



Development of Biology E-Module Based on Integrated Inclusion of Pancasila Student Profiles

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Abstract: This research aims to develop an inclusion-based biology e-module integrated with Pancasila student profiles. The method used in developing this e-module refers to the ADDIE model, which consists of 5 main stages, namely: Analyze, at this stage, the research team collects data related to learning problems; Design, at this stage, the activities of preparing learning tools, preparing assessment instruments, and preparing the initial draft of an inclusion-based e-module integrated with Pancasila student profiles. Development, at this stage, develops an inclusion-based biology e-module, validates the module and tests the readability of the module by subject teachers. Data from validation results of the Biology E-Module that has been developed obtained a total score from expert validator I of 68.67% and an expert validator II score of 73.67%. The conclusions obtained in developing an inclusion-based biology e-module integrated with the Pancasila student profile are valid and can be used as a learning medium for inclusive students.

Keywords: E-module; Inclusion; Pancasila Student Profile.

Introduction

Inclusionary education is where students with special needs learn together in regular schools (Rusmono, 2020). Involvement in learning helps students with special needs receive equal treatment. In line with the opinion of (Sánchez et al., 2019) inclusive education plays a role in realizing the goals of a quality, fair, and equitable education system. Teachers play an essential role in making learning enjoyable.

Inclusive students have the right to receive an education equal to their other friends (Krämer et al., 2021). This is because inclusive education is essential to learning (Cooc, 2019). In reality, there is still a lack of special attention for inclusive students, inadequate facilities and infrastructure, and a lack of knowledge of teaching staff (Agustin, 2016; Windarsih et al., 2017). These obstacles can impact the development of knowledge of inclusive students.

The research results (Göransson & Nilholm, 2014) explain that other obstacles were found due to a lack of understanding in building inclusive classes involving students. It is recommended that teachers and students

study together in the classroom to create a more inclusive classroom (Nilholm, 2021). Good teacher communication is essential in building students' psychology (Derzhavina et al., 2021). This method avoids distance from students.

Knowledge can help teachers in teaching students with special needs. Curriculum using digital technology is a learning strategy for students with special needs (Abdul Jalil et al., 2021). Digital learning plays a role in advancing the education world (Pramana et al., 2020). Teachers must use digital technology creatively (Astuti et al., 2022). One of them is implementing digital-based learning.

Digital learning or e-learning still needs to be implemented optimally in inclusive learning. School facilities still need more implementation (Zwane & Malale, 2018). Facilities and infrastructure for e-learning-based learning media that still need to support teachers' skills and understanding that still need to be improved are obstacles in implementation (Hartini & Susilowati, 2019). School principals must also innovate in developing teachers' digital capabilities (Gill, 2020).

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Attractive digital-based learning media is needed for inclusive students who are different from other students. One media that can be used is the e-module (Asrial et al., 2020). The characteristics of e-modules are that they use an electronic format, which can be used on devices such as computers, laptops, or smartphones (F. Wulandari et al., 2021). E-modules make it easier for teachers and students to interact without meeting face to face.

E-modules play a role in helping learner students by providing stimulation to the cognitive aspects of the learning process (Sanjoyo et al., 2023). The advantage of e-modules is that they can be used easily by students with disabilities studying independently or with teachers (Musayaroh et al., 2022). E-modules in biology learning can help students understand concepts because they can be studied again after carrying out the lessons learned in class with the teacher.

Inclusive student learning at SMA Negeri 2 Taliwang has been running for four years. The implementation of learning for inclusive students is still combined with general students. So far, teachers still need help learning because they are constrained by teaching materials that suit the needs of inclusive students. The teachers involved in the learning process are still general teachers, so special attention is needed in the form of teaching materials to overcome obstacles in learning carried out for inclusive students, namely the creation of inclusion-based biology e-modules integrated with Pancasila student profiles.

Method

The method that will be used in this research is development research referring to the ADDIE model (Branch, 2009), which consists of 5 main stages, namely: Analyze; at this stage, the research team collects data related to learning problems; Design, at this stage the activities of preparing learning tools, preparing assessment instruments, and preparing the initial draft of an inclusion-based e-module integrated with Pancasila student profiles. Development, at this stage, develops an inclusion-based biology e-module, validates the module, and tests the readability of the module by subject teachers;

Implementation at this stage, the integrated inclusion-based biology e-module of the Pancasila student profile that has been developed is then distributed to SMAN 2 Taliwang. Assessment (Evaluation): At this stage, an evaluation is carried out of the modules previously implemented at each stage of development activities to produce a suitable product.

