

Title: Interactive Learning Framework for Improving Teaching and Learning Mathematics among Students from Low-Income Families in the Fourth Industrial Revolution

Descriptions:

Research demonstrates students from low-income families scored lower than more advantaged students. The achievement between the students from low-income families and more advantaged students are often associated with dropout rate. High dropout rate has been identified for the low educational attainment among B40 households. Putting aside the economic factors, lacking of interest for school is the main reason for the high dropout rate. There were lacking of IT capabilities to interactively integrate teaching and learning mathematics. The mathematics knowledge is transferred from lecturers to students one-way before or after classes. IT tools enable interactive learning; interactive learning contribute better learning experiences; better learning experiences lead to improved mathematics performance. Therefore, the main objective of this study is to design and develop an appropriate interactive learning (IL) framework and system for improving the performance of Mathematics.

Focus group study will be conducted to identify key IT capability (ITC) that influence mathematics performances of low-income school students, followed by a questionnaire survey and Bayesian network analysis to determine the relationship between ITCs (cause) and mathematics results (effect). An IL framework and system will be developed and tested to 2 students' groups of "with" and "without" the IL system. Mathematics performances will be compared to verify the effectiveness of the IL system. This study is particularly important for Malaysia Education Blueprint 2015-2025 by reducing the dropout rate of Malaysian students. Mathematics education can be delivered interactively to the low-income students especially in rural areas. Gap between low- and high-income students could be narrowing over time. This will equip Malaysia for the final leg of its journey towards becoming a high-income nation. The nation can build a large group of educated and skilled workforce as mathematics being a fundamental knowledge for all disciplines.

Call for Graduate Research Assistant

Project Title: Interactive Learning Framework for Improving Teaching and Learning Mathematics among Students from Low-Income Families in the Fourth Industrial Revolution

Source of Funding: FRGS

Project Duration: 2 Years

Monthly Salary: RM 1800 – 2500 (depending upon candidate's experience)

Location: Faculty of Information Science and technology, MMU Melaka

Benefits of the project (not limited to):

- Pursuing Master of Science (Information Technology)
- Waived tuition fees (separate application is required)
- Monthly salary (according to FRGS)
- Additional allowance top-up (subject to approval from University)
- Attending local conferences/trainings

Responsibilities:

- Assist with conducting research activities including literature review, study design, data collection, data analysis, administrative work and publication of research work
- Up to 4 hours per week of administrative work assigned by the faculty

Requirements:

- Bachelor's degree with honours in IT, computer science and Engineering discipline, preferably 2nd class or above.
- Good interest and knowledge of Software and IT.
- Good English proficiency.
- Self-motivated, requires minimal supervision, resourceful, keen to learn, possess good communication skills and able to work under pressure.

Interested applicants are requested to submit their resumes through email to
Dr. Lew Sook Ling (sllew@mmu.edu.my).