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## Development of quizizz application assessment based on the TaRL approach in learning to identify the main ideas

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### Abstract

This research aims to explain how the Quizizz application, used with the Teaching at the Right Level (TaRL) approach, was designed and tested to help fourth-grade students improve their reading comprehension, specifically in finding the main idea of informative texts. The method used is research and development (R&D) with the Borg & Gall model, with trials on nine students (small group) and 26 students (large group). This assessment integrates local wisdom content in informative text with gamification through the Quizizz application. The validation results show that the assessment is highly feasible, scoring 88.5 (media) and 89.7 (material). The effectiveness of the assessment is evidenced by an increase in the average pre-test score from 37.69 to 86.19 in the post-test and student completeness from 0% to 100%. Statistical tests showed significant differences before and after using the assessment, with an N-Gain score of 0.827908 (high category), proving their effectiveness in improving students' reading comprehension. This assessment is an evaluation tool that encourages active student involvement.

### Keywords

Main idea, Quizizz application assessment, reading comprehension, TaRL approach

### Article History

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## Introduction

Education has a crucial role in human life. Humans cannot separate themselves from the educational process of acquiring knowledge as they continue to develop. [Shavkidinova et al. \(2023\)](#) asserted that education is an essential component of human existence and a key element in the growth of individual potential. One important aspect of education is literacy, which improves students' understanding and processing of information. Therefore, various efforts are needed to improve literacy skills so the next generation can develop better.

Reading comprehension is the foundation for students' academic success at the elementary school level. Based on the results of observations and interviews conducted by researchers in the fourth-grade of SD Negeri Deles Batang Regency, many students have difficulty understanding the content of informative texts. This can be seen from the low scores on reading comprehension tests and students' limitations in explaining or analyzing informative texts. The contributing factors include the lack of variety in learning methods, limited media, and minimal student involvement in the learning process. Learning is also still teacher-centred, so students' active participation is not ideal. In addition, learning still faces challenges such as limited use of texts, lack of contextual teaching materials, and paper-based assessments. [Stupple et al. \(2020\)](#) claimed that assessment is a tool used to gauge how well students are learning through attitude, knowledge, and skills. Therefore, an innovative solution is needed to improve the effectiveness of reading comprehension learning.

Applying technology in learning assessment is one such approach. Quizizz, as a gamification-based learning platform, can be a tool for increasing student engagement and motivation. According to [Nurfadila et al. \(2024\)](#), Quizizz is a game-based learning platform designed to assist teachers in creating interactive quizzes in real-time or as individual assignments. The platform provides interactive quizzes with features such as points, ratings, and instant feedback, thus making learning more engaging. In addition, applying the Teaching at the Right Level (TaRL) approach can help adjust learning materials to students' basic abilities so that the learning process is more effective and meets the needs of everyone. According to [Afandi et al. \(2024\)](#), Teaching at the Right Level (TaRL) is a method that refers to students' achievement and ability level, applied through learning analysis and diagnostic assessments.

The TaRL approach can be a solution to developing innovative assessments. According to [Ismail et al. \(2024\)](#), this approach emphasizes research-based learning, where teachers can systematically design, implement, and evaluate learning. Integrating the TaRL approach with technology such as Quizizz creates an excellent opportunity to increase student engagement in learning. Quizizz has a paper mode feature that allows the implementation of offline assessments, so it can still be used in schools with limited access to technology or Internet networks. Quizizz application is a creative, innovative, challenging, and fun game that can foster student learning motivation ([Zhang & Crawford, 2024](#)).

The Quizizz application assessment is expected to help fourth-grade students of SD Negeri Deles Batang Regency more easily understand reading, especially in identifying the main idea of informative text. This lesson aims to help students develop reading comprehension skills by finding the main idea through a critical analysis-based strategy.

Identifying the main idea in informative text means finding the essence of reading by analyzing text structure and information presentation patterns, which aims to systematically improve students' reading comprehension.

The purpose of this research is to describe the design of the Quizizz application assessment based on the Teaching at the Right Level (TaRL) approach to the material of identifying the main idea of informative text for the fourth-grade students of SD Negeri Deles Batang Regency, describe the results of the validation of the feasibility test of the Quizizz application assessment based on the Teaching at the Right Level (TaRL) approach on the material of identifying the main idea of informative text for the fourth-grade students of SD Negeri Deles Batang Regency, and describe the effectiveness of the Quizizz application assessment based on the Teaching at the Right Level (TaRL) approach on the material of identifying the main idea of informative text for the fourth-grade students of SD Negeri Deles Batang Regency.

## **Methodology**

This research used the research and development (R&D) method to create and test how well the Quizizz application helps fourth-grade students at SD Negeri Deles Batang Regency learn to identify the main idea of informative texts based on Teaching at the Right Level (TaRL). [Sugiyono \(2021\)](#) stated that the R&D method produces and improves a product through systematic steps, from problem identification to product testing.

