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# The Brain-Based Learning Effect on Academic Progress and Retention of Biology Course Materials

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**Abstract**

**Introductoin:** This research aims to study the brain-based learning effect on academic progress and the retention rate of biology course materials in 11th-grade students' long-term memory in the experimental science major.

**Method:** This research is practical in terms of purpose and determined by a quasi-experimental method with pre-test and post-test design. The statistical population includes all 137 secondary school students (boys and girls) of Anbarabad in the academic year 2017-2018. Using random sampling, 46 subjects were selected for two control and experimental groups (23 people each). The educational environment was determined based on brain-based components (light, water, food, oxygen, music, and color) in the experimental group. The measurement tool was a researcher-made test. Pre-tests and post-tests were conducted for both control and experimental groups on the subject of reproduction in biology. Also, to determine the permanence of information, a common test was taken from the two groups after two months. Form, content, and criterion validity were used for the validity, and the Kuder-Richardson test was used for the reliability. The data obtained from the research were analyzed based on descriptive statistics (determination of mean, standard deviation, etc.) and inferential statistics of one-way Analysis of Variance (ANOVA) (difference between two groups).

**Results:** The results of the research indicate that there is a significant difference between the traditional method and brain-based learning in the academic progress and permanence rate of biology course materials in students.

**Keywords:** Brain-Based Learning, Biology, Academic Progress, Content Retention

**Research Article**

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