

Notes from the Guest Editor

Special Issue Education in the Age of Anxiety

Eric Matte, M.S. - Landmark College

It's all around us. It's in our offices, hallways, classrooms and meetings. It can cripple students and perplex our faculty and administrators alike. Regardless of the context, person, or purpose in our everyday lives, anxiety seems more pervasive than ever as it ripples across the higher education landscape. Additionally, the research shows how anxiety affects and inhibits our perception, confidence, information processing, memory and most importantly, our ability to learn. Knowing the scope and depth of this inhibitor, how are students, faculty, and administrators dealing with this phenomenon of anxiety? How can today's higher education institutions adapt to this increased anxiety, and be better equipped to assist today's students and continue strengthen our inclusive and diverse campuses?

On June 7th 2019, the New England Faculty Development Consortium held its spring conference at Landmark College entitled, *Education in the Age of Anxiety, Rescuing the Canary from the Coal Mine*. The conference filled to maximum capacity and attendees were looking for more; more information, more strategies for coping with anxiety in the classroom, and more support from their colleagues as they sought to address students' emotional health. I am proud to say, this special edition of The Exchange developed from the curiosity and interest expressed that day and the desire to further help our colleagues in higher education grapple with increasing rates of anxiety among our college students. The issue opens with an exploration from our keynote presenter, Dr. Jerry Schultz, Clinical Neuropsychologist and Lecturer in Psychology at the Harvard Medical School, who shares research about anxiety rates, potential causes, and his thoughts and advice for addressing student. Other contributors have shared specific strategies and suggestions for working with the increasing numbers of students with anxiety at our institutions. Personally, I would like to extend my sincere gratitude to all the participants during the Education in the Age of Anxiety Conference, the authors featured in this issue, and Dr. Jerry Schultz, who's expertise helped shape this incredible conference and this special Exchange edition. Last, I would like to recognize the Exchange Editor, Lori Rosenthal, and all the Board Members of the NEFDC for their dedication to the growth and development of higher education.

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Rescuing the Canary in the Coal Mine: Addressing Mental Health on College Campuses

Jerome J. Schultz, Ph.D. - Harvard Medical School

The Concern:

The incidence of mental health problems among college students has been steadily increasing in recent years. This trend presents a significant and rather universal challenge for colleges and universities in the United States. In a Chronicle of Higher Education survey (Rubley, 2017) presidents and student affairs administrators listed student mental health as their number one concern. The situation is so ubiquitous and has such significant and varied ramifications, that many campus leaders and faculty members have characterized it as a crisis. (Xiao, et al. 2017).

Research efforts consistently underscore the validity of this concern. For example, a study completed at Penn State University (Center for Collegiate Mental Health, 2018), using data collected between 2010–2015, revealed a steady increase in self reports of the most frequently rated conditions: generalized anxiety, depression, social anxiety, family distress, and academic distress.

According to the American College Health Association (ACHA) National College Health Assessment, about 10% of college students surveyed in 2018 reported some type of psychiatric disorder. Three out of five said they experienced overwhelming anxiety, and two out of five reported that they were too depressed to function.

Data from the Healthy Minds Study (Eisenberg & Ketchen Lipson, 2019), one of the only annual surveys of college and university populations that focuses exclusively on mental health and related issues, suggests that about one in three students (nearly 7 million of the 20 million students enrolled in colleges in the US) meet criteria for a clinically significant mental health problem.

According to a large-scale study published in the Journal of Abnormal Psychology, major depression among adolescents (12–17) increased 52 percent between 2005 and 2017 (Twenge, J., 2019). Depression among young adults (18–25) rose 63 percent between 2009 and 2017. This study, which looked at data from

over 200,000 adolescents and 400,000 adults, determined that the rate of young adults with suicidal thoughts or other suicide-related outcomes increased 47 percent from 2008 to 2017.

Twenge regards this as a “generational shift,” noting that similar findings about depression and suicide were not noted in older adults. This intriguing finding suggests that the increase in symptoms is unique to students who were age 12 to 25 between 2005 and 2017--many of those who are currently enrolled in the nation’s colleges and universities.

