The M-Factor: An experiential learning student competition

Research Objectives
Professors Karamanis and MacKenzie examined whether the M-Factor student competition was a valuable learning experience that helped develop engineering students' non-technical skills.

Detail
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Bio
Prof Theomary Karamanis is a multiple award-winning communication consultant and educator with 20 years of global experience. She is currently a full-time Senior Lecturer of Management Communications at Cornell University. She has served as the Chair for the Global Communication Certification Council and was also the founding Chair of the IABC Academy.

Prof Allan MacKenzie is an award-winning Assistant Professor of Leadership and Management at McMaster University W Booth School of Engineering Practice & Technology. He purposely transitioned into academia after a successful industry career. As practitioner-academic, he is a seeker and sharer of researched-informed workplace ecology dynamics, which inspire human flourishing and successful organisations.

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Collaborators
The researchers express sincere gratitude to the faculty, industry professionals and Working Improv facilitators who volunteered their time during the event. Special thanks to the then Ambassador of the competition, Alan Murray.

References


Personal Response
What surprised you most about students’ reactions to the competition?

MacKenzie: I was impressed by the students’ effort and determination during this extracurricular event in conjunction with all their other academic accountabilities. The energy throughout both days of the competition was inspiring to be around. I have to acknowledge the courage of all the student participants who stepped out of their comfort zones to reveal and expand their communication and interpersonal talents.

Karamanis: This was an absolutely fantastic experience for both our students and for us as faculty. I was so inspired by the results that I replicated the competition at Cornell University’s business school, transforming it into the C-Factor competition (measuring communication skills of business school students). I believe that this experiential learning activity is extremely promising and worthy of replication in different academic environments.
The M-Factor
An experiential learning student competition

The time-honoured method of experiential learning – learning through experience, by discovery, exploration, and reflection – has been given a modern twist by academics in North America.

Engineering management programme students from the W. Booth School of Engineering Practice & Technology at McMaster University in Ontario, Canada, were invited to take part in a reality TV show format, namely the ‘M-Factor’ student competition. The aim was to provide a challenging but fun extracurricular activity which would enhance students’ business and management skills, particularly in communication, problem-solving, teamwork, and collaboration.

Professors Theomary Karamanis and Allan MacKenzie developed the competition in line with the theory of experiential learning advanced by the American educational theorist David Kolb. In the 1970s and 1980s, Kolb proposed a model of experiential learning that comprised concrete experience, reflective observation, abstract conceptualisation, and active experimentation. According to Kolb, the first part of an educational process is when the learner encounters a new experience. They then reflect on it and begin to form new ideas about it. The final stage is when they use and adapt the experience to other situations.

In using experiential learning theory to inform their M-Factor competition, Karamanis and MacKenzie had three central research questions. They wanted to find out how students felt about a real-life experience that took them out of their ‘safe’ academic environment. They also aimed to discover whether students valued learning gained from a competition involving non-technical skills, and to see how students’ perceptions of their own abilities compared with the evidence provided by the competition and the judges’ evaluation.

THE COMPETITION

With cash prizes of $1,200, $800 and $500 on offer for the top three finalists, the M-Factor competition took place in 2015 and was open to all undergraduate engineering students. Held over two Saturdays, students faced two individual and group challenges each weekend. A total of 54 students registered for the event and 24 turned up for the auditions and took part. Most contestants were male (81%), and the largest proportion (43%) were fourth-year students.

In the first week, students’ communications skills were tested by asking them to give a five-minute professional presentation on a relevant subject of their choice. The judges – academics who included Karamanis and MacKenzie – assessed the presentations in real-time and either rejected contestants or gave them a ticket to the next round. The students were then interviewed on camera about their audition experience. Of the 24 who entered the competition, 18 passed to the next round.

The competitors were next presented with a group challenge to test their teamwork and collaboration skills. Divided into three groups, students had to devise a construction which would protect an egg and allow it to be safely dropped from a substantial height. Students believed they would be assessed based on the innovation of their construction. Much to their surprise, after the egg drop activity, they were asked to complete evaluation forms on their own and fellow students’ performance. Judges ultimately evaluated teams based on teamwork and interpersonal communication skills. The participants with the lowest scores on each team were voted out of the competition.

The next Saturday began with a group exercise to test the remaining 12 students’ analytical and problem-solving skills. Participants were again put into three groups and this time given a business case study which outlined a business problem. The group task was to work together to identify a solution and orally present it to the judges. The teams were then evaluated by the judges, who also held feedback sessions with participants. Contestants knew that either all members of their group would pass on to the final round, or none.

The eight remaining competitors took part in the final round of the competition, which was an individual challenge designed to assess participants’ time management, critical thinking, and oral communication skills. They were each put in the role of a media spokesperson for a fictitious company and, after 15 minutes’ preparation time, were asked to conduct a ‘press conference’ in front of the judges. The judges scored participants for their performance and the three students with the highest scores won the competition.

The extracurricular activity took students outside their comfort zone and greatly increased self-awareness of their business and management skills.
RESULTS
In addition to the competition, Karamanis’s and MacKenzie’s research design comprised pre- and post-competition surveys to find out more about participants’ backgrounds, why they took part, how they rated their management and business skills, and what their experience of the competition had been. The research also included analysis of the material gathered by the judges from the competition.

Results showed that before the competition, most participants had taken some business / management courses, with 19% having taken more than eight courses. The top reasons for wanting to take part in M-Factor were because ‘it would be a good learning experience’, ‘it sounds like fun’ or they felt that they had ‘the management factor’.

Asked about their communication skills before the competition, 70% rated themselves as ‘very good or excellent’ and, regarding time management and collaboration, 80% rated themselves as ‘very good or excellent’ in both areas. The highest pre-competition confidence scores were in problem-solving, with nine out of ten students saying they had ‘very good or excellent’ skills in this area. Participants were less confident about winning, with a majority 71% estimating that they would pass the audition stage and 19% saying they were ‘very likely’ to win the overall competition.

Following the competition, participants were asked to describe their performance overall and most were far less optimistic than before. No one answered ‘excellent’, 36% responded ‘very good’, 14% ‘good’ and 36% ‘satisfactory’. Students’ assessments of their communication skills were also lower, with 25% rating themselves as ‘excellent’ in oral communication, 30% in written communication, 25% in time-management, and 40% in teamwork and collaboration.

Regarding their overall experience, 72% of students said the competition met or exceeded their expectations and 57% said it was more enjoyable and exciting than expected. 85% of competitors ‘strongly agreed’ that it was good learning experience, 62% ‘strongly agreed’ that it had given them a better understanding of their management skills, and 69% said their management skills had improved as a result of taking part. All participants said they would recommend it to other students and would take part again if they had the chance.

CONCLUSION
Developing professional skills in business and management alongside technical, academic capabilities is vital if students are to be able to make a positive contribution to employers and help to solve the world’s problems from the beginning of their careers.

All participants said they would recommend the competition to other students and would take part again if they had the chance.

The majority of participants (85%) ‘strongly agreed’ that the M-Factor competition was a good learning experience. The M-Factor winner (top right) and finalists (bottom).