



## Program Development and Learning Evaluation (MeDiVA) for Slow Learning Students of the Primary School Teacher Education Study Program

Wiworo Retnadi Rias Hayu<sup>1</sup>, Hanrezi Dhanian<sup>2</sup>, Teguh Prasetyo<sup>3</sup>, Rasmitadila<sup>4</sup>,  
Laode Amril<sup>5</sup>

<sup>1,2,3,4,5</sup> Program Studi Pendidikan Guru Sekolah Dasar, Fakultas Agama Islam dan Pendidikan Guru  
Universitas Djuanda

Jl. Tol Ciawi No. 1 Ciawi, Kabupaten Bogor, Jawa barat 16720

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### Correspondence:

(Wiworo Retnadi Rias Hayu)

(Telp.081218460806)

([wiwororetnadi1@unida.ac.id](mailto:wiwororetnadi1@unida.ac.id))

**Abstract:** Learning innovation is very important to develop to support effective implementation. Slow learner students need student media and evaluations that make it easier to understand lecture material. So far, researchers have not found any media that helps slow learner students in inclusive education courses. This research aims to produce and develop MEDIVA products for slow learning PGSD students. This development uses a 4D model (Define, Design, Development and Dissemination). The results of this research are research and development carried out using a 4D model, the initial stage or needs analysis stage is carried out by analyzing the basic problems that exist in the learning process, the design stage is creating an Android-based application. designing learning media using a storyboard framework, the development stage is developing Android-based learning media applications, then validation is carried out by material and media experts. The validation results show that in terms of material it is valid, suitable for use with revisions. In terms of media, it is valid, suitable for use with revision. Next, conducting a limited trial (implementation), at the limited trial stage, 21 students including 2 slow learners gave very good responses and carried out evaluations by revising the product according to expert input. Based on the research results, it can be concluded that MEDIVA based on the Android application is declared valid, feasible, easy to use and interesting to use.

## INTRODUCTION

Students who experience physical, intellectual, mental and/or sensory

limitations for a long period of time who interact with the environment may experience obstacles and difficulties in



participating fully and effectively with other citizens based on equal rights. Therefore, learning media and learning evaluation are needed to facilitate students with special needs.

Inclusive education is one of the courses in the Primary School Teacher Education Study Program (PGSD). This course facilitates prospective elementary school (SD) teacher students to be ready to teach in inclusive elementary schools (A. Amin, T. R. Ramalis, and R. Efendi, 2017; S. Soeparman, 2017; Adri, H.T., et al,2021; Alan O. R., 1974) . The number of students who were initial respondents to the preliminary research was 48 students. Those who experienced learning and learning difficulties (slow learners)(E. Hestness et al,2014; K.Lee, 2016; Helmanto,et al, 2020; S.amggoro,2017) . Initial observation data shows that 54% of students have difficulty completing tasks related to calculating, 56% of students experience low concentration, 50% of students experience low self-confidence, they are slow learners. The initial questionnaire of 25 items distributed to students turned out to be more than 5 items agreeing with this statement. This identifies students with mild special

needs, namely 65% of students with learning difficulties and low slowness, 50% of students have difficulty understanding concepts, 87% of students often need help in studying, and 67.4% of students often need help completing assignments. Apart from the first identification, further identification is also carried out to find out students who are slow learners. Characteristics of students who are slow learners , namely slow learning, repeating courses, difficulty understanding learning, submitting assignments late, and low average grades (H. Jin, L. Zhan, and C. W, 2013; L. K. Siregar and A. Supena, 2020; M. Aina and D. Natalia, 2019; Prayitno,2021; Rasmitadila, 2019) .

A method is an orderly method or one that has been thought through in depth to be used to achieve a goal. For slow learner students, they can use the drill or practice method to improve children's concentration and provide lots of practice in the form of questions so that they have an appropriate understanding. Apart from that, lecturers can make difficult subjects easier by using images or media. In addition, for evaluation, different

instruments are used to adjust the student's level of understanding.

