

Pilot Program: Infusing Rubin Education into First-Year Seminar

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Dr. Jaskirat Sodhi is interested in first-year engineering curriculum design and recruitment, retention and success of engineering students. He is the coordinator of ENGR101, an application-oriented course for engineering students placed in pre-calculus courses. He has also developed and co-teaches the Fundamentals of Engineering Design course that includes a wide spectra of activities to teach general engineering students the basics of engineering design using a hands-on approach which is also engaging and fun. He is an Institute for Teaching Excellence Fellow and the recipient of NJIT's 2018 Saul K. Fenster Innovation in Engineering Education Award.

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Dr. Ashish Borgaonkar works as Asst. Professor of Engineering Education at the New Jersey Institute of Technology's Newark College of Engineering located in Newark, New Jersey. He has developed and taught several engineering courses primarily in first-year engineering, civil and environmental engineering, and general engineering. He has won multiple awards for excellence in instruction. He also has worked on several research projects, programs, and initiatives to help students bridge the gap between high school and college as well as preparing students for the rigors of mathematics. His research interests include engineering education, integration of novel technologies into engineering classroom, excellence in instruction, water, and wastewater treatment, civil engineering infrastructure, and transportation engineering.

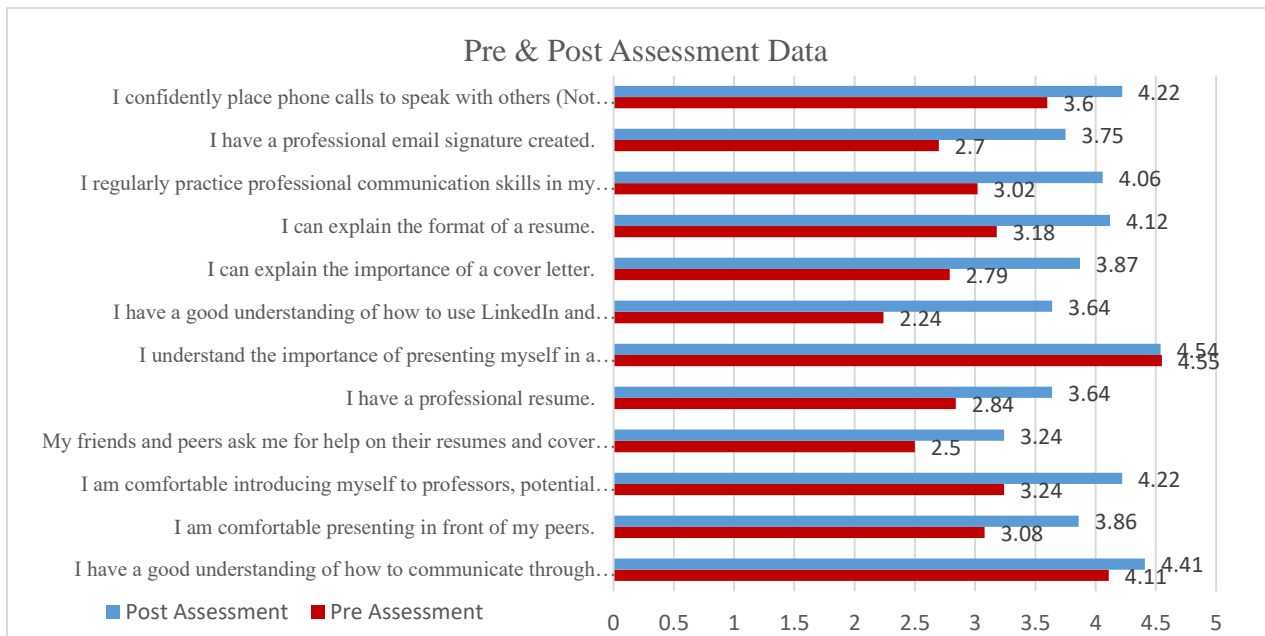
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Introduction

The purpose of this GIFTS and paper is to highlight the outcomes of this pilot program, explore the benefits of incorporating an online education resource, in this case Rubin Education and, areas for future improvement. Over time, multiple stakeholders, including employers, have identified that recent graduates of science, technology, engineering, and mathematics (STEM) programs could improve their communication and professional skills to be better prepared to enter the workforce. This feedback refers to both written and oral communication skills.

In an effort to improve the communication and professional skills of first-year engineering students we collaborated with Danny Rubin of Rubin Education. In Spring 2020 we piloted the use of the Rubin Education learning resource in two sections of our first-year seminar. Rubin Education is an online educational platform that hosts a wealth of content related to developing student's professional skills (e.g. networking, resume/cover letters, interviewing) as well as communication skills (e.g. phone and email etiquette, concise language, body language).

Results and Discussion



Over the course of the spring semester students in this cohort have been exposed to online learning modules as well as in-class discussions and exercises. Virtually every item the students ranked saw an increase in agreement, and confidence reported by the students who participated in this pilot program. More than half of the items ranked saw an increase in rank of at least 0.75 on the 5-point scale. Even though Rubin Education served as a helpful educational tool for our students, scalability of this pilot program relies on the availability of resources and buy-in from additional campus partners. This pilot program will be critical in future planning and implementation of strategies targeted at improving student learning, application of communication skills, and professionalism.