

Pedagogical Competencies of Pre-Service Teacher Professional Education in Understanding and Implementing the Teaching at the Right Level (TaRL) Approach

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Abstract: Pedagogical Competencies of Pre-Service Teacher Professional Education in Understanding and Implementing the Teaching at the Right Level (TaRL) Approach.

Objective: The objective of this research to describe students' understanding of TaRL and their ability to implement the TaRL approach at school. **Methods:** This type of research is quantitative survey research. This research was carried out at the Islamic University of Malang with the research population being TPE Pre-service students class 1. The sample for this research was 71 students, all of whom were taken from the research population. The data collected in this research is in the form of the results of filling out a questionnaire. The questionnaire used in this research is valid and reliable. Next, the data obtained was analysed descriptively. **Findings:** The results of the research show that the average student understanding of the TaRL approach is 4.50 and the average ability to apply TaRL in learning is 4.15, which means the understanding and implementation of the TaRL approach is in the very good category. **Conclusion:** From the research results, it can be concluded that students can understand the TaRL approach well and can apply it in learning at school. Recommendations for further research are analysing the obstacles and solutions made by students in implementing the TaRL approach.

Keywords: pedagogical competency, TPE, TaRL approach, differentiated learning.

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INTRODUCTION

Teacher pedagogical competence is one of the important competencies that prospective teacher students must have, especially students in Teacher Professional Education (TPE) study programs. This is because the achievement of competency by students cannot be separated from the teacher's professional duties (Setiawan & Syaifuddin, 2020b). Minister of National Education Regulation number 16 of 2007 also explains that teachers must master personal,

social, pedagogical and professional competencies. Apart from that, research results show that teacher competence has a significant influence on student learning achievement (Setiawan, 2020c). Teachers' pedagogical skills influence the quality of education (Fabelico & Afalla, 2023) as well as the quality of education (Ningtiyas & Jailani, 2018). The results of other research show that there is a positive relationship between teachers' conceptions of teaching and learning and pedagogical competence (entürk &

Zeybek, 2019). Pedagogical competence is a guiding aspect of curriculum implementation in the classroom (Fakhrudinova et al., 2020). As a teacher, you must also continually develop your pedagogical and professional competencies through Continuous Professional Development (Setiawan & Ayuningtyas, 2022). Thus, it can be said that pedagogical competence is important for teachers to have, in order to improve the quality of an educator in teaching in the classroom.

Pedagogical competence can be interpreted as a teacher's knowledge about how to convey knowledge and skills to students (Hanifah et al., 2019). Teacher pedagogic competence is related to students' attitudes towards learning at school (Adegbola & Funmi, 2019). Pedagogical competence can be considered as a professional or personal characteristic of a teacher that guarantees high scientific and pedagogical activity (Fakhrudinova et al., 2020). From various expert opinions, the definition of pedagogical competence in the context of this research is the ability to teach or convey material to students. One of the pedagogical competencies is knowing the various approaches used in learning. This can be seen from the Regulation of the Minister of National Education of the Republic of Indonesia Number 16 of 2007 concerning Academic Qualification Standards and Teacher Competencies, namely "applying various approaches, strategies, methods and learning techniques that educate creatively in the subjects taught". Therefore, one of the approaches taught in pre-service PPG learning activities is the Teaching at the right level (TaRL) approach.

The TaRL approach is a learning approach that categorizes students into learning levels which aims to provide teaching that is specifically targeted at children's educational needs (Turkson et al., 2020). This TaRL approach can be targeted at students with the lowest learning levels so that

it is more similar to remedial education, or at all children at various learning levels. TaRL is one of the approach options for overcoming the problem of Learning Loss due to the emergence of the COVID-19 pandemic (Muin, 2022). TaRL is a learning approach that does not refer to the class, but refers to the gaps in understanding that occur in the class (Muin, 2022). The research results show that the TaRL approach is very appropriate to use in the learning process to meet various levels of student ability and material content (Amalia et al., 2024). The research results also show that the TaRL approach helps teachers adjust students' ability levels, so that classroom learning can run smoothly (Asiza et al., 2023). This TaRL approach is in accordance with Ki Hadjar Dewantara's thoughts (Faradila et al., 2023). Thus teachers must know students' prior knowledge, their interests, and students' learning styles. Because students' abilities differ from each other in one class, teachers must serve students based on their characteristics. Teachers must also know the strategies, learning materials, learning resources and learning outcomes that are tailored to the needs of students (Muin, 2022).