Students who are slow learners and have difficulty learning experience obstacles in one or all academic aspects so they need more time, special media and evaluation in learning because they have a slower grasp than the average of other students. In the educational aspect, students' limitations in learning must be accommodated and modified. This can be done by providing learning media and an evaluation process that suits their characteristics. At the tertiary level, which is one of the determining factors in obtaining a job, career and a person's quality of life, the obstacles for students with disabilities in academic and non-academic life on campus also need to be a common concern.

Media development and learning evaluation according to the needs of PGSD students (Buston H.W., 1954; Dimiyati & Mudjiono, 1994; Yulianti, 2021; Uwa, 2021). Apart from that, this learning evaluation course is a mandatory course which is one of the important courses that supports the formation of competent teacher candidates. However, there are still crew members who have learning difficulties

and are slow learners. This development media is developed in the form of cards and evaluations that are adapted to the learning difficulties experienced by students because they are still rarely developed at universities.

The learning media for students who are slow learners and have difficulty learning is in the form of a study card which contains a summary of lecture material for 1 semester which is summarized in more concise and clear language so as to facilitate students' understanding of learning and is equipped with a quiz to check students' understanding of the material they have studied. These study cards will also make it easier for students to study anywhere and at any time because the main principle for learning for students who are slow learners and have difficulty learning is repetition. Then, at the learning assessment stage, an appropriate learning evaluation is carried out, namely by reducing cognitive achievements so that students can more easily pass the assessment. With modifications and accommodations in learning, especially in learning media and learning evaluation, it is hoped that it can help

students with special needs achieve their best abilities in learning (Sugianto, 2017 & Sumarni, et al, 2022).

This development aims to produce media and evaluation instruments to improve the quality of educational services for students with special needs. Apart from that, this media is a special tool so that they can participate in learning and achieve optimal learning achievements. The evaluation instrument developed is also a modification to make it easier for students.

#### METHOD

This development produces an Android media and learning evaluation application (meDIVA). The population of this development is students in the fifth (5) semester of the elementary school teacher education study program (PGSD). The sample for this research was two (2) students who were indicated as slow learners. The use of research methods in developing learning innovation models is the Research and Development (R & D) method with the 4D development model. The 4D model was developed by Thiagarajan (1974) which stands for Define, Design, Development and

Dissemination. More details can be seen in Figure 1.

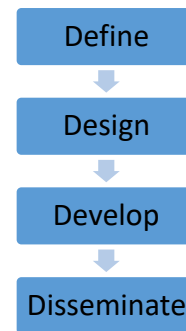


Figure 1. Research flow design and

modification of learning innovation

The 4D model (Define, Design, Development and Dissemination) in this research is as follows:

##### 1. Define

This stage is the initial stage, this research begins with an initial analysis by distributing a simple questionnaire about slow learners to PGSD students. Apart from that, analyzing student assignments and materials to identify students with special needs.

##### 2. Design (Designing)

The planning stage is the second stage in the application development process. The first step taken is to prepare a story board and then arrange the material, tests, quizzes and assignments. Selecting the appropriate

format will produce an initial plan (application prototype).

### 3. Develop (Development)

This third stage is the development of the story board into an initial application, apart from that it also develops media expert validation instruments and material validation instruments. After the initial application has been developed, it will be validated by material and media expert lecturers. The results are analyzed as material for consideration of the perfection of the application. Apart from that, it was also tested on two (2) slow learner students. The results are analyzed for further revision. This is to see student responses and the readability level of the application.

### 4. Disseminate

The final stage is the final stage, namely distribution. Before the distribution is carried out, the application is finalized from the revised trial input and then distributed widely. This research was disseminated to PGSD lecturers for adoption and/or development in other courses. This model consists of four stages, the stages of the Miles and Huberman model, namely: Data Collection, Data

Reduction, Data Presentation, Drawing Conclusions. The data collection techniques used were interviews, observation and documentation studies.