The development model used in this research adapted the stages of research and development according to Borg and Gall. However, given the limited time and cost, this research will only be carried out until the product trial stage. The steps taken in this research include (1) identification of potential problems by conducting observations and interviews to identify problems in reading comprehension learning in the fourth-grade of SD Deles, (2) data collection by collecting data related to the needs of digital assessments through questionnaires and literature studies, (3) product design, by developing Quizizz application assessments based on the TaRL approach, (4) design validation, which involves testing the product's feasibility with the participation of media experts and material experts, (5) design revision, by improving product design based on expert input, (6) product trial, by conducting product trials in small groups to see initial effectiveness, (7) product revision, by making product improvements based on the results of the initial trial, (8) trial use: testing the product on a large group to measure its effectiveness in improving students' reading comprehension.

This research was conducted in two schools, SD Negeri Deles 01 and SD Negeri Deles 03, Batang Regency, Central Java. The research took place during the even semester of the 2024/2025 academic year, encompassing three stages: preparation, implementation, and completion. The subjects in this research were fourth-grade students of SD Negeri Deles 01 and SD Negeri Deles 03. The small group trial involved nine students from SD Negeri Deles 03, while the large group trial involved 26 students from SD Negeri Deles 01. The sampling technique was carried out with a purposive sampling approach, where the small group consisted of students with various levels of reading comprehension (high, medium, and low).

This research used several ways to collect data, including: (1) tests (pre-test and post-test) to see how much students' reading skills improved before and after using the Quizizz

application; (2) observation to check how involved students were in learning with Quizizz assessments; (3) interviews to get more information from teachers about how effective the assessment was; (4) questionnaires to gather feedback from students and teachers, as well as validation from media and material experts; and (5) documentation to back up the research findings with photos, test results, and evaluation notes.

The data obtained were analyzed quantitatively and qualitatively, namely: (1) normality test, used to determine whether pre-test and post-test data are normally distributed; (2) paired sample T-test to determine the significant difference between pre-test and post-test scores; (3) Wilcoxon test, used as an alternative if the data are not normally distributed; and (4) n-gain test to measure the increase in student learning outcomes after using TaRL-based Quizizz assessment.

## Findings

### *The design of quizizz assessments is based on the teaching at the right level (TaRL) approach*

The development of Quizizz assessment products based on the Teaching at the Right Level (TaRL) approach is adjusted to the interview and the teacher needs questionnaire results. Before designing the teacher needs questionnaire, the researcher conducted a structured interview with the fourth-grade teacher of SD Negeri Deles regarding learning problems. The interview results indicate that many fourth-grade students struggle to understand the content of informative texts, and the insufficient use of learning assessments by teachers in Indonesian classes contributes to students not achieving optimal reading and viewing competencies. In addition, based on the results of the diagnostic assessment conducted by the teacher at the beginning of the semester, students have diverse abilities and interests, so a more personalized and adaptive approach is needed in the learning process. This is so that the material presented can suit the needs of each student by providing feasible challenges according to their ability level. This necessitates the implementation of a more flexible learning strategy. It emphasizes students' individual needs, such as using a Quizizz application based on the Teaching at the Right Level (TaRL) approach to adjust understanding to the student's abilities and interests.

The teacher's need for Quizizz application assessment is based on the Teaching at the Right Level (TaRL) approach to the material of identifying the main idea of informative text, where the needs questionnaire scoring technique gets a score of 1 if you answer "Yes" and a score of 0 if you answer "No." The results of the needs questionnaire filled in by the fourth-grade teacher of SD Negeri Deles show that the needs questionnaire gets a perfect score of 12 out of 12 questions, or in percentage form, 100%. This is when the teacher responds "yes" or agrees to every question.

The first aspect described in the table is suitability for learning objectives. Teachers stated that the material in the Quizizz application assessment based on the Teaching at the Right Level (TaRL) approach must be based on learning objectives. In terms of how well the material fits, teachers believe that the Quizizz assessment for finding the main idea of informative texts is easy to learn because it tests what students know and helps them understand the material better.

In the aspect of language suitability with students' level of understanding, teachers agreed that the Quizizz app assessment based on the Teaching at the Right Level (TaRL) approach uses standardized grammar that is quick to understand, short, concise, and clear; the use of simple and straightforward language is essential in ensuring that questions can be understood well by students. In other words, this assessment is designed with students' level of understanding in mind to focus on the material being tested without being overwhelmed by the complexity of the language.

Furthermore, in the self-instructional and adaptive aspects, teachers agree that the Quizizz application assessment based on the Teaching at the Right Level (TaRL) approach must be able to be operated by students independently and can be used in various places and times. Additionally, teachers agree that the media display aspect requires clear voice accompaniment to help identify the main idea of informative texts and provide varied backgrounds.

The results of the teacher's needs questionnaire indicate that the Quizizz application assessment, which is based on the Teaching at the Right Level (TaRL) approach, is highly suitable for the learning objectives and material being taught. This assessment also supports student independence in learning a language that is easy to understand and attractive. The flexibility in using the assessment also allows students to learn adaptively according to their abilities. Therefore, Quizizz, based on the Teaching at the Right Level (TaRL) approach, effectively supports more interactive, independent learning and meets student needs.

