

Abstract

The main purpose of this study is to analyze the professional knowledge of an mathematics expert teacher, who teaches mathematics in a junior high school . Qualitative data were collected by employing observations, interviews, and document analysis. The purposes of this study was as follows: analyze and discuss the performed professional teaching knowledge underlies the teacher's teaching performance of the case study; discuss the contents of the expert teacher's professional teaching knowledge; integrate and generalize and interpret successful factors of the teacher's teaching of the case study, and hope for a complete understanding of the teacher's teaching of the case study, furthermore, to bring the teaching inspiration and innovation to teachers in general, and also induce teacher's power to make teaching innovation development.

The researcher exams, analyzes and generalizes the data in connection with the teacher of the case study, in addition to interpret the realized professional teaching knowledge, the researcher also analyzes the factors of the teacher's teaching performance and teaching specialty, teaching performance and main form.

Combine the above study outcomes, the researcher proposed high school mathematic teacher with following recommendations: fulfill professional teaching knowledge unceasingly, introspect teaching progress continuously and has the

courage to change and hold the ideal of lifetime learning. Moreover, the researcher recommends the teacher education institution of mathematics and the researcher also recommends approach and subject for the future study.