## DISCUSSION & RESULT

Sebelum Before carrying out the process of developing learning innovation products using the 4 D model, the Team held various socialization meetings regarding learning innovation models in inclusive classes which were carried out between Team members, between teaching lecturers and between other lecturers including the leaders of the Faculty and PGSD Study Program at Djuanda University, so that the design and implementation is in accordance with the initial goals and objectives of designing the learning model. The following is documentation of FGD meeting activities and socialization of planning for the development of learning innovation models in inclusive classes for the PGSD FKIP study program, Djuanda University, Bogor.

The steps for implementing the learning model using MEDIVA follow the 4-D model which is then specified in the implementation schedule for

developing learning innovations as follows.

a. The Define stage will be carried out in early October 2023 starting from weeks I-II

1) Needs analysis

At this stage, the research team identified the problems experienced by Students with Special Needs (MBK) and non-MBK students by providing a questionnaire. Questionnaires were given to 26 students using purposive sampling technique. The results can be shown in table 1 below.

Table 1. Results of MBK and non-MBK student responses

Indicator	Number of Student Responses %	
	agree	disagree
I have an average learning score that is always low	11,11	88,99
I am often late when completing academic assignments compared to my friends.	22,22	77,78
I feel my grasp of lessons is slow	37,04	62,96
I have repeated courses	7,41	92,59
I tend to be shy, quiet, lack self-confidence so I have difficulty making friends or socializing	33,33	62,96
I often have trouble following directions, especially ones that have a lot of steps.	51,85	44,44
I tend to have difficulty understanding complex thought patterns or reasoning	70,37	25,93
I have an adequate memory, but it is a bit slow.	70,37	25,93

I am healthy, but have limited coordination abilities	51,85	44,44
I also had difficulty understanding lessons at school	40,74	55,56

Based on the results of the needs analysis above, the most prominent problems are (1) I tend to have difficulty understanding complex thought patterns or reasoning, (2) I have adequate memory, but it is a bit slow, (3) I often have difficulty following instructions, especially those have many steps, (4) I am healthy, but have limited coordination abilities. To obtain more in-depth information, the research team conducted in-depth observations regarding the slow learning experienced by students.

2) Learning Analysis

The learning process that has been designed and implemented by the PGSD FKIP lecturers has accommodated learning for MBK and non-MBK students. This is based on observations and interviews with students who have been given equal, fair and non-discriminating opportunities in learning in class. Lecturers often use lecture, discussion, presentation and cooperative learning

methods in class. The lecturers who teach have also used learning methods that make it easier for students to create visualizations, process reasoning and convey arguments, but not all of them are successful. According to students, some of the learning provided is still just lectures, making it monotonous for students.

### 3) Analysis of the characteristics of students (students)

Identifying the behavior and initial characteristics of students aims to enable each lecturer to design learning appropriately in accordance with the learning objectives that have been determined. Students with special needs who have been identified are PGSD FKIP Djuanda University students who are currently in semester V of the 2023/2024 academic year.

### 4) Analysis of assignments and teaching materials

The process of creating a learning analysis is a process of describing the competencies that have been determined by the lecturer in the Inclusive Education course into sub-competencies logically and systematically. Teaching lecturers create special competencies that are tailored to

predetermined learning objectives, and share them in several learning meetings.

As a result of the learning analysis that has been made, it is hoped that learning can provide competency achievement for all students, including MBK, through stages that have been arranged in a structured and systematic manner. Through the subcompetencies that have been prepared, students will learn each material and achievements from the Inclusive Education Course Learning Outcomes (CPMK) which will then be included in the RPS (found in the attachment)

### 5) Analysis of Learning Objective Specifications

The formulation of specific learning objectives is divided into several course learning outcomes (CPMK) to achieve general objectives that have been determined during several meetings in the lecture.