Researchers made a Quizizz application assessment design based on the needs questionnaire results, which obtained the following results.

- a. Quizizz assessment based on the Teaching at the Right Level approach is entirely on the learning objectives set.
- b. Quizizz assessment based on the Teaching at the Right Level approach must be informative, complete, easy to learn, and straightforward.
- c. Using standardized, short, concise, and clear grammar in Quizizz assessments will help students understand it.
- d. Quizizz assessments based on the Teaching at the Right Level approach can be operated by students independently without much help.
- e. Quizizz assessments are easy to learn and can be used anytime and anywhere.
- f. Quizizz assessment has engaging illustrations and bright colors on the background display to attract students' interest.

#### ***Validation of quizizz application assessment development based on the teaching at the right level (TaRL) approach***

Validation of the feasibility of assessing products using the Quizizz application based on the Teaching at the Right Level (TaRL) approach was carried out by two expert validators: media and material expert validators. Validation by media experts includes ease of use and product features, while material experts validate product content and assessment. A supervisor-approved questionnaire is used to validate the feasibility of materials and media.

Material feasibility validation and assessment products using the Quizizz application based on the Teaching at the Right Level (TaRL). The assessment conducted by material

experts includes aspects of the question grids with a total of 3 questions, aspects of question quality with 11 questions, and aspects of question weighting with four questions. According to the results of the material expert assessment, the Likert scale's total score is calculated with a score of four, which means very good; a score of three, which means good; a score of two, which means quite good; and a score of one, which means poor. Furthermore, the score is processed as a percentage with the provisions of the score range:  $82\% < x \leq 100\%$  highly feasible,  $63\% < x \leq 81\%$  feasible,  $44\% < x \leq 62\%$  moderately feasible, and  $25\% < x \leq 43\%$  not feasible.

The results of the material expert assessment for the Quizizz application assessment based on the Teaching at the Right Level (TaRL) approach can be seen in the table below.

**Table 1.** *Summary of results from material expert validation*

No	Assessment aspect	Total score	Percentage	Criteria
1.	Problem grids	12	100%	Highly feasible
2.	Question quality	33	75%	Feasible
3.	Question weighting	15	94%	Highly feasible
The average percentage of material feasibility in the TaRL-based Quizizz application assessment			89.7%	Highly feasible

Based on the recapitulation results, it is found that the material on the TaRL approach-based Quizizz application assessment has an overall average of 89.7%, which is stated in the "highly feasible" criteria by assessing three aspects consisting of question grids, question quality, and question weighting. Based on the assessment of the material on the Quizizz application assessment product, it is highly feasible to apply the material by considering the input and suggestions for improvement from the material expert validator.

Based on suggestions from material expert validators related to using worksheets or teaching materials in learning, expert validators suggested that Student Worksheets (LKS) be prepared by considering differences in students' level of understanding through feasible scaffolding strategies. For the suggestions related to questions on Quizizz, expert validators suggest that each item is given work instructions so that students can understand them when answering questions.

The validation of media feasibility on assessment products using the Quizizz application based on the Teaching at the Right Level (TaRL) approach by media experts includes aspects of the suitability of learning objectives (three questions), aspects of the suitability of learning objectives (three questions), design aspects (four questions), aspects of media display (four questions), and aspects of practicality or ease of media (four questions).

From the results of the media expert assessment, the total score of the Likert scale used is calculated with a score of four very good, a score of three good, a score of two quite good, and a score of one poor. Furthermore, the score is processed as a percentage with the provisions of the score range:  $82\% < x \leq 100\%$  highly feasible,  $63\% < x \leq 81\%$  feasible,  $44\% < x \leq 62\%$  moderately feasible, and  $25\% < x \leq 43\%$  not feasible.

The results of the media expert's assessment of the Quizizz application assessment based on the Teaching at the Right Level (TaRL) approach can be seen in the table below.

**Table 2.** *Summary of media expert validation results*

No	Assessment aspects	Total score	Percentage	Criteria
1.	Feasibleness of learning objectives	9	75%	Feasible
2.	Feasibleness of student characteristics	11	92%	Highly feasible
3.	Design	15	94%	Highly feasible
4.	Media display	15	94%	Highly feasible
5.	Practicality or ease of media	14	87.5%	Highly feasible
The average percentage of media feasibility on TaRL-based Quizizz application assessment			88.5%	Highly feasible

Based on the recapitulation results, it is found that the media on the TaRL approach-based Quizizz application assessment has an overall average of 88.5%, which is stated in the “highly feasible” criteria by assessing five aspects consisting of aspects of the suitability of learning objectives, aspects of the suitability of learning objectives, design aspects, media display aspects, and aspects of practicality or ease of media. The media assessment of the Quizizz application indicates that it is highly feasible to implement, especially when considering input and suggestions for improvement from media expert validators. Media experts suggest replacing fonts in Quizizz application assessment products based on the Teaching at the Right Level (TaRL) approach to better suit the characteristics of elementary school students, specifically by using the Andika New Basic font. The Indonesian language student manual uses this typeface for its independent curriculum.

