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Optimization of Self-Regulated Learning in the Development of Professional Pdf Flip E-modules in the Implementation of Post-Covid-19 Pandemic Learning in Elementary Schools of Magetan Regency

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ABSTRACT

Learning design is the main thing that can support student learning outcomes. There needs to be optimization efforts, especially on the implications of self-regulated learning. This effort is expected to be able to coordinate the various abilities of students by improving learning characteristics. Self-regulated learning is a learning characteristic that requires students to be responsible for themselves in active learning to improve their learning achievement. Based on the results of research conducted at various levels of education, it was found that the use of self-regulated learning made a significant contribution to learning and increased learning achievement of elementary school students in Magetan district. Therefore, we need to have broad insight in understanding learning psychology and be able to condition it through constructive and meaningful learning designs. Educators are expected to be more observant in understanding the characteristics of students' abilities so that they are more flexible and open.

Introduction

The key to successful learning lies in several aspects, one of which is cognitive. Components such as learning materials, learning Learning design is the main thing that can support student learning outcomes. There needs to be optimization efforts, especially on the implications of self-regulated learning. This effort is expected to be able to coordinate the various abilities of students by improving learning characteristics. Self-regulated learning is a learning characteristic that requires students to be responsible for themselves in active learning to improve their learning achievement. Based on the results of research conducted at various levels of education, it was found that the use of self-regulated learning made a significant contribution to learning and increased learning achievement of elementary school students in Magetan district. Therefore, we need to have broad insight in understanding learning psychology and be able to condition it through constructive and meaningful learning designs. Educators are expected to be more observant in

understanding the characteristics of students' abilities so that they are more flexible and open.strategies, learning processes, and their implications for absorbing value from the material delivered by educators are influenced by students' cognitive aspects. Therefore, cognitive optimization of students is certainly very necessary. Another form is the application of self-regulated learning.

The learning environment that is regulated by students in learning includes the physical and non-physical environment.Students in learning can also be an interpretation of student success in participating in learning activities.The Effect of Self-regulated Learning (SRL) Learning Model on Scientific Attitudes and Student Science Learning Outcomes. Fredrick (2012) suggests that student engagement consists of three dimensions, namely emotional, cognitive and behavioral involvement. Cognitive engagement is an effort made by students to exert all their abilities in understanding complex ideas and mastering difficult skills. The ability to understand and solve difficult problems is of course not instantaneous, so efforts in coordination skills are needed. This is expected to be able to foster learning independence which will have a positive impact on cognitive.

Empirical studies exploring the effects of SRL interventions have usually focused on increasing attainment. Self-study of students is very important in determining complex organized mindsets. This view sparks that the ability to self-regulate serves to provide good learning outcomes. Of course, this greatly influences educators' efforts to foster self-regulated learning.

School activities during the pandemic were more directed at learning using assignment techniques. This technique is considered very ineffective to be applied to elementary school students. The success of learning is too far from the standard of achievement that should be. There needs to be another alternative to support post-pandemic learning to catch up while simultaneously deepening learning materials.So researchers are trying to develop E-modules that can be accessed at any time by students.

The use of E-modules developed by researchers is in synergy with the use of current technology.Bookwhich is designed digitally can be used as a learning medium. The role of educational technology is very much in line with these needs.. Educational technology synergizes with people, ideas, procedures, and equipment that support learning activities. In addition, there are also aspects of learning, such as designing, implementing, assessing, and managing problem solving in education and learning.

Related to this, cognitive strategies are carried out by students repeating material stored in their memory. In addition, students conduct questions and answers regarding the material being studied to express understanding in the form of concept maps, diagrams, and others. Therefore the E-module is expected to assist students in increasing their understanding of the material, and studying it.Besides that, it also balances the cognitive abilities and metacognition they have.