Result and Discussion

The results of the validation of the development of the Biology E-Module in aspect I of the screen design display, aspect II of convenience, aspect III of utilization, aspect IV of consistency and format, and aspect V of the design can be seen in the following diagram.

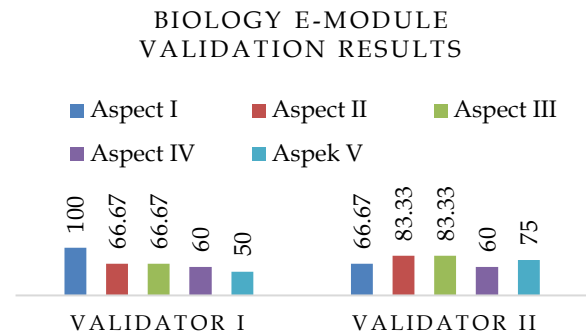


Figure 1. Biology E-Module Validation Results

Data from validation results of the Biology E-Module that has been developed have resulted in the conclusion that the Biology E-Module Based on Integrated Inclusion of Pancasila Student Profiles is suitable for use without revision with a total score from media expert validator 1 of 68.67% and a score of media expert validator 2 of 73.67%.

This data is based on research results Jami'atul et al. (2022), stating that the validation results from the validator with a score of 77% are in the very valid category. Line with research results S. Wulandari & Prasetyaningrum (2018), e-modules based on the flip PDF professional application with contextual teaching and learning assistance are valid, practical, and effective for use as learning media.

The material from the e-module developed is adapted to the essential competencies implemented in schools. The competencies used take into account aspects of students' knowledge and skills. When selecting essential competencies, one needs to pay attention to aspects of knowledge and skills (Lestari et al., 2023). The advantage of this e-module is that students can study it anywhere. E-modules developed from professional flip PDFs can be accessed online and offline (Zinnurain, 2021).

E-modules are interactive and flexible digital learning resources (Rahma et al., 2023). E-modules can help students to learn interactively. E-modules can display audio, video, and images. This display can make students more focused and have fun learning. The advantage of e-modules is that they are interactive because they display images, audio, and animated videos that can be shown directly to students (Rahmatsyah & Dwiningsih, 2021).

Using e-modules is very important to increase interaction in the learning process and make it more enjoyable (Mustika et al., 2018). This is in line with the opinion (Ningsih, 2020) that media and technology are more effective in increasing the role and activity of students. Teacher creativity in utilizing digital media can help students develop enjoyable learning.

Digital media or e-modules can help students receive material using various learning methods. This is because the media can meet the various learning styles of inclusive students (Kurniawan & Badiah, 2022). For example, blind students use their sense of hearing twice as much as reading (Praptaningrum, 2020). The existence of this e-module can provide equality for general and inclusive students so that there is no difference in the material obtained.

The e-module developed for inclusion students aims to convey the intended learning information (Sanjoyo et al., 2023). The main characteristics of the e-module developed are integrated Pancasila student profiles tailored to the needs of inclusive students. The development of e-modules from validation results can be suitable for learning activities (Syuzita et al., 2023). The appearance of the E-Module being developed can be seen in the following figure 1. Cover section of the Biology E-Module Based on Integrated Inclusion, Pancasila Student Profile.



Figure 2. Cover

The foreword and introduction sections briefly explain the e-module, identity, and essential competencies of the material



Figure 3. Foreword and Introduction

The plant tissue material section explains in text and video form to make it easier for students to understand.



Figure 4. Plant Tissue

The material is explained in text and video form to make it easier for students to understand.



Figure 5. Meristem Network

The material is explained in text and video form to make it easier for students to understand.



Figure 6. Epidermis and Endodermis tissue

Conclusion

Based on the results of validation tests by experts, the integrated inclusion-based biology e-module of the developed Pancasila student profile is valid and can be used as a learning medium for inclusive students.

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Author Contributions

TA; tasked with developing an inclusion-based biology e-module integrated with Pancasila student profiles, supervising the data processing process resulting from instrument validation and readability tests, drafting the e-module, and conducting a feasibility study. S; tasked with conducting surveys and observations, compiling instruments, processing data, and compiling articles and publications for mandatory output.

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Conflicts of Interest

The author declares that there is no conflict of interest regarding the publication of this paper.

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