According to The Anxiety and Depression Association of America (ADAA) anxiety disorders are the most common mental health condition in the U.S. today. It is significant to note that a majority of those affected by an anxiety disorder will experience their first episode before the age of 22. This means that many high school students have this condition as they enter college, or that they develop symptoms after they arrive on campus. Anxiety can have a significant impact on academic performance and interpersonal relations, but only about 10–15 % of these students seek services at their counseling center (Roy, Nov.17, 2018). The lack of intervention on many college campuses compounds the problem, as untreated anxiety disorders often develop into more serious forms of emotional disturbance, notably clinical depression.

A brief entitled “Investing in Student Mental Health: Opportunities and Benefits for College Leadership” published by the American Council on Education (Ketchen Lipson, et al., 2019) asserts that “poor mental health hinders students’ academic success; untreated mental health issues may lead to lower GPAs, discontinuous enrollment, and too often, lapses in enrollment. An institution’s investment in student mental health is important for the social, educational, and economic well-being of students, their campuses, and broader society.”

The Scope of the Problem

An article entitled “Addressing Mental Health Challenges on College Campuses” (Staglin, 2019) points out that the burgeoning numbers of emotional problems in students has resulted in an “unprecedented” need for mental health supports on college

campuses. The number of students accessing campus-based mental health services increased by an average of 30-40% and the use of “rapid access” or crisis level mental health services increased by 28% while enrollment grew by less than 6% (Center for Collegiate Mental Health, 2019). Thirty-five percent of the students accessing these services have experienced serious suicidal ideation, a number that has grown steadily over the last 8 years. The increase in services for acute mental health problems is understandable; it is a sobering reality that suicide is the second-leading cause of death among college students (NIMH). A troubling concern is that traditional individual counseling services on campuses decreased by about 8%. This suggests that students may be increasingly needing and accessing emergency services, but are less likely to receive long-term care on campus (Center for Collegiate Mental Health, 2018).

Looking for Causes: Why is this a bigger problem than ever before?

There are several reasons for the troubling increase in mental health symptoms in college students. Eighteen to twenty-one-year olds (referred to as “Gen Z”) make up the bulk of students on college campuses. More than 90 percent report that they have experienced at least one stress-related symptom in the previous month. Students in this age cohort, compared to adults overall, are more likely to feel stressed by mass shootings, increasing suicide rates, climate change, sexual harassment and assault reports, as well as political issues, such as the treatment of immigrant and migrant families (American Psychological Association, 2018).

Societal factors such as mounting student debt and uncertainty about future careers are of increasing concern to young people today (Staglin, 2019). Similarly, the increased use of digital media, and the related reduction in face-to-face interaction, may exacerbate mental health problems among college-age students (Twenge, et al. 2019).

Another factor that exacerbates stress and anxiety in college students is the impact of the transition from high school to college on perceptions of self-worth or status. A student who may have been one of the brightest and most successful students in high school may find that they are a “small duck in a very big pond” when they get to college. The student may face real competition for the first time in their academic life and may not know how to handle the stress this creates. In addition, many talented students have had little experience with failure throughout their pre-college years, and have thus not been inoculated against it. As a result, they are more likely to “crack than bend” when

faced with the threat of failure (which to them might mean getting a B vs. an A-) (Schultz, 2019).

Additional Causes of Stress and Anxiety on University Campuses

Journalist Sophia McClennan (2019) writes that it may be easy for some to blame the increase in mental health problems in college students on “helicopter parents,” smartphone culture, or an “outrageous sense of entitlement,” the fix for which would be to “suck it up, grow thicker skin and stop whining.” Thinking that the problem is “them,” she continues, minimizes the impact of the system or environment in which they live, which is “exactly what contributes to exacerbating college kids’ stress.” The research literature abounds with data-backed explanations for the increase in student stress and the decline of mental health. Here are a few of the possible culprits:

Sleeplessness

Researchers believe that lack of sleep is a factor in the increase in anxiety and depression among college students. Sleep deprivation also creates problems with the immune system, nutrition, and interpersonal relationships (American Academy of Sleep Medicine). According to Lawrence Epstein, MD, the past president of the American Academy of Sleep Medicine, two weeks of sleeping six hours or less a night, makes students “feel as bad and perform as poorly as someone who has gone without sleep for 48 hours.” Sleep deprivation also leads to impairments in learning and memory, both of which can have a negative impact on academic performance, resulting in stress and anxiety.