The ability of self-regulated learning / SLR in elementary school-age children can accelerate learning outcomes. The concept of independence is very suitable to be applied during a pandemic but can also be used post-pandemic.The fact that students take responsibility for learning, planning, monitoring, and evaluating their own learning process is commonly discussed in self-regulated learning (SRL) (Lai & Hwang,2016). The need to coordinate himself in order to have the opportunity to create independent learning. Students will know the portion they have and create full responsibility.Zimmerman and Martinez Pons, (in Bandura, 1997) say that self-regulated learning (SRL) is a learning model that gives freedom to students to effectively manage their own learning in various ways, so as to achieve optimal learning outcomes. (M. Merlin 2015)

E-modules are learning media that provide variations in book form in general. Sheets or teaching modules are considered less effective. It takes space and space if it has to be carried. Therefore this e-module is useful, moreover it is made using flipbook.pro which can be accessed via video and sound. E-modules do not only consist of text and images (R. Nopiani 2021).

The aims of this study were: 1) To determine the feasibility of e-module media in elementary schools with the theme of temperature and displacement 2) To determine the effectiveness of the e-module media in elementary schools with the theme of temperature and displacement. transfer. This research is based on strong considerations to be useful for the benefit of production, distribution and utilization for the wider community (LNK Maniq 2022).

The design of media selection cannot be separated from Anderson's opinion (1987:34), namely: 1) There is cognitive ability, 2) It does not involve foreign objects or objects 3) It involves personal skills 4) No motion demonstrations are needed 5) No sound demonstrations are needed. Based on this flow, it can be seen that the e-module is an independent learning medium and is self-instructional, self-contained, stand-alone, adaptive and user-friendly. The nature of this e-module media is compatible when paired with a self-regulated learning model that promotes independent learning. E-module learning media is an Android-based learning media to improve thinking skills (SN Safitri 2021). This self-instruction-based learning media prioritizes student independence and experience (MF Siloto 2022).

Learning media is very important to use in improving one's abilities. E-module is media that is self-instructional so it is very suitable to be applied in post-pandemic learning to make it easier for students to learn in different places and time periods. Cell-regulated learning is also a form of independent learning so that it makes them more active. Based on the problems found in post-pandemic elementary schools, it is necessary to do "Optimizing Self-regulated learning in the Development of Professional FLIP PDF E-modules in the Implementation of Post-Pandemic COVID 19 Learning in Elementary Schools of Magetan Regency".

Research methods

The method used in this research is development or Research and Development (R&D). Development research is used to provide results in the form of products or media. Testing the effectiveness of the product from the results of the product made is a characteristic of development research. The function of this research method is very diverse, such as learning outcomes aids, namely learning media, learning designs, learning strategies and models and others. The research presented this time relates to learning media.

E-Module learning media is still rarely applied to elementary school children. This is certainly not an obstacle because it actually provides a solution that is able to overcome learning lag due to the pandemic (N. Kadek 2021). This E-Module media can be used as an alternative in recovering post-pandemic learning. Online text with attractive pictures and various videos can support the learning process (NK Putri 2021).

This efficiency and effectiveness is of course also felt by teachers, students, and parents because the e-module can be accessed anytime and anywhere. (Handayani 2021). Some supporting evaluation questions in the form of games can also be used to measure their understanding. This e-module can be implemented optimally. In addition, applied e-modules have been developed.

One of the development models that will be applied in this research is ADDIE. The ADDIE model is considered according to the model and media developed. This development model is a research model that presents the stages systematically (regularly) and systematically in their use aims to achieve the desired results (JH Hardy 2019).

ADDIE stands for Analysis, Design, Development and Implementation and Evaluation. Viewed from a philosophical basis, ADDIE's research model must be innovative, authentic, inspiring, and student center. The stages of the ADDIE process are related to one another, therefore the use of this model needs to be carried out in stages and thoroughly to ensure the creation of learning products that are in accordance with what the researcher wants.

