



CIREBON INTERNATIONAL CONFERENCE ON EDUCATION AND ECONOMICS (CICEE)

STUDENT ACTIVITIES IN DIFFERENTIATED MATHEMATICS LEARNING WITH THE TEACHING AT THE RIGHT LEVEL (TARL) APPROACH

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Abstract

This study aims to describe the activity implementation of the Teaching at the Right Level (TaRL) approach through differentiated learning in Mathematics subject matter statistics in class VIII. This research is included in qualitative descriptive research. The data sources used in this study are the learning process, mathematics teacher informants, documents related to Teaching at the Right Level (TaRL) through differentiated learning, and field notes on the learning process using the Teaching at the Right Level (TaRL) approach through differentiated learning. Data collection techniques were observation, and document analysis. The results of this study show that the implementation of the Teaching at the Right Level (TaRL) approach through differentiated learning is in accordance with the stages of the Teaching at the Right Level (TaRL) approach, namely classifying the learning needs of students, developing differentiated learning designs and implementation, and reflecting and evaluating learning.

Keywords: Student Activities, TaRL, Differentiated Learning.

INTRODUCTION

Education transforms a country into a more advanced society, therefore education is very important for human life. A moral and educated generation can be formed through education. Everyone's potential can be realized through education, which can also help them live a better life and strengthen their cognitive, emotional, and psychomotor skills (Yuono, et al., 2023). The purpose of education is also to prepare individuals to benefit the country and the country. The learning process is one of the main aspects that determine the quality of education (Aminah,A, 2019).

Law Number 20 of 2003 concerning the National Education System explains that education functions to develop the potential of each individual in order to become human beings who believe in and devote themselves to God Almighty, have noble character, are healthy, knowledgeable, capable, creative, independent, and become democratic and responsible citizens (Elviya et al., 2023). Education also builds the personality and civilization of the nation, which has the benefit of educating the life of the nation. Education is a forum for planting cultural seeds in society based on the philosophy of Ki Hajar Dewantara (Bayumi et al., 2021). The formation of a society largely depends on education.

Through the Independent Learning Curriculum program, the Minister of Education and Culture changes the public's perception of each person's special skills and their ability to overcome obstacles that may threaten them in an effort to improve the quality of teachers as educators. The purpose of the Independent Learning Curriculum is to provide Pancasila students with access to an advanced, autonomous, sovereign, and personally satisfying education in Indonesia. The Independent Learning Curriculum emphasizes learning independence and humanizing humans (Patilima, 2021). The Independent Learning Curriculum emphasizes the value of making a meaningful contribution to improving the economic level of students in order to maximize their learning opportunities (Marisa, 2021). The Independent Learning Curriculum is believed to be a new innovation and breakthrough (Wulandari et al., 2023). One of the efforts that can be taken in providing facilities for students to learn independently is through the Teaching at The Right Level (TaRL) learning approach.

The Teaching at the Right Level (TaRL) method is a learning strategy that emphasizes student achievement and aims to facilitate mastery of topic competencies by students (Faradila, 2023). The TaRL method aims to assist students in developing their skills and expanding their knowledge. Teachers are one of the determining factors for success in the learning process and have knowledge of how to teach material well (Aminah et al. 2018). Teacher who has good knowledge and appropriate way of teaching will help student to easily build their understanding of material which is presented (Aminah et al., 2018). Teachers who use TaRL learning must treat students fairly by allocating resources based on their individual learning needs. TaRL can help students study learning materials with the best possible understanding development. TaRL is a learning method that considers students' abilities or success levels and helps students get orientation in order to excel.

A series of learning activities that take into account the needs of students is called differentiated learning (Fitra, 2022). Differentiated learning, according to Tomlinson's view, is education that provides assessment, service, and acknowledges the diversity of students through learning activities that are tailored to their interests, preferences, and readiness to learn (Elviya et al., 2023). Instead of learning individually, differentiated learning adjusts to the needs of students by prioritizing independent learning and taking advantage of existing learning opportunities (Marlina, 2019). Differentiated learning refers to teaching methods that allow many changes to meet the needs of each student. To help students obtain better learning outcomes, the modifications are related to their learning profile, interests, and readiness (Marlina, 2019). There are several objectives of implementing differentiated learning, including: 1) meeting the individual needs of students; 2) increasing student achievement; 3) increasing students' motivation and interest in learning; 4) develop social and collaborative skills; 5) increasing students' self-esteem; and 6) increasing student involvement (Purnawanto, 2023).