Various researchs on the TaRL Approach, namely previous research which aims to improve student learning outcomes with the TaRL approach based on a problem-based learning model, shows that student learning outcomes have increased, where 85% of students scored above the KKM (Listyaningsih et al., 2023). Previous research also aimed to improve learning outcomes, where in cycle 2 it was found that 85% of students scored above the KKM (Anggriani et al., 2023). The results of previous research also showed that the achievement of learning completeness was 74.36% (Avianti et al., 2023). The results of other research show that learning completeness in cycle II was 95.79% (Cahyono, 2022). The results of other research also show that applying the TaRL approach can improve students' writing skills in cycle 2 by 74% (Colle

et al., 2023). In addition, the TaRL approach combined with Discovery Learning can increase motivation and learning outcomes (Edizon & Zan, 2023). The research results also show that the TaRL approach combined with mind mapping can improve critical thinking skills (Fauzi et al., 2023).. The TaRL approach can also improve reading skills, where in cycle II the average reading ability was 81.36 (Muammar et al., 2023). The research results also showed that there was an increase in students' interest in learning classically by 95% in the high category (Nabella et al., 2023). From the various research results, it was concluded that the TaRL approach can increase interest, reading ability, writing ability and learning outcomes.

The importance of the TaRL approach means that Pre-Service Teacher Professional Education learning also equips students with TaRL, especially in Differentiated Learning courses. There are two abilities that are emphasized in students when taking the Differentiated Learning course, namely being able to understand the TaRL approach well and being able to apply the TaRL approach at school when carrying out practical learning activities at partner schools. Understanding TaRL and successful implementation of TaRL is an indicator of the success of learning policies at TPE (especially in Differentiated Learning courses). Therefore, this research aims to determine the level of students' understanding of the TaRL approach and their level of ability to apply the TaRL approach.

■ **METHOD**

Participants

The population in this study were PPG Prajab students at the Islamic University of Islam Malang in 2022. The sample for this study was 71 respondents from Pre-Service TPE students consisting of 25 students from the Indonesian language study program, 26 students from the English language study program, and 20 students

from Mathematics Education. The sample selection technique in this research is random sampling. Where students fill out a questionnaire about their understanding regarding TaRL the implementation of TaRL and the obstacles experienced when implementing TaRL.

Research Design and Procedures

This type of research is quantitative research with a survey approach. Where the survey approach aims to find out someone's opinion (Creswell, 2012). In this research, survey research was conducted to determine students' understanding of the TaRL approach, students' ability to apply the TaRL approach and students' opinions regarding obstacles in implementing the TaRL approach. This research was carried out in the Odd Semester of the 2023/2024 Academic Year. The location of this research is at the Islamic University of Islam Malang.

The data collection procedure in this research consists of 3 steps. The first step is to create a Google form from the instrument. The second step is to provide the Google form link to students and ask students to fill in the Google form according to actual conditions regarding understanding of TaRL, success in implementing TaRL, and obstacles in implementing TaRL when carrying out practical learning activities. The third step is to change the data from the first instrument into interval data 1-5, where a score of 5 is for strongly agree, a score of 4 is for agree, a score of 3 is for neutral, a score of 2 is for disagree, and a score of 1 is for strongly disagree. Meanwhile, data from the second instrument is in the form of survey results, and data from the third instrument is in the form of opinions about obstacles in implementing TaRL.

Instruments

The instruments developed in this research consist of two types of instruments. The first instrument is a closed questionnaire which is used

to determine students' understanding of the TARL approach which is taken from TARL approach indicators. This first instrument consists of 35 statement items developed from indicators of understanding of TaRL (see Table 1). Each statement uses 5 answer choices, namely Strongly Agree (SA), Agree (A), Neutral (N), Disagree

(D), and Strongly Disagree (SD). The second instrument is a closed questionnaire which is used to determine students' success in implementing the TARL Approach in learning at school. This second instrument consists of 10 closed statements (see Table 2).

