GIFTS: Time Management as a Tool in a Stress Toolkit for First-Year Engineering Students

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Laura Gelles is a teaching assistant professor in the Engineering Fundamentals program at the University of Tennessee Knoxville (UTK). Her previous work has focused on persistence and retention of engineering students, integrating social and environmental context into technical engineering curriculum, and mentoring and career resources for engineering graduate students.

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Laura returned to academia, as a Professor of Practice in the Department of Industrial and Systems Engineering Department at UTK, after over 25 years of working in locations across the country and raising a family. She held engineering and manufacturing leadership roles with a variety of private and public companies, including President/Owner of a developing children's discovery museum, which brought outreach programs to underserved populations.

Collaborating across communities, industries, and academic disciplines and developing innovative, effective methods of actively involving learners are both integral parts of her efforts and success.

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Introduction

Time and stress management are skills that are critical to the success of first-year engineering students because of the higher workload and rigor in engineering programs. However, some students struggle with these skills because they already believe their skills are adequate. Compounding this, these skills are rarely explicitly taught within the engineering curriculum. To counter this, we had our students create a personal "Stress Toolkit" where time management is a key component to handling their stress. This GIFTS paper briefly describes this implementation.

The Course

EF-141 is a four-credit first-year engineering course at the University of Tennessee intended to increase persistence and provide a pathway for non-calculus ready students to take first-year engineering classes. The course's curriculum includes content on physics (e.g., kinematics, forces), modeling with Excel, and student success topics (e.g., communication and goals, campus resources, career and major exploration, etc.) to equip students for the first year. This course was first piloted in 2021-2022 and further information about this course is provided in [1], [2].

Student Success Content: Time Management and Stress Management

While students may not recognize or acknowledge that their time management skills are lacking, they can better recognize when they are stressed out. Time Management, which was previously taught on its own, was reframed as a way to manage student stress. We created several learning pages on our LMS about how stress impacts students and examples of specific tools they could use to mitigate such stress (e.g., connecting with others, self-care), which led directly to previously created content on time management skills.

Implementation

We initially piloted this change as an asynchronous session where students were expected to read learning pages and complete typical time management assignments such as a time tracker and reflection. The stress toolkit was mentioned throughout the semester and asked about in a reflection at the end of semester. The next implementation explicitly incorporated the toolkit into in-class lecture and several assignments throughout the semester including an assignment to develop the toolkit, reflections on how they plan to mitigate stress during exams, and a workshop on coping with exam performance. To further impress on students the importance of the toolkit, it was strategically brought up in activities related to exams (e.g., a final exam question).

Preliminary Feedback

Feedback from students' assignments and anecdotes has been positive. When asked what change they have made that most significantly impacted their well-being, 79% of 145 students reported something mentioned in the Stress Toolkit and 45% mentioned a time management strategy.

Future directions

Further integration and expansion of this toolkit is planned for the current course and for the next course in their first-year sequence into additional student success assignments and lectures.

References

[1] D. K. Maczka and E. J. McCave, "WIP: Integrating Computation within an Engineering Physics Course," in *Proceedings of the 14th Annual First-Year Engineering Experience (FYEE) Conference,* Knoxville, TN, USA, 2023.

[2] E. J. McCave and D. K. Maczka, "WIP: A focus on well-being to increase non-calculus ready students' problem-solving self-efficacy," in *Proceedings of the 14th Annual First-Year Engineering Experience (FYEE) Conference,* Knoxville, TN, USA, 2023.