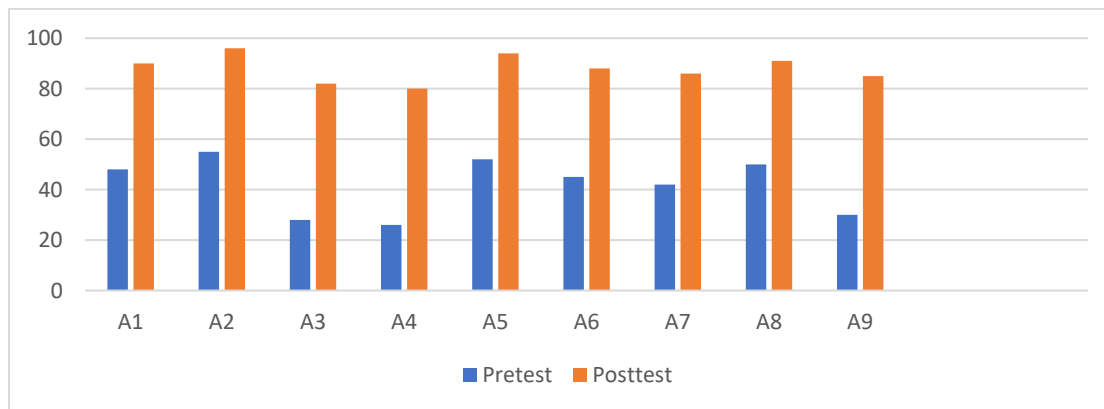
#### ***A small- group effectiveness test***

The product trial happened after the Quizizz assessment product, which follows the Teaching at the Right Level (TaRL) approach, was improved based on feedback from media and material experts, making it suitable for small-scale testing at SD Negeri Deles Batang Regency. The product trial in small groups was conducted with a sample of nine students through a purposive sampling technique: three top-ranking students, three middle-ranking students, and three bottom-ranking students.

The small-group trial was conducted face-to-face using a problem-based learning design with the Teaching at the Right Level (TaRL) approach, and the learning media used were PowerPoint and LKS. At the beginning of the learning, the researcher gave students pre-test questions using the Quizizz application. This phase aimed to assess the student’s initial abilities before they received instruction on identifying the main idea of informative texts. After completing the pre-test, the teacher carried out learning activities based on the learning tools and Quizizz application assessment tools that had been prepared by the researcher and had been approved by the supervising lecturer. Then, at the end of the learning, the researcher gave post-test questions to students, which were used to determine changes in learning outcomes after implementing the Quizizz application assessment based on the Teaching at the Right Level (TaRL) approach.

The results of the pre-test and post-test assessments of learning to identify the main idea of informative texts using the Quizizz application assessment based on the Teaching at the Right Level (TaRL) approach in small group trials can be seen in the diagram below.

**Figure 1.** Results of the small group pre-test and post-test assessment



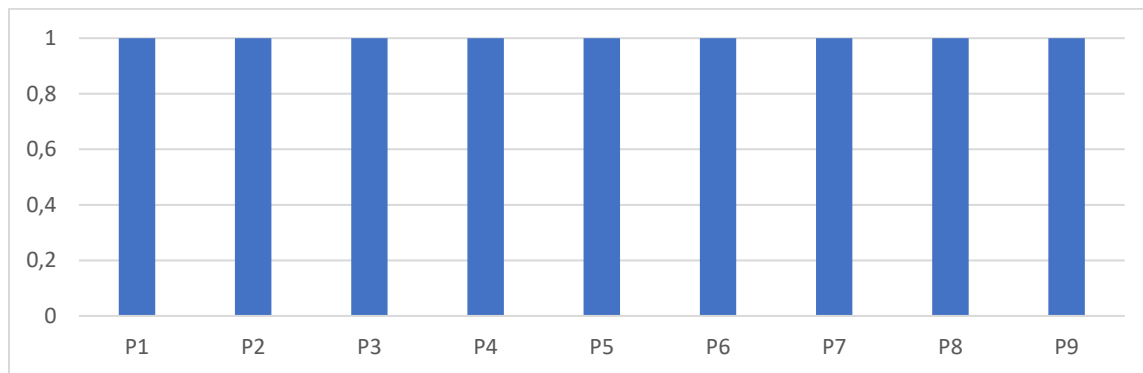
The figure above shows that there is a significant difference in the pre-test and post-test results of students. The pre-test score diagram indicates that the nine students scored below 70 on the learning achievement criteria, which suggests they need guidance. The post-test score can be seen through the figure, showing that all students scored 80 to 96 on the learning achievement criteria, indicating a good to very good category.