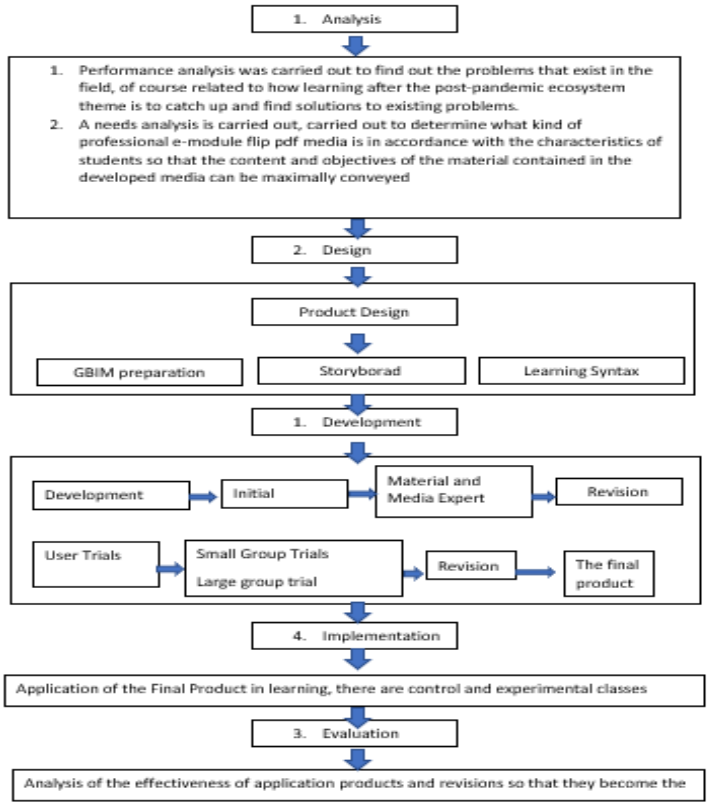

Figure 1. Chart of Research Procedures

The ADDIE model was chosen as the test subject, because:

1. The ADDIE model uses interactive, systematic and sequential steps.
2. The ADDIE model is used in the development of teaching materials in all aspects, namely cognitive, affective and psychomotor aspects. Therefore it is suitable to be applied in the manufacture of e-module media
3. Effective in the development of learning media. This media expert consists of two validators, namely the lecturers.

In this development, researchers involved test subjects, namely:

1. Material expert
   This is the party appointed as a material facilitator who is competent in accordance with his field. In this case the e-module material expert is the class teacher who teaches grade 5.
2. Learning design expert
   This learning design is a competent RPP validator according to the field, namely the lecturer.
3. Media expert
   Media experts are parties appointed as media validators who have extensive development in the media field. The media experts are lecturers.
4. Media content expert

The media accompanying materials expert aims to assess the supporting materials that have been made by media developers. There are two media accompanying material experts, namely the lecturers.

5. Students as product trial subjects
   The number of students used was 60 people with trials carried out in stages. The trials were carried out on individuals, small groups, and large groups.

Discussion

In the ADDIE model, it can be implemented through five predetermined stages. The steps of the ADDIE model are as follows:

1. Analyze
   - Performance analyst
     Following up on the results in the field that the learning given was only lectures and giving assignments during the pandemic
   - Need analysis
     Based on this, it is necessary to use effective learning media
2. Design
   The need for related matters used in the design, namely reference materials from various trusted sources, preparation of concept maps, to the design of e-module learning media.
   - Media concept
     Researchers design e-modules by making storyboards of the media to be developed. The e-module multimedia storyboard is how the content and appearance of the e-module will be developed.
   - Material concept
     The material chosen for the development of this e-module is an introduction to tools in wood practices according to the class V syllabus for ecosystem material. The material presented is in the form of metamorphosis, symbiosis, food chain to the life cycle of animals. The material was chosen for media development because based on the results of the questionnaire given to students, they needed time to be able to study independently not only in class but to be able to study independently anywhere.

Figure 2. E-Module design process with Flip PDF Professional

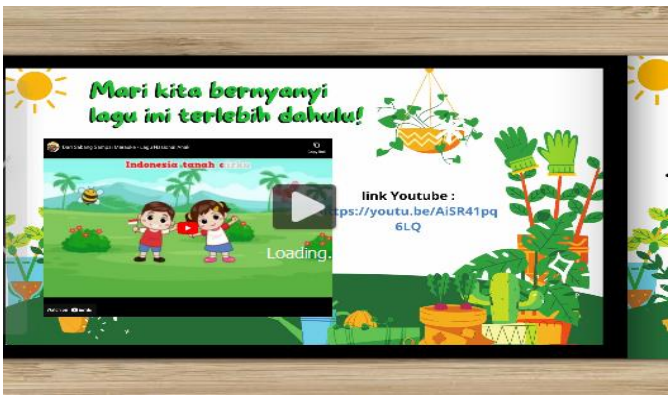

Figure 3. Display of E-module equipped with interactive learning videos

3. Development
   - Media Expert Team Validation
     a. Production of e-modules
        The application used in making this e-module is flip pdf professional to process and design learning content.
     b. Media component validation
        Results obtained:

