In spring 2020, faculty across the country stood up to the challenging task of not only transitioning and adapting to online modes of instruction but also multi-tasking through learning new technology, advising, having online office hours, attending official meetings, responding to students who would request Zoom meetings outside of office hours, and much more. Everyone came together with one underlying motive—students' benefit. Now, as we look forward, we need to make decisions based on a long-term perspective. Faculty need to walk a tightrope of keeping students motivated while not letting their own morale down. Student motivation will be a major concern, irrespective of which study model is adopted: online, blended, hybrid, or a myriad variation. For simplicity, I have clubbed all variants of remote/online learning modes and termed them as Pandemic learning modes. This article delves into approaches for constructive student engagement that can help raise student motivation.

**The Boomerang Principle**
I believe teaching is based on the “Boomerang principle,” which implies what one gives, one gets in return. One may also ideologically relate it to Newton’s scientific law in which every action has an equal and opposite reaction. But the point to be made here is that the more effort that is spent to motivate students to keep students constructively engaged, the better the chances are for students to reciprocate, to get involved, and to progress. And this does not end here. Continuous student involvement and engagement adds fuel to teacher motivation, which completes the circle. In order to live and practice this Boomerang principle, there has to be mutual trust, mutual admiration, and mutual motivation.

In the current pandemic scenario where teachers must deal with pandemic learning modes, student motivation is of paramount importance. I would like to borrow from Maryellen Weimer’s [3] synthesis of Paul Pintrich’s [2] meta-analysis on motivation and how these principles can be further adapted in various pandemic learning modes to raise student motivation.

1. **Adaptive self-efficacy and competence perceptions motivate students.**

   Weimer’s simple translation: “If students believe they can do it, they are motivated to try. The first implication for teachers involves the feedback they provide students. It needs to be accurate... If students are trying, any progress, even very small amounts of it should be noted.”

   “A second implication for teachers involves the difficulty of the task. It needs to be challenging but something that can be accomplished.”

Designing tasks that are challenging for accomplished students while not overwhelming other students is already a tightrope to walk under regular circumstances, and even more so with pandemic learning modes. Teachers not only have to select tasks judiciously while designing tasks but also need to be aware of the middle-path threshold. Designing anything below this will serve as a demotivating factor for students who are above grade level. Designing anything above this will be too challenging and again serve as a demotivating factor for students who are below or near average grade level. This is where technology and visual tools come into play. Bundling up tasks with online technology aids will help students below the grade level to keep them motivated. Providing an option to obtain extra credit on performing additional challenging tasks will keep students above the grade level motivated. Enablement of extra credit for going beyond the ask, bundled with precise feedback, will also work in a two-thronged way as it will also address the first implication.
Extra credit will act as a motivator for students above the grade level to accept challenging tasks, whereas students below the grade level will be motivated to complete the task or follow feedback for improvement.

2. **Adaptive attributions and control beliefs motivate students.**

*Weimer’s simple translation:* “...If the student doesn’t think effort makes a difference, they won’t expend any. One important implication for teachers: there’s a need to talk about how learning works, the importance of effort and the control students do have over what and how they study. Another implication: students’ motivation increases when they are given the chance to make choices and exercise some control over learning...”

Students get motivated when they know their voices are being heard and there is a process for student feedback, not just after the course is over but also during the course. This will become crucial with pandemic learning modes when student voices and feedback will have to be incorporated into the course design. Flexibility will be of key importance. Student feedback on various topics like the progress of course, course content, associated tasks, online aids used, etc., should be considered at regular intervals, and their suggestions, if feasible, should be incorporated. This will keep students motivated and involved in the course.

3. **Higher levels of interest and intrinsic motivation motivate students.**

*Weimer’s simple translation:* “Research makes a distinction between personal and situational interest. Personal interest represents the attraction a student feels for a content area—what’s motivating the decision to major in a particular field. Situational interest refers to positive feelings generated by the learning tasks or activities themselves...Students can catch motivation from a teacher who is obviously, unabashedly in love with the content and teaching.”

In short, motivation is infectious. Motivation begets motivation. A positive flow of energy from the teacher is definitely going to be caught on by the students and vice versa. During these challenging times, it becomes even more necessary to diligently select online, in-person, or hybrid tasks that are out of the box and motivate students.

4. **Higher levels of value motivate students.**
Weimer’s simple translation: “The motivational issue here is straightforward. Do students see the relevance, the importance of what they’re being asked to learn and do?...Teachers should, at multiple times and in multiple ways, make clear the importance, usefulness, and relevance of the content and associated activities.”

Students should understand the value attached with what they are learning and where it will be applied in their future lives to keep them motivated. Instead of teachers telling students the importance of each underlying topic, it would be beneficial if students are directed to find out through directed readings and experiential learning the relevance and future application of each topic. During these challenging times when unemployment is on the rise, students should be asked to list and find out more about their ‘dream employers.’ Following this, instructors could ask students to discuss how these ‘dream employers’ utilize or apply the current course topics in the workplace, and how the current course topics might be part of their future employment interview process.

5. Goals motivate and direct students.

Weimer’s simple translation: “And students aren’t motivated solely by academic goals, like those related to mastery (comprehension of content) and performance (grades)...For teachers, one implication involves greater use of cooperative and collaborative group work designed so that it includes opportunities to attain both social and academic goals.”

The importance of collaborative learning can never be over-emphasized. In the case of pandemic learning modes, these are akin to the wooden pole in the hands of the tightrope walker. Pandemic learning modes need to be accentuated with online collaborative tools. Google offers various tools for online collaboration. For those in the computer science field, there are online tools available that allow team or pair collaborative programming [4]. Online games, when coupled with learning, provide a wonderful study aid to reinforce course information [5].

In pandemic learning modes, teachers will have to adorn a special hat of a motivator, akin to a cement-mixer! A motivator who facilitates the right mix of tasks and flexible grading schemes, and couples them up with the right mix of online collaborative technology to churn out positive energy and a great learning experience for students. But what will keep this motivator rolling? It will depend on the students’ motivational energy fed back to the
teacher via their constructive progress, response, and enthusiasm. Any breach in the motivational cycle will be deconstructive to all.

Dr. Shruti Nagpal is an assistant professor in the computer science department of Worcester State University, Massachusetts. Previously, Dr. Nagpal has worked in Amity University, India and Tata Consultancy Services, India. Dr. Nagpal is an experienced academician with a presence in academia for the last 12 years; with a prior demonstrated history of working in the IT industry for five years. Her teaching pedagogies include active learning techniques like the flipped classroom and Process Oriented Guided Inquiry Learning (POGIL). She is a strong research-oriented professional with presentations and publications in International Journals and Conferences.

References