Table 1. Indicators of understanding of the tarl approach

No.	Indicators	Sub Indicators of understanding of TaRL
1	Understanding of the concept of the TaRL Approach	1.1. Can carry out diagnostic tests of students' initial abilities 1.2. Can bridge and accommodate differences found 1.3. Can understand students' needs and interests in the learning process 1.4. Developing the potential possessed by students 1.5. Provide an opportunity to read before starting learning
2	Understanding of the preparation of Learning Planning based on the TaRL Approach	2.1. Dompiling learning tools by considering student characteristics in the form of interests, needs and learning styles. 2.2. Accommodate different abilities in learning planning 2.3. The teaching materials prepared can increase learning motivation 2.4. Develop teaching materials using various media (for example, images, writing, video and audio) 2.5. Adapt the material to the student's ability level
3	Understanding the application of the TarL approach in learning	3.1. Form study groups based on student abilities 3.2. Provide opportunities for students to actively participate in decision making related to learning 3.3. Encourage students to come up with their own questions and ideas 3.4. Provide a variety of resources and materials to help students learn according to their needs 3.5. Effective in communicating with students, listening to students' questions and input
4	Understanding the application of the TarL approach in learning	4.1. Use various evaluation methods (e.g. tests, assignments, or projects) to measure student understanding 4.2. Provide constructive feedback to improve student performance 4.3. Using evaluation results to identify individual student needs 4.4. Adjust learning based on evaluation results 4.5. Give assignments according to students' wishes

Furthermore, there are 3 steps in implementing TaRL, namely: 1) carrying out an initial assessment of students to determine the characteristics, potential and needs of students; 2) develop an appropriate learning process through lesson plans; 3) educate students

according to their level of ability, and assess students to determine their progress (Muin, 2022). From these three steps, indicators are obtained that are used to determine the implementation of the TaRL approach which can be seen in Table 2.

Tabel 2. Indicators for implementing the TaRL approach

No.	Indicators	Sub Indicators for Implementing the TaRL Approach.
1	Preparing for TaRL learning	1.1. Can plan learning activities based on the TaRL approach well 1.2. Can determine the level of student ability before implementing the TaRL approach 1.3. Can identify student learning needs to adapt material.
2	Implementing the TaRL approach	2.1. Often uses the TaRL approach in learning 2.2. Adapt learning materials to the level of understanding of TaRL. 2.3. Adapting learning to evaluation results
3	Involving students in learning	3.1. Involving students in the learning process 3.2. Collaborate with fellow teachers in implementing TaRL. 3.3. Provide feedback to students about the effectiveness of TaRL learning
4	Carrying out assessments in the TaRL approach	4.1. Can measure the progress of student learning outcomes

Before this instrument was used to collect data, the first instrument was tested for validity and reliability with 30 pre-service PPG students as respondents. The validity test in this research uses product moment correlation with the help of SPSS. The significance level for testing the validity of the instrument in this study was 5%. Next, the results of the validity test in the form of r-counts are compared with r-tables (where r-tables from 30 respondents are 0.361). If r-count > r-table, then the instrument is valid. The results of the instrument validity test show that there are 34 valid statement items, where the results of r-count > r-table. Furthermore, the 34 statements were also tested for reliability. The reliability test in this research used the Cronbach's Alpha Test Technique assisted by SPSS. If the Cronbach's Alpha test results are > 0.60, then it can be said that the instrument is reliable. The value of Cronbach's Alpha is more than 0.60 namely 0.966, so the 34 instruments are reliable. Thus, the first instrument consisting of 34 statements was used for data collection.

Data Analysis

Data analysis in this study used descriptive statistics, namely data from the first instrument was analyzed by determining the average student understanding of the TaRL Approach. Meanwhile, the analysis of the second research instrument is to determine the percentage. Analysis of data from student opinions by coding these opinions related to the obstacles experienced by students in implementing the TaRL approach. Next, the data from the analysis is categorized into five categories. This categorization is based on the assessment scale of this instrument, namely a scale of 1-5. From this scale, the class length is obtained, namely 4, then 4 divided by 5 = 0.8. By using an interval of 0.8, 5 categories are obtained which can be seen in Table 3.

Table 3. Categories of student understanding of the TaRL approach

No.	Average	Information
1	1.00 – 1.80	Not Very Good
2	1.81 – 2.60	Not Good
3	2.61 – 3.40	Neutral
4	3.41 – 4.20	Good
5	4.21 – 5.00	Very Good

■ RESULT AND DISCUSSION

Understanding the Teaching at the Right Level (TaRL) Approach

The following are the survey results from 71 pre-service TPE student respondents

consisting of 25 Indonesian language study program students, 26 English language study program students, and 20 Mathematics Education students regarding pedagogic competence which can be seen in Table 4.