### ***Teacher and student response questionnaire***

Based on the results of the teacher questionnaire regarding the Quizizz application assessment using the Teaching at the Right Level (TaRL) approach, a maximum score of 9 was obtained, indicating that this assessment was very well received. All aspects assessed received positive responses with a percentage of 100%, which can be categorized as "highly feasible," including an attractive overall appearance, the suitability of the material to learning objectives, and a combination of colors, images, and text that support readability. In addition, the language used is considered easy for students to understand, which helps them work on questions more effectively.

Teachers also considered that this assessment could foster students' interest in learning and increase their activeness. The series of evaluation activities in the Quizizz application is illustrated, making it easier for students to understand the stages they must go through. Additionally, teachers regard this assessment as user-friendly for teaching students how to identify the main idea of informative texts, both individually and in groups. The last aspect that received high appreciation was the enjoyable learning experience, which supported student involvement in the evaluation process. With these results, it can be concluded that the Quizizz application assessment based on the TaRL approach is practical in supporting learning and is well-received by teachers. The following are the results of the teacher questionnaire presented in the figure for teacher responses.

Figure 2. Results of teacher response questionnaire



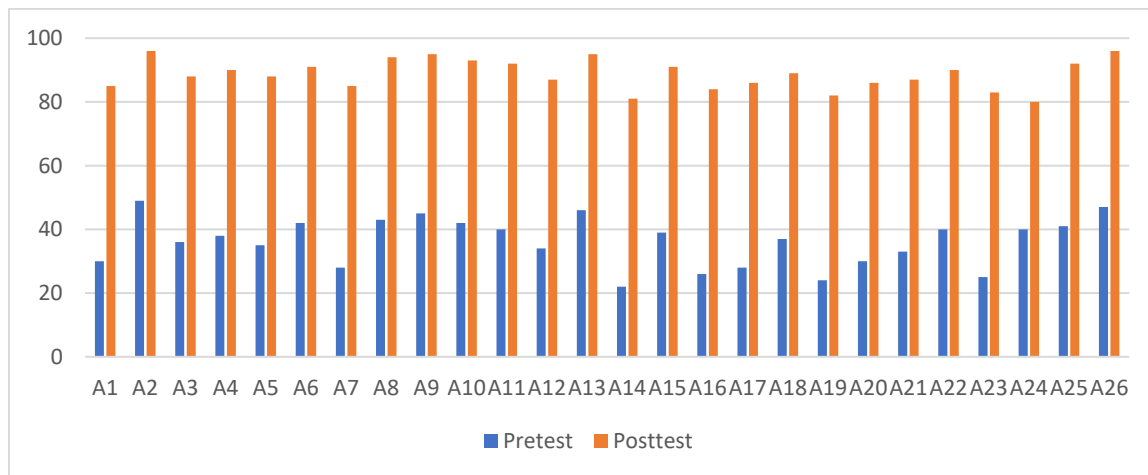
In addition to teachers, researchers also gave questionnaires to students to determine their perceptions of the Quizizz application assessment based on the Teaching at the Right Level (TaRL) approach. Based on the results of the student questionnaire, a very positive response was obtained to using this assessment in learning. An average score of 10 out of 10 questions was obtained, which indicates that this assessment was very well received. All aspects assessed received positive responses with a percentage of 100%, which can be categorized as "highly feasible." In addition, students stated that the questions given were easy to understand because they were adjusted to the level of development, and using the Quizizz application assessment motivated them to learn.

### *Practical tests on large groups*

All 26 fourth-grade students from SD Negeri Deles 01 participated in the large group product trial. The large group trial was also carried out face-to-face using a problem-based learning design with the Teaching at the Right Level (TaRL) approach, and the learning media used were PowerPoint and worksheets. At the beginning of the learning, the researcher gave students pre-test questions using the Quizizz application. This aimed to determine their initial abilities before receiving material on identifying the main idea of informative texts. After completing the pre-test, the teacher carried out learning activities based on the learning and assessment tools of the Quizizz application that the supervising lecturer had prepared. Then, at the end of the learning, the researcher gave post-test questions to students, which were used to determine changes in learning outcomes after implementing the Quizizz application assessment based on the Teaching at the Right Level (TaRL) approach.

The results of the pre-test and post-test assessments on learning to identify the main idea of informative texts using the Quizizz application assessment based on the Teaching at the Right Level (TaRL) approach in large group trials can be seen in the figure below.

**Figure 3.** Results of large group pre-test and post-test assessment



The figure above shows that there is a significant difference in the pre-test and post-test results of students. The pre-test score figure shows that all students score <70 on the learning achievement criteria, indicating they need guidance. The post-test scores can be seen in the figure, where all students score 80 to 96 on the learning achievement criteria, indicating the good to very good category.

Based on the results of the pre-test and post-test scores, the learning outcomes improved from an average classical minimum learning standard of 0% in the pre-test to 100% in the post-test, resulting in a total increase of 100%. Therefore, the Quizizz application assessment based on the Teaching at the Right Level (TaRL) approach is efficacious in improving the reading comprehension of the fourth-grade students of SD Negeri Deles, Batang Regency.

