

About this paper**Appears in:**

ICERI2015 Proceedings

[\(browse\)](#)**Pages:** 8-16**Publication year:** 2015**ISBN:** 978-84-608-2657-6**ISSN:** 2340-1095**Conference name:** 8thInternational Conference of
Education, Research and
Innovation**Dates:** 18-20 November, 2015**Location:** Seville, Spain**Citation download:**[\(BibTeX\)](#) [\(ris\)](#) [\(plaintext\)](#)**Other publications by the****authors:**[\(search\)](#)**Buy the publication:**[\(bookshop\)](#)**Upcoming event:**

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THE EFFECTS OF LEARNING STYLES AND STUDENTS' VIEWS ON ACHIEVEMENT IN MATHEMATICS

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This study was conducted to understand the effect of change status of learning styles and views towards mathematics on achievement among higher secondary students. Two hundred forty seven grade eleven science students from two higher secondary schools at Kathmandu, Nepal, participated in the study. In this survey method, a set of 44 force choice dichotomy items of the Index of Learning Styles (ILS) and 55 views statements were used at the beginning and end of the academic year 2012/13. The ILS has four dimensions that include active and reflective; sensing and intuitive; visual and verbal; sequential and global. Students' changes of views (positive, balanced, or negative) and learning styles status were determined by subtracting the pre-survey from the post-survey scores. The learning outcome was based on 50 items of a Mathematics Achievement Test (MAT) of 100 marks constructed by the researchers. It was administered at the end of the academic year along with ILS and views survey. Data were analyzed using descriptive statistics with SPSS software. The mean MAT score of the different student groups varies from 26.0 to 54.9 and the standard deviation varies from 1.2 to 18.2. The findings revealed that the balanced group of students who remained in the active to active and reflective to reflective learning styles scored higher in MAT. However, positive and balanced students who shifted from visual learning style to verbal scored higher in comparison with their other counterpart. It was also found that positive group of students (who were sensing in the pre-survey) and balanced group of students (who were intuitive) scored higher, while negative group of students (who were sequential in the pre-survey) scored slightly higher than those students who were global. Students' scores, whose learning styles dimension changed from visual to verbal, were higher followed by sensing to intuitive, and lower from verbal to verbal. In addition, there exist relationships between pre and post learning styles with mathematics achievement. As far as the researchers' knowledge is concerned, this study is believed to be the first one of this kind. These findings have implications for improvement of mathematics education of higher secondary students.

keywords: learning styles, views, mathematics achievement test.