Table 4. Average student understanding of the TaRL approach

No.	Indicators of Understanding of TaRL Approach	Average of Understanding		
		ILLI	EI	ME
1	Understanding of the concept of the TaRL approach	4.68	4.34	4.63
2	Understanding of the preparation of learning planning based on the TaRL Approach	4.49	4.23	4.47
3	Understanding the application of the TaRL approach in learning	4.63	4.41	4.57
4	Understanding of the assessment of TaRL approach	4.59	4.38	4.60
Average		4.59	4.34	4.57

Information:

ILLI: Indonesian Language and Literature Education

EE: English Education

ME: Mathematics Education

From Table 4 it is found that the average understanding of the TaRL approach from each study program student is in the very good category. This means that TPE students have been able to understand TaRL's approach very well. If we look in general we also get an average of

4.50 which is also in the very good category. In more detail, the results of descriptive statistical analysis regarding students' understanding of each study program regarding the TaRL approach can be seen in Table 5.

Table 5. Descriptive statistical test results regarding student understanding

Study Program	N	Range	Min	Max	Mean	Std. Deviation	Variance	Skewness	
					Statistic			Statistic	Std. Error
ILLI	25	1.21	3.79	5.00	4.6092	.38100	.145	-.676	.464
EE	26	1.79	3.21	5.00	4.3558	.48365	.234	-.420	.456
ME	20	1.21	3.79	5.00	4.5685	.37807	.143	-.803	.512

From Table 5 it can be seen that the skewness values of all study programs are negative, this means that most of the distributed values are in low values. Apart from that, we can see from the Skewness value which shows that more ME students' understanding scores are in the low category than ILLI and EE. Standard

deviation is used to determine how close the distribution of a sample's data is to the average value. Each study program has a small standard deviation value this means that the value of each data is less variable. This is because the data only has an average of 1 to 5. Likewise, the variance value shows small, which means that the data is

less varied, or close to the average. So it can be concluded that this average shows actual data that students have almost the same understanding abilities as each other in understanding the TaRL approach.

The first finding is that students' understanding of the TaRL approach is very good. This can be seen from the average understanding of the TaRL approach, which is 4.50. Understanding the TaRL approach is used as a basis for implementing the TaRL approach correctly. Previous research results show that misunderstanding is a factor causing errors (Setiawan, 2020a, 2021, 2022). However, there are indicators that understanding of the TaRL approach still needs to be improved. This is because the achievements of these indicators are below the general average. The indicator that needs to be improved for all study programs is understanding the preparation of learning plans based on the TaRL approach. The results of this

research are in accordance with the results of previous research which shows that teachers still have difficulty in preparing learning tools (Setiawan, 2020b; Setiawan & Syaifuddin, 2020a). Therefore, in TPE learning, it is necessary to emphasize making learning plans based on the TaRL approach. Furthermore, if we look at Table 6, it is found that learning in the English study program places more emphasis on each indicator of understanding of the TaRL approach. This is because the average of each indicator is below the general average.

Implementing of the TaRL Approach in Learning

Next, the second instrument analysis is about the application of the TaRL approach in learning at school during guided and independent learning practice activities. The average results of implementing the TaRL approach in learning can be seen in Table 6.

Table 6. Average implementing of the TaRL Approach in learning

No.	Indicators of Implementing of TaRL Approach	Average of Implementing		
		ILLE	EE	ME
1	Preparing for TaRL learning	4.07	3.73	4.22
2	Implementing TaRL learning	4.41	4.03	4.45
3	Involving students in learning	4.31	3.91	4.37
4	Carrying out assessments in the TaRL approach	4.08	3.88	4.35
Average		4.22	3.89	4.35

Information:

ILLE: Indonesian Language and Literature Education

EE: English Education

ME: Mathematics Education

From Table 6, it is found that the average application or implementation of the TaRL approach from ILLE and ME study program students is in the very good category and the average from EE study program students is in the good category. This means that TPE students have been able to implement the TaRL approach

very well and well. If we look in general we also get an average of 4.15 which is also in the very good category. In more detail, the results of descriptive statistical analysis regarding students' understanding of each study program regarding the TaRL approach can be seen Table 7.

Table 7. Descriptive statistical test results of the implementation of the TaRL approach

Study Program	N	Range	Min	Max	Mean	Std. Deviation	Variance	Skewness	
					Statistic			Statistic	Std. Error
PBSI	25	2.00	3.00	5.00	4.2164	.52341	.274	-.542	.464
PBI	26	2.08	2.92	5.00	3.8943	.64627	.418	.239	.456
PMAT	20	1.25	3.75	5.00	4.3465	.38497	.148	.138	.512

From Table 7 it can be seen that the skewness value of the ILLI study program is negative, this means that most of the distributed values are in low values. Meanwhile, the skewness value of the EE and ME study program is positive, this means that most of the distribution scores are in the high range. Apart from that, we can see from the Skewness value which shows that more ILLI students' application ability scores are in the low category than ILLI and ME. Each study program has a small standard deviation value from the average this means that the value of each data is less variable. This is because the data only has an average of 1 to 5. Likewise, the variance value shows small, which means that the data is less varied, or close to the average. So it can be concluded that this average shows actual data that students have almost the same application abilities as each other in applying the TaRL approach. In particular, many EE and ME study program students have higher averages than ILLI.