Differentiated learning can be applied in three ways, namely: 1) content differentiation, this is related to the teaching materials used or given to students in learning activities according to students' abilities, learning readiness, interests, and learning profiles; 2) process differentiation, which is related to the activities carried out in the implementation of learning; and 3) product differentiation, namely through consideration of students' work (Swandewi, 2021).

Previous research has shown that the use of TaRL is in line with Ki Hadjar Dewantara's idea of liberating education (Faradila, 2023). There have been several previous studies that have discussed the application of TaRL learning techniques. In addition, research conducted by (Emiliani, 2023) found that when the TaRL approach was used to teach chemistry in class X.6 at SMAN 5 Sinjai, students reported that learning became more

enjoyable and their understanding of the subject matter was improved. The TaRL learning technique through differentiation learning was not discussed in previous studies; Therefore, this study provides updates, especially related to the activities of student and teachers with the use of differentiated learning using Teaching at the Right Level (TaRL).

METHOD

This research is a qualitative descriptive research with a case study approach. Qualitative descriptive research is research that produces analytical procedures and does not use other quantitative methods. The data sources used in this study are: 1) the observed events are the process of implementing TaRL learning through differentiated learning; 2) the informants involved in this study are Mathematics teachers in grade VIII of one of the junior high schools in the city of Cirebon 3) documents in the form of teaching modules; and 4) field records obtained through observation.

The data collection techniques used are observation and analysis of documents. In this study, the author only observes, records, and has no effect on the ongoing learning process. The document analysis carried out by the author is by analyzing the teaching material documents used by the teacher. The data analysis technique in this study uses a four-step method, namely data collection, data reduction, data presentation, and conclusion drawn. At the data collection stage, the first step taken by the researcher is the learning process in the classroom with statistical materials. The next step of data analysis consists of data arrangement, data presentation, and drawing conclusions, the following is the data that has been obtained.

RESULTS AND DISCUSSIONS

1. Implementation of the Differentiated Learning in Mathematics Subjects

Activities In implementing the Teaching at The Right Level (TaRL) learning approach through differentiated learning, there are several stages that teachers must do, namely: 1) classifying the learning needs of students; 2) developing differentiated learning plans and their implementation, and 3) reflecting and evaluating learning.

1) Classifying the Learning Needs of Students.

The implementation of learning with the Teaching at The Right Level approach through differentiated learning requires mapping (profiling) the learning needs of students in order to make the right learning plan so that learning becomes more effective. Profiling or mapping students' learning needs can be done through diagnostic assessments. Diagnostic assessments need to be carried out so that teachers can find out the differences that students have in a class. Diagnostic assessments are carried out by means of cognitive and non-cognitive diagnostic assessments.

Diagnostic assessments map students' abilities in class quickly, to find out students' understanding. Non-cognitive diagnostic assessments are carried out by surveys using questionnaires given to students. The implementation of cognitive diagnostic assessment is carried out by analyzing students' scores related to understanding basic mathematics material. In the preliminary activity, teachers implement differentiated learning through the provision of diagnostic assessments in the form of pre-tests. Cognitive diagnostic assessments aim to determine initial competencies so that they can classify learning needs. The questions are related to basic mathematics materials. After mapping students through

diagnostic assessments. Teachers can implement differentiated learning by using three differentiated learning strategies, namely content differentiation, process differentiation, and product differentiation.

2) Developing a Differentiated Learning Plan and Its Implementation

The implementation of differentiated learning requires careful planning based on the learning needs of students. In this study, teachers design a Teaching at The Right Level (TaRL) approach through differentiated learning by using content and product differentiation strategies in response to the diversity of students' initial abilities and learning styles. This is based on the results of mapping students in class VIII A, one of the public junior high schools in the city, which shows that students have a diverse understanding of fantasy story text material and have different learning styles. Students in these classes have different cognitive abilities, some are low, medium and high. After the lesson plan is prepared, then the researcher applies it in the classroom.

In the implementation of learning activities, researchers use content-differentiated learning strategies by providing material through different ways according to students' needs, abilities, and learning interests. The provision of material begins with simple to complex material that makes it easy for students to be able to learn according to their level of understanding. Teachers also use diverse learning resources such as videos of students with different learning styles can be facilitated well during learning activities. By implementing content differentiation strategies in learning, teachers can create an inclusive environment and support students to develop according to their potential.

