Engaging Students in Remedial Mathematics Courses Using History of Mathematics

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Abstract
LaGuardia Community College offers a wide range of mathematics courses, from remedial mathematics through differential equations and linear algebra. As the main aim of remedial courses is to help students catch up with skills they should have developed earlier, these courses do not usually offer the opportunity to appreciate the beauty of several topics encountered during the semester. Yet introducing some historical facts, and having students research them in order to develop a better understanding of the importance and the logic of particular topics, could prove particularly engaging for students who tend to perceive mathematics as a meaningless manipulation of symbols. This article describes how to introduce a pedagogy that combines history and mathematics for remedial mathematics courses: mini-assignments that combine history and mathematics topics are shared, and their benefits are discussed. An end-of-semester survey in combination with students’ essays helps assess the success of this approach.

Keywords: History of Mathematics, Remedial Mathematics.

Reem Jaafar holds a PhD in theoretical physics from the CUNY Graduate School (2010). She received several fellowships from the CUNY Graduate Center including the very selective Mina Rees dissertation fellowship. In 2010, she joined the Math, Engineering, and Computer Science Department at LaGuardia Community College as an assistant professor and was promoted to associate professor in 2013. During her tenure at LaGuardia, she was the recipient of three grants, cofounded the Math Society, invested in students’ excellence at LaGuardia by training them to compete in regional and national mathematics competitions, and by organizing STEM talks and workshops. She also supervises undergraduate student researchers and conducts in-depth pedagogical research about effective classroom practices in mathematics education at all levels. In 2013, she was appointed the faculty coordinator of the mathematics tutoring center and more recently she became the coordinator of the Academic Peer Instruction Program. She has coauthored 12 papers in peer-reviewed journals and has presented her work in theoretical physics and mathematics pedagogy at over 14 conferences. Reem’s current areas of research are nanomagnetism and mathematics pedagogy.