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**Cover Letter**

In addition to Inference in Bayesian networks and graphical models, my research interests include mathematics education and related subjects, such as math anxiety and the effect of learning and teaching styles on students’ performance. I particularly emphasize the problem of teaching mathematics in American style universities in the Middle East. In my previous research, I have identified the relationship between students’ success and their personality types. I have applied these results to my classes to improve students; classroom performance and interactions.

Based on Cox W. (Progress on development of CPD provision for teaching mathematics in HE, *MSOR* *Connections* Aug 2005. Volume 5 No 3, 29-31), teaching mathematics can be understood as having resources, maintaining professionalism, being clear, precise, and aligned with the students, and most importantly, teaching students how to learn, explaining, engaging, motivating, examining, and evaluating. There should be no difference in teaching mathematics in different geographical regions. However, the reality is different. In American universities operating in the Middle East, students have more difficulty learning mathematics than do students in American universities in the United States. My observations suggest that this phenomenon is due to students’ and faculty members’ motivation, background, use of technology, and cultural influences.

Mathematics is the base of all sciences and students’ success in life is related to their success in learning at the university. Although students’ success in life is related to their success in learning, many would not take a math course if they did not have to do so to satisfy their university core requirements. Although multiple reasons exist for students’ poor performance in mathematics, one prevalent variable worth considering is personality type. This work seeks to uncover how students learn and study math and also prepare for exams and tests. In this work, we used Bayesian networks to determine possible relationships among the variables involved in this study—primarily students’ personality types, math anxiety, students’ majors, students’ ranks, study habits, and genders. The main advantage of BNs is that they are very simple tools to use and interpret by users without a background in Statistics. They provide a visual way that is easy to read and interpret, and therefore they can be used as a framework for inference and relevance analysis.

The data used in this paper were derived from an accessible population of 468 students during the spring of 2009 at a U.S. institution in Jordan. Because little or no research has been performed in the area of math study and personality types, we undertook this study to add to this area of knowledge. This study reveals that math anxiety is related to gender, personality types, and study habits among this group of university students.

Our work is novel because it proposes the use of Bayesian networks to model relationships among the different variables involved in the study. We have additionally evaluated the model by comparing its results with those obtained with the SPSS regression analysis and results were similar with the exception that we have probabilities with Bayesian networks and we can update probabilities everytime we have a new evidence.