In the application of differentiated learning using product differentiation strategies, teachers free students to show their understanding of the learning material through different ways. Teachers provide different discussion practice questions at each cognitive level, adjusted questions are easy, medium and difficult which are given according to the cognitive level of each student. In addition, students also get meaningful learning so that they can develop a deep understanding of the material they are learning

3) Reflecting and Evaluating

Reflection and evaluation are things that must be done after the implementation of learning activities. Learner activity is to fill the reflection sheet and have a question answer session about evaluation at the end of the lesson. The implementation of reflection and evaluation provides teachers with an understanding of what is good and what must be improved during learning activities. Evaluation and reflection activities are not only carried out to students but also to teachers. Reflection involves an evaluation process of work results based on the stages of planning, implementation, and results. The results of the implementation of the Teaching at The Right Level (TaRL) learning approach through differentiated learning in class VIII A in one of the public junior high schools in the city of Cirebon have a positive impact on the learning motivation of students, students are more enthusiastic and actively participate in the implementation of learning activities.

2. Implementation of the Teaching at The Right Level (TaRL) Learning Approach in Mathematics Subjects

The application of the Teaching at The Right Level (TaRL) learning approach through differentiated learning in Mathematics Subjects with statistical materials is carried out with various activities. Teachers use a Problem Based Learning (PBL) based learning model. Each lesson has three syntax carried out by the teacher, namely preliminary activities, core activities, and closing activities.

1) Preliminary Activities

In the preliminary activity, the teacher started learning Mathematics by saying greetings and praying. Students respond by answering greetings. Then the teacher checks the attendance of students and conducts question and answer activities about previous learning. There were students who answered questions given by the teacher related to the material learned in the previous meeting. After that, the teacher conveyed the learning outcomes, learning objectives, and the scope of the material to be carried out. After that, the teacher continued the learning activities by presenting the lesson plan at the meeting that day. Then the teacher gave a triggering question related to the students' understanding of data, data presentation and statistics.

2) Core Activities

The teacher carried out the core learning activity by giving trigger questions to students related to statistics, namely "Have you ever heard of the word data?", "Have you ever known what statistics are?" then two students responded. The teacher gave appreciation in the form of praise to the two students, after giving a triggering question, the teacher began to explain the statistical material. After the teacher explained the material, the teacher asked the students questions and answers about the material that had been explained, and the students responded. The teacher gave examples of stories, examples of data presentation and data centralization. The next activity is included in the PBL-based learning syntax.

2.1 Planning

At the planning stage of the PBL-based learning model, teachers carry out activities to organize classes. In the activity of organizing the class, the teacher presented a problem by providing data presentation and data centering on statistics. The next activity is that the teacher forms into several groups, each group consists of 4-5 students according to the cognitive level of the students. In forming a group of teachers, they divide according to their cognitive level. After forming a group consisting of 4-5 people, students are directed to gather according to their respective group members. Grouping based on ability level provides convenience for teachers in providing intervention to students through the TaRL approach. For students who are in the slow learner phase, teachers provide guidance or questions in the form of stimuli to stimulate students' understanding. Students listen to the instructions given by the teacher and agree on a time to collect project assignments. At the planning stage, students explore problems by analyzing the data on the given questions. The next activity, after the students analyzed, the students divided the tasks carried out by each group member equally.

2.2 Implementation

At the implementation stage, teachers accompany students in completing LKPD. Teachers play the role of motivators and mediators who provide encouragement to students in order

to increase the development of students' potential. In addition, teachers also act to provide solutions in discussion activities carried out by students. Discussion activities assisted by the Teaching at The Right Level approach, allow students to learn according to their capacity so that there is no gap between students' initial knowledge and the material to be learned. In addition, students also have the opportunity to interact, ask questions, express opinions, provide responses and explain their ideas.

2.3 Reporting

At the reporting stage, teachers conduct an assessment of the results of the products produced by students. Meanwhile, students made presentations about the results of the discussions that had been made. The teacher conducted an assessment of the results of the LKPD discussion. In addition, students also presented the results of the LKPD that they had made by explaining the final results of the data centering and pictures from the data presentation they had made earlier.

3) Closing Activities

At the reporting stage, teachers conduct an assessment of the results of the products produced by students. Meanwhile, students made presentations about the results of the discussions that had been made. The teacher conducted an assessment of the results of the LKPD discussion. In addition, students also presented the results of the LKPD that they had made by explaining the final results of the data centering and pictures from the data presentation they had made earlier.

