training participants strongly agreed that this service activity could provide benefits in improving the skills of making differentiated e-modules in physics subjects.

Acknowledgment

References

Afandi, M. (2014). Pentingnya Penelitian Tindakan Kelas Bagi Guru Dalam Pembelajaran Di Sekolah Dasar. *Jurnal Ilmiah Pendidikan Dasar*, *1*(1), 1–19.

Anggara, B., Wandari, W., Nugraha, A., Saparudin, I., & Tasman, M. (2023). Peningkatan Kompetensi Guru Sekolah Dasar melalui Penguatan Pembelajaran Berdiferensiasi Berbasis Hypothetical Learning Trajectory. *Abdi Wiralodra: Jurnal Pengabdian Kepada Masyarakat*, *5*(1), 45-58.

Arlinwibowo, J., Retnawati, H., & Kartowagiran, B. (2021). How to Integrate STEM Education in The Indonesian Curriculum? A Systematic Review. *Challenges of Science*, 18–25. https://doi.org/10.31643/2021.03

Bondie, R. S., Dahnke, C., & Zusho, A. (2019). How does changing "one-size-fits-all" to differentiated instruction affect teaching? Review of Research in Education, 43(1), 336–362. https://doi.org/10.3102/0091732X18821130

Cholifah, T. N. , D. I. N. S. , & U. S. (2018). Analisis Gaya Belajar Siswa Untuk Peningkatan Kualitas Pembelajaran. *Indonesian Journal of Natural Science Education (IJNSE)*, *1*(2), 65–74.

De Porter. (2009). *Quantum learning: Membiasakan belajar nyaman dan menyenangkan*. Kaifa.

De Porter, B. & H. M. (2000). *Quantum Learning*. Kaifa.

Faiz, A., Pratama, A., & Kurniawaty, I. (2022). Pembelajaran Berdiferensiasi dalam Program Guru Penggerak pada Modul 2.1. *Jurnal Basicedu*, *6*(2), 2846–2853. https://doi.org/10.31004/basicedu.v6i2.2504

Hanh, H. T. M., Khue, H. T., Hai, D. M., & Hoi, D. D. (2021). Awareness of education university's preschool students about the impact of 4.0 industrial revolution in education and role of STEM education in teaching. *Journal of Physics: Conference Series*, *1835*(1), 012098. https://doi.org/10.1088/1742-6596/1835/1/012098

Herwina, W. (2021). Optimalisasi Kebutuhan Murid Dan Hasil Belajar Dengan Pembelajaran Berdiferensiasi. *Perspektif Ilmu Pendidikan*, *35*(2), 175–182. https://doi.org/10.21009/PIP.352.10

Kioupi, V., & Voulvoulis, N. (2019). Education for Sustainable Development: A Systemic Framework for Connecting the SDGs to Educational Outcomes. *Sustainability*, *11*(21), 6104. https://doi.org/10.3390/su11216104

Laurie, R., Nonoyama-Tarumi, Y., Mckeown, R., & Hopkins, C. (2016). Contributions of Education for Sustainable Development (ESD) to Quality Education: A Synthesis of Research. *Journal of Education for Sustainable Development*, *10*(2), 226–242. https://doi.org/10.1177/0973408216661442

Lukman, H. S., Setiani, A., & Agustiani, N. (2023). Pelatihan Penyusunan Modul Ajar Berdiferensiasi Untuk Meningkatkan Kesiapan Implementasi Kurikulum Merdeka. *JMM (Jurnal Masyarakat Mandiri)*, *7*(5), 4961-4970.

Mahdiannur, M. A. , E. E. , M. M. , N. T. , R. L. , & Q. A. (2022). Pendampingan Pengembangan Modul Ajar Berdiferensiasi Untuk Guru Mata Pelajaran IPA SMP/Sederajat Berorientasi ESD. *BERNAS: Jurnal Pengabdian Kepada Masyarakat*, *3*(4), 801–808.

