

Developments

First Math Study Skills Intervention in Kuwait

By Ilene K. Winokur, Milena Baeff, and Wassim Daher

Developmental education is the missing piece that brings all skills, content knowledge and future-ready skills together for students who would otherwise be unsuccessful in their studies. However, developmental education as a concept to frame foundation-level programs is quite unknown in the Middle East including Kuwait. This should be a concern to those who lead programs responsible for the initiation of students from high school to university. Why should they be concerned? Developmental education is seen as the key for all students to become successful.

Gulf University for Science and Technology (GUST) is the first private university in Kuwait, established 2002. In an effort to find a means of validation for their Math Foundation Unit (MFU), its former Accreditation Coordinator searched and found NADE and the organization's accreditation process. He had previous experience with developmental education courses during his graduate studies and believed it would be the best fit for the program.

After the NADE accreditation process began, faculty discussed how they could understand more about developmental education and apply it in their own classrooms. The Director of the Foundation Program Unit (FPU), Dr. Ilene Winokur, MFU Coordinator, Dr. Wassim Daher, and current Accreditation Coordinator, Kelle Hutchinson attended the 2015 and 2016 NADE conferences and received training for the accreditation process. In addition, Milena Baeff, MFU instructor was so interested to know more strategies to improve math success she decided to attend the National Center for Developmental Education's 2017 Kellogg Institute.

The NADE accreditation process was an extremely valuable process for the MFU faculty. They deepened their understanding of the fundamental methodologies and pedagogy for math teaching, how to respond to standards,

and the importance of data collection and analysis to ensure the quality of the program. After attending the Kellogg Institute, Milena presented some of the key concepts she learned to her MFU colleagues. The amount of professional development and growth throughout the whole process has been significant.

Milena Baeff's final project for the Kellogg Institute, supervised by Dr. Patrick Saxon, has focused on how implementation of math study skills in MFU Basic Algebra courses may improve student outcomes and support retention efforts. While attending several NADE conferences since 2015, the Coordinator, Dr. Wassim Daher met and consulted with Dr. Paul Nolting, the author of *Winning at Math: The Guide to Learning Math Through Successful Study Skills*. This led to a collaboration between GUST, MFU, and Dr. Nolting, as consultant on Milena's project.

The study documents the attempt to improve the student outcomes and begin building the developmental program at the MFU by integrating a study skills program into developmental math classes. GUST offers a developmental math program which assists the students in their transition to college math courses. The MFU program includes Math 095 (Beginning Algebra), Math 096 (Intermediate Algebra), Math 094 (Beginning Algebra for English Majors) and Math 098 (Pre-Calculus for Computer Science majors). The students are placed in the respective math course according to their scores from the mandatory Accuplacer test. In addition, MFU GUST has also adopted a 3+2 teaching model in which three out of the five daily classes are taught by the instructor and the remaining two are assigned for a practice lab with the Teaching Assistant (T.A.). Retention rates have improved slightly; however, they were lower than expected.

GUST MFU has benefited from the collaboration with Dr. Paul Nolting and Kimberly Nolting who visited GUST and presented to the MFU faculty and TAs on learning assistance training. This has elevated their level of knowledge and expertise in support for developmental education students. The collaboration also extended to the awarding of a grant from the Kuwait Foundation for

Advancement of Science (KFAS) for the same study.

Study skills were integrated with the regular developmental math class following Nolting's recommendations. At the beginning of the course each student from the experimental group took the Math Study Skills Evaluation IV. The results were analyzed and individual goals set by each student depending on which study skills required work. Thirty minutes from the students' practice lab time were used by the instructor to teach one unit per week and the rest of the unit was assigned as homework. The students were encouraged to apply all the strategies immediately in their math course. The control group continued to follow the previous course plan without study skills as set by the MFU.

The study began in the Fall semester of 2017 and ran until Spring 2019. The analysis of the results showed better performance on tests and overall grades by students in the experimental group who worked specifically on their study skills than students from the control group who had no additional intervention.

Based on these positive results, GUST MFU plans to implement Math Study Skills for all Basic Algebra students beginning in Fall 2019. Milena Baeff will also add the program design to Intermediate Algebra courses in Fall 2019. Subsequently, another pilot study is planned to determine if it will be beneficial to continue the program throughout all levels in the MFU.

GUST Math Foundation program received NADE accreditation at the 2019 conference as the first of such accreditations internationally. GUST is becoming the Middle East leader in developmental education. The university strives to offer all their students an equal chance for success and sees other universities following their lead. Developmental education is expected to grow in this region of the world.

Ilene K. Winokur (AlZaid.I@gust.edu.kw) is director of the Foundation Program Unit at Gulf University for Science and Technology in Kuwait.



Advertisers Index

Academic Success Press	9
Bedford/St. Martin's-MacMillan	Inside Front Cover
College Reading and Learning Association	26
DevEd Press	5
Kellogg Institute	9
Northern Illinois University	Back Cover
Sam Houston State University	5