The second finding is that the average ability to apply the TaRL approach of the ILLE and ME study programs is in the very good category and for the EE study program the average ability to apply TaRL is in the good category. Apart from that, the general average shows that the ability to apply the TaRL approach is in the very good category, namely 4.15. There are two indicators of implementing the TaRL approach that need to be improved by ILLE study program students,

namely preparing for TaRL learning and carrying out assessments in the TaRL approach. Meanwhile, the EE study program needs to improve all indicators for implementing the TaRL approach. The Mathematics education study program is very good in all indicators of TaRL implementation. Various research results show that the correct application of the TaRL approach can improve learning outcomes (Nabella et al., 2023; Peto, 2022; Pratama et al., 2024; Rimang et al., 2023; Turkson et al., 2020; Ulfah et al., 2023). Therefore, it is important for TPE students to be trained in the correct application of the TaRL approach. So that when students apply the TaRL approach it can run well.

Furthermore, the comparison of understanding and application of the TaRL approach can be seen in Figure 1. From Figure 1, it can be seen that the average understanding of the TaRL approach is higher than the average ability to apply it in learning. This can be interpreted that students' understanding is better than applying the TaRL approach in learning. These findings recommend further research, namely analyzing the relationship between understanding and ability to apply the TaRL approach as well as analyzing further the obstacles or challenges faced by students when applying the TaRL approach in learning. This further research is useful in overcoming the obstacles experienced by teachers or students when implementing the TaRL approach.

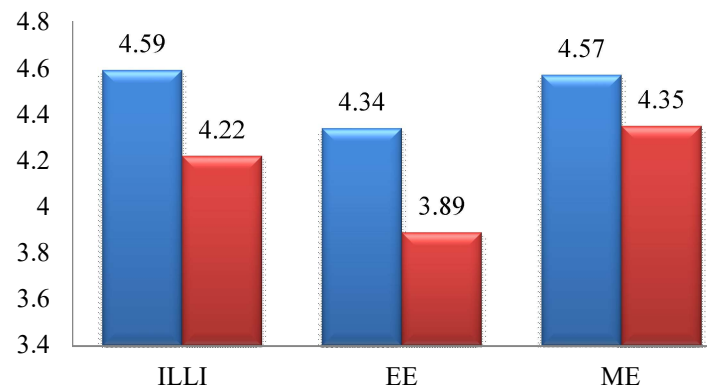


Figure 1. Comparison of average understanding and implementation of the TaRL approach

The results of this research contribute to developing the learning carried out in the Teacher Professional Education study program, namely that the learning carried out in the Teacher Professional Education Study Program has equipped students very well regarding the understanding of the TaRL approach and the implementation of the TaRL approach in schools. The third finding is that students' understanding of TaRL is better than their ability to apply the TaRL approach in learning. It can be seen that the average ability to apply is 4.15, lower than the average understanding of the TaRL approach, namely 4.50. This can mean that students still have difficulties or obstacles in implementing the TaRL approach. So learning on campus is not enough just to provide an understanding of the TaRL approach, but students are also given practical learning (micro teaching).

■ CONCLUSION

From the research results, it was concluded that TPE Pre-Service students' understanding of the TaRL approach was very good and their ability to apply the TaRL approach in learning at school was also very good. There are 3 important findings in this research, namely: 1) students' understanding of the TaRL approach is very good. 2) The ability to apply the TaRL approach is in the very good and good categories. 3) Students'

understanding of TaRL is better than their ability to apply the TaRL approach in learning.

This research is only limited to analyzing the understanding and application of the TaRL approach in learning. However, the results of this research contribute in providing an overview or description of the understanding and ability to apply TaRL in learning. As further research, researchers recommend testing the relationship between understanding TaRL and the ability to implement TaRL. Apart from that, further research can analyze challenges and obstacles and how to overcome them in implementing the TaRL approach in learning. The results of this research will be useful in contributing to ways to overcome obstacles in implementing the TaRL approach in learning. Meanwhile, the recommendation for learning activities is that lecturers place more emphasis on indicators of understanding and ability to apply the TaRL approach in learning carried out in professional teacher education.

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