

# **Seminar on Development and Application of Three Questionnaires on Students' Mathematics Learning Experiences**

**Date:** Saturday 12 March 2016

**Time:** 14:30-17:00

**Venue:** E33-2036, Faculty of Education, UM

**Language:** Mandarin

**Registration:** Online Registration (Link: <https://goo.gl/1L3DrI> or QR Code )

**Enquiry:** Mr. Alan CHANG, Tel: 8822 4109

Email: [FED\\_Event@umac.mo](mailto:FED_Event@umac.mo)

## **Speaker:**

Prof. Guangming WANG, College of Teacher Education, Tianjin Normal University

## **Abstract:**

In this talk, I shall talk about the development process of three questionnaires on students' mathematics learning experiences. They are mathematics meta-cognition level questionnaire, mathematics learning non-intellective characteristics questionnaires, and students' mathematics learning strategy questionnaire.

To develop the three questionnaires, we have gone through the following processes: (1) literature review. Based on a comprehensive and critical review of the related review, we can build up the theory foundation, develop the framework, which are the dimensions of the questionnaires. (2) Developing the items for each dimension based on previous research and our own understanding of the status in schools. We have gone through several rounds of improvement by adding and/or deleting some items to develop the item base. (3) Forming preliminary questionnaire and conducting a pilot study to see whether there are any items that are ambiguous to the students. (4)

Conducting a second investigation on a big scale to improve the questionnaire by interviewing experts, gaining content validity and finalize the questionnaires.

We, then, used the three questionnaire on a large scale. Here I would like to report the results obtained from the Non-intellective Characteristics Questionnaire. The Questionnaire have five dimensions: (1) motivation; (2) emotion; (3) attitude; (4) will; and (5) personality. Data collected from 633 high school students were analyzed using path analysis by AMOS.

We found that, (1) high efficiency mathematics learners have a significantly higher overall score in non-intellective and motivation, emotion, attitudes and personality than the average learners and low efficiency learners, but there is no significant difference among the three groups in the dimension of wills. (2) Motivation, emotion and attitude have a direct influence on their mathematics learning achievement. Personality has an indirect influence on mathematics learning achievement. There's no significant correlation between will and their mathematics learning achievement. (3) Attitudes has the greatest influence on mathematics learning achievement, followed by emotion, motivation and personality. The emotion has the greatest direct influence on students' mathematics learning achievement, while personality has the greatest indirect influence on students' math achievement.