#### b. Design Stage (Designing)

##### 1) Selecting and Developing Media

To implement MEDIVA learning, three meetings were planned involving three MBK in the learning process.

##### 2) Selection of learning formats and models

MEDIVA is carried out using methods, learning media and teaching materials that have been prepared by lecturers. Format selection includes activities to design assessment tools that are tailored to the learning material, language suitability, and clarity of appearance. The Inclusive Education lecturer first explains to the students about MEDIVA so that the learning process runs smoothly.

c. The Develop Phase will be carried out in the fourth week of October 2023 to the second week of November 2023

The development stage is a very important stage in development research, researchers must prepare assessment tools according to the theory studies that have been collected during definition and design activities. At the development stage, an initial draft will be produced which will then go through an expert appraisal process and carry out development trials, specifically trials of development results will be carried out using limited class trials and field trials. The initial appearance of the application is as shown in Figure 1.



Figure 1. MEDIVA Inclusive Education

### 1) Expert Validation and Revision of Learning Innovation Products

In this learning innovation research, 3 experts and specialists in education were included, namely: Inclusive Education media expert (Mr. Teguh Prasetyo, M.Pd from FKIP lecturer at Djuanda University, Bogor), Inclusive Education Materials expert (Mrs. Dr. Rasmitadila, M.Pd . from a lecturer at FKIP, Djuanda University, Bogor), 1 field assistant (Septian, S.Pd.)

The results of expert validation with scale 4 can be briefly presented in table 3 and table 4 below

Table 3 Results of Media Expert Validation Assessment of Learning Innovation Development

Topic	Score	
	3	4
The presentation system shows clear coherence between one display and the next		X

Topic	Score	
	3	4
Access in program control of the application being developed		X
Balance of display layout in the application being developed	X	
Attractiveness of each display appearance		X
Practicality in using the developed application		X
The appearance of the animation/image displayed in each material is in accordance with the expected learning objectives		X
Visualization in the color composition of letters, images and the like with a background		X
The language used in the application developed uses communicative language		X

General comments and suggestions for improvement from Media Experts are suitable for use. The media developed is very good and suitable for use by slow learner students in tertiary institutions. This media has advantages in terms of objectives and learning materials that have been adapted to potential users/slow learner students. Furthermore, it is important to pay attention to ease of installation and security of user privacy. Finally, the research team can add a feedback column for users to get suggestions and input regarding the media being developed.

## CONCLUSION

The implementation of MEDIVA in inclusive classroom learning in higher education aims to improve the understanding and knowledge abilities of students with special needs. MEDIVA development was carried out using a 4-D model consisting of a definition stage, design stage, development stage and dissemination stage. As a result, MEDIVA has met the feasibility and a trial was carried out on inclusive education courses. MBK and non-MBK students share the same opinion with experts or experts that the MEDIVA learning innovations developed can be applied more widely to inclusive classroom learning.

## REFERENCES

- Amin, A., Ramalis, T. R., & Efendi, R. (2017). Analisis psikometri instrumen Force Concept Inventory (FCI) untuk menilai kemajuan belajar gaya dan gerak (KBGG). *WaPfi (Wahana Pendidikan Fisika)*, 2(1). <https://doi.org/10.17509/wapfi.v2i1.4849>
- Adri, H. T., Sesrita, A., & Sudjani, D. H. (2021, June). The online assessment in education course. *Journal of Physics: Conference Series*, 1918(5), 052086. IOP Publishing.

