

# The Effectiveness of Quizizz Application-Assisted Learning to Improve Student Self-Efficacy

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**Abstract**

*The purpose of this study was to examine the effectiveness of learning assisted by the Quizizz application in improving students' self-efficacy. This study used a one-group pretest-posttest research design. The study was conducted on 23 students majoring in Chemistry Education in class R-001 in the Odd Semester of the 2025/2026 Academic Year. The data collection technique in this study was a questionnaire aimed at measuring self-efficacy before and after learning assisted by the Quizizz application. The data on students' self-efficacy abilities were then tested using a paired sample t-test. The conclusion of this study is that the application of the Quizizz application in learning is proven to be effective in increasing students' self-efficacy. This increase may be due to the Quizizz application having interesting and comprehensive features and providing quick feedback, making learning competitive and enjoyable and providing more flexible independent learning opportunities.*

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## 1. INTRODUCTION

Technological developments require lecturers to be able to integrate digital technology as part of their learning strategies to create a more interactive, adaptive, and meaningful learning experience for students. The integration of digital technology has become an important focus in modern education to improve students' abilities through the use of innovative teaching methods and the use of technological tools [1]. Conventional learning methods result in one-way and monotonous delivery of material, causing students to become disengaged and bored. Conventional learning makes students bored and reduces their activity [2]. This is in line with the opinion [3] that conventional learning without innovation results in low student participation.

One of the major challenges in the teaching and learning process is increasing students' self-efficacy. Self-efficacy is an individual's belief in their own abilities, based on their experiences in performing tasks or solving contextual and forward-looking problems [4]. Self-efficacy plays an important role as a psychological factor that influences learning success, motivation, perseverance, and students' ability to face obstacles in the learning process. Self-efficacy is important for students because with self-confidence, students can complete tasks properly and correctly [5]. High self-efficacy enables educational goals to be achieved to the maximum extent, thereby improving learning achievement [6]. Therefore, learning strategies that provide positive experiences, immediate feedback, and a pleasant learning atmosphere are needed to boost students' confidence in learning.

One medium that can support this is the Quizizz application. The Quizizz application is a game-based learning platform that can be played by many players, so it can be used to evaluate understanding through fun practice questions [7]. The Quizizz application has advantages in the form of complete features and an attractive appearance, and can present statistics on student performance results directly [8]. The use of the Quizizz application in learning affects student

engagement, interest, motivation, and learning outcomes [9]. Therefore, through research on learning assisted by the Quizizz application, it is hoped that innovative solutions can be obtained to improve students' self-efficacy, while also supporting the creation of a more dynamic, responsive learning environment that meets the demands of the current digital era.

## 2. RESEARCH METHODS

This study used a one-group pretest-posttest research design. It was conducted on 23 Chemistry Education students in class R-001 in the Odd Semester of the 2025/2026 Academic Year. The data collection technique used in this study was a questionnaire aimed at measuring self-efficacy before and after learning assisted by the Quizizz application. The data on students' self-efficacy abilities were then tested using a paired sample t-test.

## 3. RESULTS AND DISCUSSION

### 3.1. Research Results

Self-efficacy data was obtained before and after learning assisted by the Quizizz application. Self-efficacy data before and after learning is presented in Table 1.

**Table 1. Self-Efficacy Data**

Self-Efficacy Data	Average
Pretest	72.13
Posttest	83.04

Based on the self-efficacy results in Table 1, the self-efficacy before and after the implementation of learning assisted by the Quizizz application in 23 students increased by 10.91. The self-efficacy data was then tested for normality. The normality test data is presented in Table 2.

**Table 2. Normality Test**

Self-Efficacy Data	Significance	Description
Pretest	0.212	Data is normally distributed
Posttest	0.167	Data is normally distributed

Based on the normality test results in Table 2, it shows that the pretest and posttest data are normally distributed, so this study can be tested using a parametric hypothesis test using a paired sample t-test. The hypothesis test is presented in Table 3.

**Table 3. Hypothesis Testing**

Hypothesis Testing	Significance
Paired Sample t-Test	0.000

Based on the hypothesis testing results in Table 3, it can be concluded that in this study, the use of the Quizizz application is effective in increasing students' self-efficacy.

### 3.2. Discussion

The results of this study indicate an increase in students' self-efficacy after participating in Quizizz-assisted learning. These results are in line with research [10] which states that the use of the Quizizz application is effective in increasing students' self-efficacy. The increase in students' self-efficacy results is due to the Quizizz application applying gamification principles such as points, time limits, avatars, and rankings that stimulate students' intrinsic motivation. This can indirectly increase students' self-efficacy due to an increase in their capacity to understand the material. The Quizizz application, which integrates interesting

features such as interactive quizzes, point acquisition, and leaderboards, can provide a competitive and engaging learning experience for students [11]. This is in line with research [12] that the use of the Quizizz application has an effect on increasing material comprehension and creating a fun and engaging learning atmosphere. The Quizizz application, which provides immediate feedback, can help students reflect on their understanding. The quick feedback feature on the Quizizz application allows students to immediately identify and correct misunderstandings of the material being studied [13]. The immediate confirmation of whether a student's answer is correct or incorrect allows students to correct their mistakes in the learning process, thereby improving their conceptual understanding and confidence. This is in line with research [14] that the Quizizz app, which provides immediate feedback, can boost students' confidence and help them understand the material. The Quizizz application also has advantages in terms of flexibility, allowing students to control the pace and strategy of learning, thereby increasing student self-efficacy. The Quizizz application is a flexible formative assessment application that can attract the interest and motivation of students [15].

#### 4. CONCLUSIONS

Based on the results of hypothesis testing in this study, it was concluded that the application of Quizizz in learning proved effective in increasing student self-efficacy. This increase may be due to the Quizizz application's attractive and comprehensive features, as well as its ability to provide quick feedback, making learning competitive and enjoyable and providing more flexible opportunities for independent learning.

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