CONCLUSION

Student activities in the implementation of the Teaching at The Right Level (TaRL) learning approach through differentiated learning in statistics learning in grade VIII, students who have above-average abilities can respond to teacher questions or give opinions well. During the discussion activity, there were several students who did not understand the instructions in the LKPD, the teacher provided guidance and direction in completing the LKPD. In the Teaching at The Right Level learning activity carried out by teachers, they not only focus on a few students who have above-average abilities, but also pay attention and interact with all students with the aim that students who have average and below-average abilities have enthusiasm and enthusiasm to participate in learning. Based on the implementation of the TaRL learning approach through differentiated learning, it can be seen that student involvement during the learning process is monitored better. This is because the TaRL approach can provide facilities for students to participate in learning activities. Learning with the Teaching at The Right Level approach can help create an inclusive and responsive learning environment to students' learning needs. Based on the findings that have been presented previously, it can be concluded that the researcher as a teacher has applied a learning approach in accordance with the stages, namely: 1) classifying the learning needs of students; 2) developing differentiated learning plans and their implementation, and 3) reflecting and evaluating learning.

REFERENCES

Aminah.N, Wahyuni I. (2019). The Ability of Pedagogic Content Knowledge (PCK) of Mathematics Teacher candidate bases on multiple intelligent.J.Phys.:Conf.Ser.1280 042050.doi:10.1088/1742-6596/1280/4/042050.

Aminah,N., Wahyuni,I.(2018). Kemampuan Pedagogic Content Knowledge (PCK) Calon Guru Matematika Pada Program Pengalaman Lapangan di SMP/ SMA Negeri Kota Cirebon. *Jurnal Nasional Pendidikan Matematika (JNPM)*, 2(2), 259-267.

Andajani, K. (2022). *Modul Pembelajaran Berdiferensiasi*. Mata Kuliah Inti Seminar Pendidikan Profesi Guru, 2.

Bayumi, Chaniago, E., Fauzie, Elias, G., Hapizoh, & Zainudin (2021). *Penerapan Model Pembelajaran Berdiferensiasi*. Yogyakarta: Deepublish

Elviya, D. D., & Sukartiningsih, W. (2023). Penerapan Pembelajaran Berdiferensiasi Dalam Kurikulum Merdeka Pada Pembelajaran Bahasa Indonesia Kelas Iv Sekolah Dasar Di Sdn Lakarsantri 1/472 Surabaya. <https://Ejournal.Unesa.Ac.Id/Index.Php/Jurnal-Penelitian-Pgsd/Article/View/54127>, 11(8), 1–14.

Emiliani, Sugiarti, & Temawati. (2023). Implementasi Pembelajaran Berdiferensiasi Berdasarkan Gaya Belajar Peserta Didik Dengan Menggunakan Pendekatan TaRL. *Journal of Teacher Professional*, 2(Agustus), 217–227.

Faradila, A., Priantari, I., & Qamariyah, F. (2023). Teaching at The Right Level sebagai Wujud Pemikiran Ki Hadjar Dewantara di Era Paradigma Baru Pendidikan. *Jurnal Pendidikan Non Formal*, 1(1), 10. <https://doi.org/10.47134/jpn.v1i1.101>

Fitra, D. K. (2022). Pembelajaran Berdiferensiasi dalam Perspektif Progresivisme pada Mata Pelajaran IPA. *Jurnal Filsafat Indonesia*, 5(3), 250–258. <https://doi.org/10.23887/jfi.v5i3.41249>

Marisa, M. (2021). Inovasi Kurikulum “Merdeka Belajar” di Era Society 5.0. *Santhet: (Jurnal Sejarah, Pendidikan Dan Humaniora)*, 5(1), 72. <https://doi.org/10.36526/js.v3i2.e-ISSN>

Marlina. (2019). *Panduan Pelaksanaan Model Pembelajaran Berdiferensiasi di Sekolah Inklusif*. 1-58.

Patilima, S. (2022). Sekolah Penggerak Sebagai Upaya Peningkatan Kualitas Pendidikan. *Prosiding Seminar Nasional Pendidikan Dasar*, 0(0), 228–236. <http://ejurnal.pps.ung.ac.id/index.php/PSNPD/article/view/1069>

Swandewi. (2021). Implementasi Strategi Pembelajaran Berdiferensiasi Dalam Pembelajaran Teks Fabel Pada Siswa Kelas VII H SMP Negeri 3 Denpasar. *Jurnal Pendidikan DEIKSIS*, 3(1), 248–253.

Thian Vizar Putra Yuono, A., & Nurpratiwiningsih, L. (2023). Implementasi Pembelajaran Berdiferensiasi Pada Mata Pelajaran Bahasa Indonesia Kelas II di SDN Klampok 01. *Jurnal Pendidikan : SEROJA*, 2(5), 282–288. <http://jurnal.anfa.co.id/index.php/seroja>