- Ross, A. O. (1974). *Psychological Disorders of Children*. McGraw-Hill Kogakusha Ltd.
- Burton, H. W. (1952). *The Guidance of Learning Activities*. Appleton Century-Crofts.
- Dimiyati, & Mudjiono. (1994). *Belajar dan Pembelajaran*. Direktorat Jenderal Pendidikan Tinggi, Depdikbud.
- Hestness, E., McGinnis, J. R., Breslyn, W., McDonald, R., & Mouza, C. (2014). Investigating science educators' conceptions of climate science and learning progressions in a professional development academy on climate change education. *NARST: A Worldwide Organization for Improving Science Teaching and Learning through Research*, 1-66.
- Jin, H., Zhan, L., & Anderson, C. W. (2013). Developing a fine-grained learning progression framework for carbon-transforming processes. *International Journal of Science Education*, 35(10), 1663-1697. <https://doi.org/10.1080/09500693.2013.782453>
- Helmanto, F., & Adri, H. T. (2020). DIDAKTIKA TAUHIDI. Rusmiaty, E., Adri, H. T., & Mawardini, A. Development of science learning media monographs (science monopoly) in human digestion system materials for elementary school. *Indonesian Journal of Social Research (IJSR)*, 2(3), 218-223.
- Lee, K., Maeng, S., Park, Y.-S., Lee, J.-A., & Oh, H. (2016). Validation of learning progressions for Earth's motion and solar system in elementary grades: Focusing on construct and consequential validity. *Journal of Korean Association for Science Education*, 36(1), 177-190.
- Siregar, L. K., & Supena, A. (2020). Student's learning disability in elementary schools in Tangerang: Identification, factors, and teachers' efforts. *Jurnal Inovasi Pendidikan Dasar*, 4(1), 23-29.
- Aina, M., & Natalia, D. (2019). Identifikasi kesulitan belajar pra akademik dan akademik. ResearchGate. <https://doi.org/10.13140/RG.2.2.29471.82085>
- Prayitno. (1995). *Materi Layanan Pembelajaran. Bahan Pelatihan Bimbingan dan Konseling (Dari Pola Tidak Jelas ke Pola Tujuh Belas)*. Depdikbud.
- Rasmitadila, Widyasari, T., Prasetyo, R., Rachmadtullah, A., Samsudin, A., & Suryanti, A. R. (2019). Design of instructional strategy model based on the brain's natural learning system (MS-SIPAO) in inclusive classrooms in higher education. *Universal Journal of Educational Research*, 7(11). <https://doi.org/10.13189/ujer.2019.0711113>
- Anggoro, S. (2017). Kajian mandiri science conceptual change melalui learning progressions dan representasi dalam pembelajaran sains. ResearchGate. <https://doi.org/10.13140/RG.2.2.15824.30724>
- Soeparman, S. (2014). Faktor-faktor yang mempengaruhi keberhasilan studi mahasiswa penyandang disabilitas. *Indonesian Journal of Disability Studies*, 1(1), 12-19. Retrieved from <http://ijds.ub.ac.id>
- Sugianto. (2021). *Diagnosis kesulitan belajar (DKB)*. Universitas Negeri

Yogyakarta: Diklat. Retrieved from  
<http://staffnew.uny.ac.id/upload/132319838/pendidikan/26-bab-6.pdf>

<https://doi.org/10.30762/sittah.v1i1.2071>

- Sumarni, D., Adri, H. T., Daningsih, D., Effanne, A., & Erlina, E. (2022). Meningkatkan kemampuan berbicara melalui metode pembelajaran simulasi pada siswa kelas V. *The JOER: Journal of Education Research*, 1(2), 134–142.
- Thiagarajan, S., Semmel, D. S., & Semmel, M. I. (1974). *Instructional Development for Training Teachers of Exceptional Children*. National Center for Improvement of Educational Systems.
- Uma. (2021). Psikologi pendidikan. Retrieved February 16, 2023, from <https://bakai.uma.ac.id/2021/12/06/pengertian-psikologi-pendidikan-serta-manfaat-dan-ruang-lingkupnya>
- Yuliani, S. H., Prasetyo, T., & Mawardini, A. (2022). Pengaruh metode mind mapping pada daur hidup di kelas empat. *SITTAH: Journal of Primary Education*, 1(1), 31–44.