Developing effective early interventions for the struggling first year student to optimize both academic achievement and wellness

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Abstract

Background:
Identifying struggling medical students early in the first year of the curriculum can be accomplished by examining pre-matriculation data and monitoring early performance on formative and summative examinations. However, developing effective interventions for both improving academic performance and enhancing personal wellness is more challenging, as each at-risk student has a unique set of cognitive skills, academic foundations, study habits and life circumstances.

Program Description:
At the TUTHSC El Paso Paul L. Foster School of Medicine we have implemented several supportive approaches; including mentoring and study skills coaching, near-peer tutoring, a faculty-assisted small tutorial program (FAST Program), and learning communities consisting of Colleges with direct faculty engagement. These approaches have proved complementary, providing students with a supportive learning environment to help them rapidly develop academic skills for successful navigation of the curriculum.

We have generated several sets of student and faculty survey data for evaluation of near-peer tutoring, the FAST Program and the College system. Overlap and synergy between these varied approaches are apparent, along with important gaps that can inform further development. In particular, the FAST Program shows great promise in building important relationships between faculty and struggling students that can significantly reduce stress and stigma for students while rapidly ramping up their content mastery. We are developing instruments to formally assess outcomes of these interventions by comprehensive longitudinal tracking of student achievement.

Data informing intervention strategies for first-year students

(A) Prematriculation Matrix

- Overall GPA
- Science GPA
- MCAT Score
- School attended / Major
- Non-traditional student

(B) Exam performance Semester 1

- Unit 1 Summative
- Unit 2 Summative
- Unit 3 Summative

Criteria used to identify appropriate intervention strategies for first-year students.

(A) A weighted pre-matriculation matrix is assembled in the Office of Admissions to provide identification of target students for the Academic Support Program to reach out to and assist.

(B) Once the curriculum has commenced, performance on a series of weekly formative exams is monitored, culminating in pass / fail summative exams. The fall semester includes 3 units for the primary, integrated course, the Scientific Principles of Medicine (SPM).

Complementary support mechanisms for the struggling first-year medical student

(A) Academic Support Program
- Office of Student Affairs
- Office of Student Services

(B) Colleges

(C) FAST Program
- Faculty mentoring
- Online professional support
- Learning Community
- Structured small-group tutoring with discipline-expert faculty

Parallel and overlapping support mechanisms for struggling first-year students.

(A) The Offices of Student Affairs and Student Services offer a formally supported Academic Support Program, including full-time advisors and administration of a near-peer tutoring program staffed by second-year students. A College system is in place at the Paul L. Foster School of Medicine to provide students dedicated faculty mentors and a Learning Community environment, with an associated discussion-based Colloquium course that covers a variety of study and learning topics, and several sessions on student wellness. (C) The FAST Program, a dedicated tutorial program to engage students in small groups (3 or smaller) with a faculty discipline-expert. These resources, combined, provide a tight support structure to pull struggling students toward the most effective set of interventions, with an emphasis on minimizing stress and stigma and maximizing academic success and personal wellness.

Implementing intervention strategies

- Prematriculation Matrix
- SPM Unit 1 Introduction to Health And Disease
- FAST Program

Faculty-Assisted Small Tutorial (FAST) Session Design

- Attendees: 2-3 students and one faculty member
- Material overview: content from previous week’s SPM course
- Students receive invite and RSVP
- Students identify strengths and weaknesses and bring 1-2 questions addressing their weaknesses
-FAST Program sessions are designed to review material within an SPM unit from the previous curriculum week. Students are sent a schedule / invite and are asked to RSVP so that sessions can be designed with 3 students per faculty tutor. This group size is considered optimal for metacognition and for promoting self-regulated learning. Students are asked to reflect in advance on their strengths and weaknesses with the material and to prepare several questions to be addressed in the FAST session. The session dynamic is focused on student engagement, sharing how each student thinks about concepts or problems and identifying any flaws.

Feedback from students on their experience with the FAST Program

- What do you feel worked well in the FAST Program? Honestly the FAST program made me feel connected to the faculty for the first time. I really enjoyed being able to discuss not only SPM material with the FAST Program faculty, but also other areas in which I was really struggling to figure out on my own. I think that FAST is an excellent opportunity to address questions to your professors when you might not feel comfortable doing them in class. It's also an opportunity to take a different approach to learning which is very helpful when you might have specific topics that you want to touch on.
- Would you have done the FAST Program for your first semester? If yes my sister had done it and I no longer had to wait till the end of the semester to ask my questions. This was a fabulous program! It really helped motivate me and the small group setting with the professors was just what I needed.
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Conclusions

By refining this unique multipronged approach at student academic support we hope to offer students both timely and efficient interventions that can maximize their chances for success. By continual promotion of a robust learning community, we hope to create an optimal environment for both academic achievement and personal wellness.

References

5. Mihail, T., et al., The struggling student: A thematic analysis from the self-assisted small tutorial (FAST) program. Faculty Assisted Small Tutorial Program, including full-time advisors and administration of a near-peer tutoring program staffed by second-year students. The struggle is more challenging, as each at-risk student has a unique set of cognitive skills, academic foundations, study habits and life circumstances. The fall semester includes 3 units for the primary, integrated course, the Scientific Principles of Medicine (SPM).