Abstract

Searching for mathematicians who had contributed to the improvement of mathematics education during Islamic Era in Persia became an interest of the author of this thesis during the Master's Program at Simon Fraser University. It was found that Tusi has been an icon in the mathematics education of the Islamic Era, particularly in Persia.

The purpose of this study was to investigate Tusi's contributions to the improvement of mathematics education. This goal required first a summary of the political and educational situation of Persia from the start of Arab control until Mongol rule and then a focus on Tusi's particular contributions. The method for collecting the information was to initially research books written by historians and mathematicians in North America. Then the search was continued to obtain the opinions of Iranian historians and mathematicians. The sources include Iran's National Library, the library of universities, peer reviewed books available in Iran's mathematics education books market, and the proceedings of conferences about Tusi held in Iran.

It was found that Tusi compiled numbers of mathematics books and treatises, wrote redactions to many of them, and kept them in a library at the location of an observatory and school he established in Maragheh, the capital of the Mongol Empire. The results of the study revealed that Tusi trained mathematics teachers, taught mathematics, and collected data from twelve years of observation with his team of mathematicians and astronomers in Maragheh. He compiled a calendar from the data. Tusi also re-cast the entire collection of astronomy books from Euclid's "Elements" to Ptolemy's "Almagest."

The principal conclusion is that Tusi had both influenced and preserved the scholarly life of mathematicians and astronomers. Another conclusion is that he planned and defined a reformed mathematics education by combining written books and translated books into a quality terminology which helped educators teach mathematics with greater ease.

Keywords: Tusi; mathematics education; mathematics books;