### *Normality test*

The researcher used the Shapiro-Wilk test in the normality test, where the researcher used the test with the help of the SPSS version 29 application. The results of this calculation are then consulted with  $\alpha = 0.05$  in the table. If the calculation results show that the Shapiro-Wilk test equals or exceeds 0.05, then the data is normally distributed.

Based on the calculation results using SPSS 29 in the small group trial, the sig. pre-test score was 0.429, and the sig. post-test score was 0.962, with the sig. pre-test and post-test results > 0.05 so that the data from the small group's pre-test and post-test results can be normally distributed. Moreover, the normality test results in the significant group test obtained the sig. pre-test result of 0.451 and sig. post-test of 0.551 with sig. pre-test and post-test > 0.05; the data from the pre-test and post-test results of the large group trial are normally distributed.

### *Paired sample T-test*

A paired sample t-test is a method used to compare two groups of means from two paired samples with the same subject but with different treatments. Researchers used the SPSS version 29 application in the paired sample t-test to test the results of the pre-test and post-test students in this research.

If the calculated t-score and the t-table are such that if the calculated t-score  $\leq$  the t-table, then  $H_0$  is accepted. Conversely, if the calculated t score  $\geq$  t table, then  $H_0$  is rejected. Furthermore, if the paired sample T-test is based on the significance results, if the sig score is  $< 0.05$ , then  $H_0$  is rejected. Conversely, if the sig. score  $> 0.05$ , then  $H_0$  is accepted.

**Table 3.** SPSS 29 output results for small group paired sample T-test

Paired samples test		Paired differences				T	Df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error mean	95% confidence interval of the difference			
					Lower	Upper		
Pair 1	Pre-test – post-test	-50.667	13.172	4.391	-60.792	-40.542	-11.540	8 .000

The results of the paired sample T-test show that using the Quizizz application with the Teaching at the Right Level (TaRL) approach has effectively helped fourth-grade students at SD Negeri Deles, Batang Regency, improve their reading comprehension, especially in identifying the main idea of informative texts.

### *Wilcoxon test*

Based on the results of the Wilcoxon pre-test and post-test small group tests, the Asymp. Sig. (2-tailed) is 0.008, which means  $0.008 < 0.05$ , so it can be concluded that there is a difference in the average learning outcomes between the pre-test and post-test in the small group test.

**Table 4.** SPSS 29 output results of small group Wilcoxon test

Test Statistics <sup>a</sup>	
	Posttest - Pretest
Z	-2.670 <sup>b</sup>
Asymp. Sig. (2-tailed)	.008

a. Wilcoxon Signed Ranks Test  
 b. Based on negative ranks.

Furthermore, the Wilcoxon pre-test and post-test have an extensive group test; the Asymp. Sig. (2-tailed) was obtained as 0.000, which means  $0.000 < 0.05$ , so it can be concluded that there is a difference in the average learning outcomes between the pre-test and post-test in the large group test.

**Table 5.** SPSS 29 output results of the large group Wilcoxon test

<b>Test Statistics<sup>a</sup></b>	
	Posttest - Pretest
Z	-4.465 <sup>b</sup>
Asymp. Sig. (2-tailed)	.000

a. Wilcoxon Signed Ranks Test

b. Based on negative ranks.

The results of the Wilcoxon test show that using the Quizizz application for assessments based on the Teaching at the Right Level (TaRL) approach has been effective in helping the fourth-grade students at SD Negeri Deles in Batang Regency improve their reading comprehension, specifically in identifying the main idea of informative texts. Researchers used the N-gain test to see if there was an improvement in student learning outcomes before and after using the Quizizz application based on the Teaching at the Right Level (TaRL) approach for learning to identify the main idea of informative texts.

### *N-gain test*

Researchers used this N-gain test to determine whether there was an increase in student learning outcomes before and after learning using the Quizizz application assessment based on the Teaching at the Right Level (TaRL) approach in learning to identify the main idea of informative texts.

The N-Gain test results showed that the small group product trial achieved a score of 0.80218737, which meets high criteria, while the large group product trial achieved a score of 0.827908, also meeting high criteria. Moreover, the average increase in pre-test and post-test scores was 42.6 for the small group and 52.5 for the large group. The following are the results of the N-Gain test on the small-group and large-group product trials.