Marlina, M., Efrina, E., & Kusumastuti, G. (2019). Differentiated Learning for Students with Special Needs in Inclusive Schools. *Proceedings of the 5th International Conference on Education and Technology (ICET 2019)*. https://doi.org/10.2991/icet-19.2019.164

Muhardini, S., Haifaturrahmah, H., Ibrahim, I., Sudarwo, R., Anam, K., Herianto, A., … & Khosiah, K. (2023). Pelatihan Pengembangan Modul Ajar Berdiferensiasi Bagi Guru-Guru Di SDN 1 Jeringo. *Selaparang: Jurnal Pengabdian Masyarakat Berkemajuan*, *7*(3), 2186-2190.

Mulyati, T., Hariastuti, R. M., & Efendi, Y. K. Pengembangan Kompetensi Tutor dalam Pembelajaran Berdiferensiasi Melalui Pelatihan Berbasis Kinerja di PKBM El Fataa Banyuwangi. *Prosiding Sendimas*, *8*(1), 192-198.

N. Latifah, A. and E. S. K. (2020). Pengembangan e-modul fisika untuk meningkatkan kemampuan berpikir kritis peserta didik. *J. Inov. Pendidik*, 1–7.

N. S. Herawati and A. Muhtadi. (2018). Developing Interactive Chemistry E-Modul For The Second Grade Students of Senior High School. *J. Inov. Teknol. Pendidik*, *5*(2), 180–191.

Purba, M., Purnamasari, N., Soetantyo, S., Suwarna, I. R., & Susanti, E. I. (2021). Prinsip Pengembangan Pembelajaran Berdiferensiasi (Differentiated Instruction). *Kementarian Pendidikan, Dan Kebudayaan, Riset, Dan Teknologi*.

Rambe, M. S. , & Y. N. (2019). Pengaruh gaya belajar visual, auditorial, dan kinestetik terhadap prestasi belajar siswa SMA Dian Andalas Padang. *Jurnal Review Pendidikan Dan Pengajaran (JRPP)*, *2*(2), 291–296.

Rohida, L. (2018). Pengaruh Era Revolusi Industri 4.0 terhadap Kompetensi Sumber Daya Manusia. *Jurnal Manajemen Dan Bisnis Indonesia*, *6*(1), 114–136. https://doi.org/10.31843/jmbi.v6i1.187

Sari, N. M. , Y. P. , F. E. , M. M. P. , A. N. , & P. N. S. A. (2023). Pelatihan pembuatan storyboard dan games interaktif untuk guru dan mahasiswa magister pendidikan matematika. *Transformasi: Jurnal Pengabdian Masyarakat*, *19*(1), 153–166.

Slameto, S. B. S. , & W. K. W. (2017). Peningkatan Kinerja Guru Melalui Pelatihan Beserta Faktor Penentunya. *Jurnal Pendidikan Ilmu Sosial*, *27*(2), 38–47.

Suprapto, N., Prahani, B. K., & Cheng, T. H. (2021). Indonesian Curriculum Reform in Policy and Local Wisdom: Perspectives from Science Education. *Jurnal Pendidikan IPA Indonesia*, *10*(1), 69–80. https://doi.org/10.15294/jpii.v10i1.28438

V. Puspitasari, R. and D. A. W. (2020). Pengembangan Perangkat Pembelajaran dengan Model Diferensiasi Menggunakan Book Creator untuk Pembelajaran BIPA di Kelas yang Memiliki Kemampuan Beragam. *J. Educ. Dev. Inst.*, *8*(4), 310–319.

Valiandes, S. (2015). Evaluating the impact of differentiated instruction on literacy and reading in mixed ability classrooms: Quality and equity dimensions of education effectiveness. *Studies in Educational Evaluation*, *45*, 17–26. https://doi.org/10.1016/j.stueduc.2015.02.005