The Use of Number Line as a Strategy in Teaching Problem Solving Involving Fractions

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Abstract

This study examined the use of the number line as a strategy in teaching problem-solving involving fractions. A quasi-experimental pretest-posttest design was used. The respondents were 50 learners who complied with the inclusion/exclusion criteria and completed both the pretest and posttest, with 24 learners from the rule-based method and 26 learners from the number line method. This study employed the random assignment of the two sections of Grade 4 learners to the experimental (number line) and control (rule-based) groups. A nine-item problem-solving multiple-choice test involving the addition and subtraction of fractions served as the research instrument. The mean, standard deviation, and mean difference were employed for descriptive statistics, and the t-test was used for inferential statistics set at a 0.05 level of significance. The t-test showed that the two groups' mean scores were similar before and after the intervention. However, statistical analysis revealed significant gains within each group. Students who used the number line method and the rule-based method did much better on the posttest than they did on the pretest. The findings suggest that both the rule-based approach and the use of the number line can improve procedural skills among young learners. The findings support the importance of developmentally appropriate visual teaching strategies such as number lines, especially at the elementary level. These strategies enhance mathematical understanding and foster greater confidence in learners' abilities. As educators continue to explore effective teaching methods, integrating visual aids like number lines could prove essential in supporting diverse learning styles.

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