**Table 6.** Results of N-gain test pre-test and post-test scores

Group	Mean pre-test	Mean post-test	Difference between mean pre-test and post-test	N-gain score	Criteria
Small group	41.78	88	46.22	0.80218737	High
Large group	36.2	88.7	52.5	0.827908	High

## Discussion

### *Analysis of quizizz application assessment development based on the teaching at the right level (TaRL) approach*

Based on the analysis of the teacher needs questionnaire, which achieved a score of 100%, six main aspects support the development of this assessment: (1) This assessment is designed by considering strong alignment with learning objectives, ensuring that each assessment activity contributes directly to the achievement of the expected competencies; (2) evaluation materials, especially in identifying the main ideas of informative texts, are presented clearly and are easy to learn. The assessment functions as an evaluation tool and as a means of strengthening understanding of the material; (3) the use of standard but easy-to-understand language is a priority in the development of this assessment. Simple, concise, and straightforward language helps students focus on the substance of the material without being constrained by language complexity; (4) the assessment is designed to be operated independently by students, supporting the development of their learning independence; (5) the flexibility of use in various places and times is the advantage of this assessment, allowing students to learn according to their speed and abilities; (6) the use of clear voice accompaniment and varied backgrounds makes the assessment more captivating and engaging for students.

The advantages of the Quizizz application lie in the ease of evaluation, increasing student motivation, and providing a solution to technological limitations. Rosyidah (2024) noted that this application makes it easier for teachers to measure student understanding through a modern paper-based evaluation mechanism, where evaluation results can be accessed instantly after the teacher scans the student's QR code. In addition, Anggraini and Erviana (2023) showed that using this mode can increase student learning motivation, especially in subjects such as Indonesian, with the average student score increasing from 78 to 95 after this method was implemented. Furthermore, Junior (2020) emphasized that this mode is an alternative for students who do not have access to smart devices, allowing teachers to continue to engage students in digital learning even without direct technological devices. These advantages are even more optimal when combined with the Teaching at the Right Level (TaRL) approach, which focuses on learning according to the student's ability level. Quizizz The development of the Quizizz application assessment based on the Teaching at the Right Level (TaRL) approach provides a solution to students' difficulties in understanding informative texts and a more personal and adaptive approach to the learning process. This platform can increase students' interest and motivation in learning by integrating gamification and HOTS-based assessments. Another advantage of this assessment is its suitability to the needs of teachers, as seen from the questionnaire results with a score of 100%, which shows that teachers need an assessment that is not only an evaluation tool but also an effective learning medium.

The advantages of developing this Quizizz assessment lie in the use of the Teaching at the Right Level (TaRL) approach, which, according to Muammar et al. (2023), Teaching at the Right Level (TaRL) is a method that refers to the level of achievement and abilities of students, applied through learning analysis, diagnostic assessment, and student mapping. Another

advantage lies in using local wisdom content in informative texts; each question in the Quizizz application assessment integrates relevant culture, traditions, and folklore, which aims to increase students' connectedness to learning materials.

### ***Feasibility analysis of quizizz application assessment based on the teaching at the right level (TaRL) approach***

The feasibility of the Quizizz assessment application based on the Teaching at the Right Level (TaRL) approach was validated by material experts and media experts as determinants of the product's feasibility developed from the media and material aspects as a learning product used in the learning process.

The assessment of the material on the Quizizz application obtained a result of 89.7%, which was stated in the criteria of "highly feasible" by assessing three aspects consisting of question grids, question quality, and question weighting. Quizizz based on the results of the teacher response questionnaire related to the Quizizz assessment tool based on the Teaching at the Right Level (TaRL) approach. It received a score of 100% and included in the highly feasible category. It shows that the development of the Quizizz assessment tool based on the Teaching at the Right Level (TaRL) approach is by the nature of the assessment objectives, namely a tool to evaluate the process and outcomes of student learning through the domains of attitudes, knowledge, and skills (Andini & Ambarwati, 2024), and the goal of TaRL is to achieve significant improvements in students' basic abilities, which in turn will support their academic success in the future.

### ***Analysis of the effectiveness of the quizizz application assessment based on the teaching at the right level (TaRL) approach***

Based on the analysis conducted by the researcher, it can be seen that in learning Indonesian on the material of identifying the main idea of informative texts with the application of the Quizizz application assessment based on the Teaching at the Right Level (TaRL) approach, the average learning outcome was initially 37.69 in the pre-test and increased in the post-test by 86.19, with the percentage of students who completed also increasing from first 0% to 100%. Therefore, the researchers can infer that the percentage of students who completed increased to 100%.

The pre-test and post-test scores were tested using the paired sample t-test, a method used to compare two groups of means from two paired samples with the same subject but with different treatments. The results of the T-test calculation obtained a Sig. (2-tailed) score of  $0.000 < 0.05$ , which means that  $H_0$  is rejected, and  $H_a$  is accepted, indicating a significant difference in the average student learning outcomes before and after using the Quizizz assessment tool based on the Teaching at the Right Level (TaRL) approach in the research.

Several factors cause differences in learning outcomes. Mirhadizadeh (2016) stated that there are two factors: internal factors that come from within the students themselves and external factors that come from their environment. Each student has a unique situation, which ultimately affects their learning outcomes. Understanding the importance of various factors that can increase learning motivation has encouraged parents to pay more attention to their children's educational needs. Such attention is reflected in the efforts of parents in providing

adequate learning facilities and choosing quality educational institutions. By meeting their learning needs and selecting a supportive learning environment, students can attain the best possible learning results. The success of the learning process depends on the teacher's ability to understand and consider two important aspects, namely the internal capacity of students and external stimuli and conditions that affect the learning process. Teachers need to balance these two aspects to create effective learning.