Table 1. Validation of Media Component

Validation Component	Profit Percentage	Criteria
Material validation	93.75%	Very good
RPP validation	90%	Very good
Media validation	94.45%	Very good
Media companion material validation	91.67%	Very good

     c. Revised e-module
        Researchers provide revisions so that media development products can be increased.

NO	ASPECT	INDICATOR
1	Material Suitability	• Conformity of material with core competencies and basic competencies • Suitability of presentation of material • Suitability of material with learning objectives • Appropriateness of evaluation questions in accordance with the indicators to be achieved • The attractiveness of the presentation of the material
2	Material Accuracy	• Systematic accuracy of presentation of material • The accuracy of the media (images, text, video, etc.) with the contents of the material
3	Language	• Use of easy-to-understand language • Clarity of information presented

Figure 4. Validation of Material Expert

4. Application
   Implementation was carried out by researchers with three trials to be compared. These trials are none other than individual trials, small group trials, and large group trials.
   - Product trials using questionnaires to students
     The results obtained are as follows:
     Table 2. Product trials using questionnaires to students

Trial Subjects	Profit percentage	Criteria
Individual trials	100%	Very good
Small group trial	95.71%	Very good
Large group trials	93.18%	Very good

   - Validity and Reliability Test
     Based on the validity test that has been carried out, the results obtained are 0.336 (valid) and the reliability test is 0.5641. It is known > (0.5641 > 0.2524). So that the question data related to ecosystem material in elementary schools is declared reliable.$r_{hitung} r_{tabel}$
5. Evaluation
   The evaluation stage is the final stage of ADDIE's research. After the developed interactive multimedia is implemented in class, the product needs to be evaluated. Formative evaluation will be used at this stage to find out whether interactive multimedia products are feasible or not in the learning process (D. Putu 2016). This evaluation covers all parts of the product, starting from material content, media design, ease of use, and so on (RS Jansen 2019). At the evaluation stage, the final revision of the product is carried out based on suggestions and input from students and experts provided during the development and implementation stages.

CONCLUSION

1. Media Eligibility
   a. Professional PDF based electronic module
      Based on the due diligence previously carried out in grade 5 elementary schools in Magetan Regency together with media experts and material experts it was stated that the media was very feasible to be implemented in elementary schools. The E-module media has also been tested in various categories such as individual, large group and small group (Putra 2021). Seeing this, it can be said that the media is very feasible to use.
   b. Implementation of E-module based on Learning Implementation Plan (RPP)

The application of lesson plans that have been tested by media experts and material experts and declared appropriate has been declared good. This RPP is feasible to be implemented using e-module media.

2. Media Effectiveness

   Based on the results of data analysis, the application of PDF Professional e-module learning media with grade 5 material in elementary schools in Magetan Regency regarding the theme of ecosystems is focused on natural science material. Significantly the application of PDF Professional e-module learning media is said to be effective in class. Evidenced by the results of the comparison between the pretest and posttest values. The pre-test score based on the diagnostic assessment was 63.44 while the final post-test score was 85.44. This comparison can strengthen the use of media that the media is appropriate and help address the increase in student learning outcomes.

3. Self-regulated learning model with PDF Professional e-module media

   The use of the Self Regulated Learning learning model can help improve student learning outcomes as seen from the results of the pre-test and post-test.The SLR model is in accordance with the e-module which will foster student independence (D. Nugraha 2015). Learning independence will foster students' interest in continuing to learn. Learning using e-modules trains students' independence to be able to learn anywhere and anytime.

Confession

We would like to thank the Teacher Professional Education Study Program, Faculty of Teacher Training and Education, University of PGRI Madiun, which has provided new insights into knowledge that I have not yet obtained and was able to explore previous knowledge. Thank you for morphing into one of the academic community that enliven the academic atmosphere.

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