Abstract

One development needs that the researcher would like to address is the result of the improvement of academic performance of students in the study of number systems using the simplified theorem. The researcher devised simplified theorem in converting number systems. In the College of Computer Studies of ESSU, one of the problems encountered by the student is the difficulty in manipulating number systems because of the complicated conventional method of solving and converting different number systems.

The researcher utilized descriptive-experimental method. The descriptive method described the academic performance of the students using tables and data recording. Experimental method was utilized in the study. Pairing of respondents was done to ensure the two groups are on the same performance level. One group was taught in conventional method of number systems conversion while the other group was taught in simplified method. Achievement exam was administered to both groups. The instrument was validated by the other number systems Professors to check the inconsistency and difficulty of the item questionnaire. An internal
consistency test was done using the Cronbach Alpha coefficient to test the reliability of the exam. Test items were deleted or revised depending on the recommendations of the number systems Professors and the obtained Cronbach Alpha coefficient. Inferential statistics of t-test was used in determining the significant differences of the mean scores obtained within the group and between groups in terms of their level of performance in number system conversion.

The academic performance of respondents in number system conversion using simplified theorem is excellent with the mean score of 42.73, while the those who used conventional method the mean score of achievement exam is 36.73. The performance percentage of the experimental group using simplified theorem is 85.47%, and the control group using the conventional method of number system convention, the percentage of performance is 73.47%, hence the percentage gained of the simplified theorem is 12%. There is a significant difference in the performance of the respondents in simplified theorem and in conventional method in number systems conversion, in which the t-test computed is 3.893, greater than the t-test value of 2.704 at standard error of 0.005.

References


Index Terms

Computer Science  Information Systems

Keywords

Architecture, Binary, Cronbach, Discrete, Hexadecimal, Likert, Octal, IP or Internet Protocol.