Through the Quizizz application based on the Teaching at the Right Level (TaRL) approach, students can learn according to their respective levels of understanding. This approach ensures that each student is given questions that are feasible for their abilities so that they can learn without feeling left behind or burdened. Azizah and Hidayat (2024) stated that the digital assessment is based on the educational game Quizizz application in the Marketing subject KD. 3.7 and KD. 3.8, which has been validated by media experts with a score of 98% and by assessment experts with 91%, indicating that this product is very valid and feasible to use. Student responses to this digital assessment were also very positive, with a score of 86%, indicating that this assessment is fascinating and motivating. In addition, Amelia et al. (2024) showed that the assessment based on higher order thinking skills (HOTS) using Quizizz, which was developed, meets the validity criteria (valid) based on the results of the construct validity test and obtained an average score of 82%, meeting the criteria efficiently.

### **Conclusion**

Based on the explanation and discussion of the research results described above, the researchers arrived at the following conclusion. The design of the Quizizz application for assessment, developed based on the Teaching at the Right Level (TaRL) approach, was created to meet the needs of teachers and students in learning. The assessment integrates local wisdom content in informative texts and Quizizz application assessment instruments that combine culture, tradition, and folklore. The development of the Quizizz application aims to improve students' reading comprehension skills in the material by identifying the main idea of informative texts.

The Quizizz application assessment, based on the Teaching at the Right Level (TaRL) approach, received scores of 88.5 from media experts (very worthy) and 89.7 from material experts (very worthy). These results indicate that this assessment is highly feasible for being used in learning about reading and watching learning outcomes, where students can understand the main idea and supporting ideas in informative texts and narrative texts, specifically in the material on identifying the main idea of informative texts for the fourth-grade students of SD Negeri Deles, Batang Regency.

### **Disclosure Statement**

No potential conflict of interest was reported by the authors.

### **References**

Afandi, R. A., Ningtyas, N. S., Susiyawati, E., & Pratiwi, P. (2024). The effectiveness of differentiated learning using the TaRL (teaching at the right level) approach for improving learning interest and learning outcome. *Jurnal Pijar Mipa*, 19(4), 657-662.

- Andini, D. W., & Ambarwati, R. (2024). Implementation of the teaching at the right level (TaRL) approach assisted by reward baskets to improve science and science learning outcomes for class iv students at SDN Bakalan. *International Conference on Teacher Profession Education*, 2(1), 857-873.
- Anggraini, V., & Erviana, V. Y. (2023). The use of Quizizz application to improve motivation and learning outcomes in science subjects of 6th-grade students. *International Journal of Learning Reformation in Elementary Education*, 2(03), 159-169.
- Azizah, N. N., & Hidayat, R. (2024). Pengembangan asesmen digital berbasis game edukatif Quizizz pada mata pelajaran marketing (Development of digital assessment based on educational game Quizizz in marketing subjects). *Journal of Innovation and Teacher Professionalism*, 2(2), 195-209.
- Junior, J. B. B. (2020). Assessment for learning with mobile apps: Exploring the potential of Quizizz in the educational context. *International Journal of Development Research*, 10(01), 33366-33371.
- Mirhadizadeh, N. (2016). Internal and external factors in language learning. *International Journal of Modern Language Teaching and Learning*, 1(5), 188-196.
- Muammar, M., Ruqoiyyah, S., & Ningsih, N. S. (2023). Implementing the Teaching at the Right Level (TaRL) approach to improve elementary students' initial reading skills. *Journal of Languages and Language Teaching*, 11(4), 610-625.
- Nurfadila, M. Y., Hajar, S., & Arsyad, N. F. (2024). Utilizing Quizizz for game-based learning in elementary science education. *Journal of Education and Computer Applications*, 1(1), 12-19.
- Rosyidah, L. I. (2024). *Ed-Tech: English teachers' perception toward using Quizizz as a digital tool in English learning* [Doctoral dissertation, Universitas Islam Malang].
- Shavkidinova, D., Suyunova, F., & Kholdarova, J. (2023). Education is an important factor in human and country development. *Current Research Journal of Pedagogics*, 4(01), 27-34.
- Stuppel, E. J., Maratos, F. A., Elander, J., Hunt, T. E., Cheung, K. Y., & Aubeeluck, A. V. (2017). Development of the Critical Thinking Toolkit (CriTT): A measure of student attitudes and beliefs about critical thinking. *Thinking Skills and Creativity*, 23, 91-100.
- Sugiyono. (2021). *Metode penelitian pendidikan pendekatan kuantitatif, kualitatif, dan R&D (Educational research methods: quantitative, qualitative, and R&D approaches)*. Bandung: Alfabeta.
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