NORD GRANT PROPOSAL

VINCENT GRAZIANO
DIRECTOR OF SOPHOMORE MATHEMATICS

Abstract. The purpose of this proposal is to increase student engagement in learning, provide feedback on student learning skills, and increase informed on-the-fly adaption of courses. This will be done by developing software that collects data and then provides actionable metrics to both the lecturer and the students. General engagement is targeted to increase by way of deeper student-professor relationships. The software will additionally give students a familiar and safe venue to connect with the professor. An intensive training course on increase my ability to make deep interpersonal connections will also serve to increase student engagement.

1. Need

Increasingly so there is a need and desire to get STEM students to "be engaged" both in the lecture halls and the course at large. My experience and research along these lines has found that students are often in need of a *connection* with the professor before deciding, or perhaps even before being ready, to engage in the course. That is, *connection* is a quality on which *engagement* is founded. Even the most potentially engaged students are easily estranged when the professor is aloof and unreachable. Conversely, there are many students simply yearning for the right one-to-one connection with a particular professor to awaken their engagement and define their Undergraduate years (See Chamblis, "How College Works").

Some of the key challenges I have observed:

(1) How to give student's a "voice" throughout the semester?
(2) How to adjust the course to "accommodate" concerns that have been voiced?
(3) How to become more of a person with whom others readily "connect?"

2. Proposal

The first two challenges are to be addressed by the development of software that will: collect data from students on a class-to-class basis, parse the data, provide a quick analysis of the data via learning and study metrics that will also be developed, and then provide digests to both the professor and the student.

The software will also collect open-ended student feedback to address any larger issues that arise. The purpose of this part is to help build a more personal connection with the student. This depersonalized form of interaction has proven quite effective at establishing an initial connection with the student. More on this below.

For the development of interpersonal skills and their deployment in student-professorial roles I will attend an intensive training course. The goal of the course will be to train patterns of thought, behavior, awareness, and mindfulness when it comes to communication.

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3. Expected Impact

Simply to have more and deeper connections with my students. As a result of more a profound connection I expect students to have a truer, deeper engagement in the course material and perhaps even as members of the university. All this to awaken the latent lifelong learner inside. An inescapable side result will be greater success in my course, other's, and life.

The current generation of undergraduates communicates freely and openly using social media. In many ways it has become the preferred vehicle to relate to others and to stay connected. Already in preliminary trials I have found students communicating details of their personal lives to me through the surveys that I previously not been privy to. This all points to having a deeper student-professor relationship.

With regards to the training course, I expect these efforts to immediately serve the student body. Such training will for me have deeper and more profound consequences than a course in say 'methods of running a classroom.' The experience of honing these skills in a focused intensive setting will also serve me as a mentor of other instructors. I will be able to better demonstrate the importance of connecting with the students as well as, potentially, how to go about doing it.

4. Outcome Measurement

I plan to measure "outcomes" not only at the end of the semester but during the semester as well. So much of the outcome measure that will be used to evaluate this project is tied up in the actual project itself. That is, after each lecture I will get feedback from the students. This feedback will also be used to track the success of the project.

I plan to make use of student self-assessments for a majority of the feedback. Particular measurements of interest will be: how much time was spent on a topic, how much then used the lecture notes, how much they took notes on the notes. These measures will be compared to how well they answered a related question from the midterm. Measuring time-spent on a topic is a great way to keep track of students' engagement in the course.

In addition some recording of students and of myself sporadically throughout the semester will be used to track student engagement, to grade styles of instruction, and to serve as instructional material for mentoring.

Sometimes students are not good judges of whether an intervention has had an expected impact. Sometimes instead they are expressing how the intervention made them feel. Some carefully designed surveys will try to tease the two issues apart.

That said, I plan also to measure the general mindset of each student. This will be measured at the beginning of the course and at the end. Can the mindset of a student be changed simply by creating possibility in their mind? That is, can a student's perspective on the notion of skill, talent, or ability to learn be changed by simply connecting with them in such a way that makes learning a more organic, sublime, and enjoyable process?

5. Source of Funding

Non-salary budget funds are currently very tight in the Mathematics department. To not further strain the resources of the department the chair and I kindly request the needed funding for this project through a NORD grant.

6. Budget

The budget proposal is for

Course to Developing Interpersonal Relations	$1600
Travel Expenses	$750
Room&Board	$750
Undergraduate Assisstant, Programming	$400
Book and Related Resources	$100
Recording Equipment	$400
Total	**$4000**

I have previously received one NORD grant in the amount of $2117.98 for the project: *Using Technology to Increase Thought*