Guns and Violence on campus

According to an online Harris Poll (American Psychological Association, 2018), 75 percent of college-age students report that worrying about mass shootings (the reality or the potential) is a significant source of stress. To date, only 16 states do not allow concealed weapons on college campuses. Twenty-three states leave this decision up to local colleges and universities. Ten states allow concealed weapons on public campuses. One state, Tennessee, allows faculty members, but not students, to carry concealed weapons. The threat to campus safety posed by the dangerous combination of young people with suicidal ideation and access to firearms has been pointed out (Lambert, 2018). There are some who feel that the problem lies in the mental health of students, and not with the presence of guns, per se. While much debate and controversy surround this issue, the reality of campus shootings in recent years has raised the level of anxiety among students and faculty on many campuses.

As was pointed out earlier in this article, suicide is the second most frequent cause of death of college students. It is important to point out that firearms are the most common means of committing suicide in this age group (Valentine, 2019).

Poor Nutrition and Hydration

There has been an increasing focus on the relationship between poor nutrition and poor mental health. In order to function efficiently, the central nervous system, including the mechanisms involved in the stress response, needs key nutrients that are provided by diet (Wattick, et al., 2018).

Although students are generally knowledgeable about healthy nutrition, they often make unhealthy food choices (Abraham, et al., 2018). However, for many students, nutrition is not a matter of choice. Rates of food insecurity on college campuses have been repeatedly found to be much higher than the national average (Cady, 2014). This fact has significant implications for college campuses, especially those that serve students with limited financial resources, since limited access to healthy food is related to poorer physical and mental health. A student's worry about where to find food and how to pay for it may also be adding additional stress, and contributing to poor mental health. Among Gen Z adults (ages 18 to 21), 58 percent report eating too much or eating unhealthy food as a symptom of their stress (American Psychological Association, 2018).

Lack of hydration has also been shown to have a negative impact on physical and mental health. In a study that looked at the amount of liquids consumed by students, the average daily intake of fluids in both male and female students was lower than the amount recommended by national health organizations (Balaghi, et al., 2017; Yair, 2006).

Exercise

A study carried out by Northwestern Medicine® at Northeastern Illinois University found that more than 60 percent of college students report not getting enough physical activity (described as three or more days of vigorous exercise for at least 20 minutes or five or more days of moderate exercise for at least 30 minutes a week) (Spain, 2014).

Research has also demonstrated that participation in just a six-week exercise program resulted in reduction of symptoms related to anxiety and depression, as well as changes in perception of the relationship between mental health and exercise (Demers, 2013).

Sexual Freedom, Unwanted Sexual Experience and Sexual Violence

College life is generally associated with an increase in personal freedom and independent decision-making. It can also be a time of increased sexual exploration and expression of sexuality and sexual identity, all of which may be associated with increased stress. It is also unfortunately a time when a student may be the victim of unwanted sexual activity, stalking or intimate partner violence. Such experiences can lead to post-traumatic stress disorder, major depression, generalized anxiety disorder, and substance abuse. A survey of 6,482 undergraduate students currently enrolled at one of eight universities in New England was surveyed using items from the subscales of the College Persistence Questionnaire (Academic Efficacy, Collegiate Stress, Institutional Commitment, and Scholastic Conscientiousness). Victimized students reported lower academic efficacy, higher college-related stress, lower institutional commitment, and lower scholastic conscientiousness (Banyard, et al., 2017).

College expenses and future debt

A study published in *Anxiety, Coping and Stress* found that “those with greater financial strain perceived more stress, had more symptoms of depression, anxiety, and ill-health” (White, 2015). The reality of rising student debt affects the stress levels of many students (and their families). The latest statistics show that there are more than 44 million borrowers who collectively owe more than \$1.5 trillion in student loan debt. The average student in the class of 2017 owed \$28,650 (Friedman, 2019).

Racial/Ethnic/Gender Minority Students: Special Considerations

While this topic deserves discussion and exploration that goes beyond the scope of this paper, it is important to point out the need to address the mental health of students who are considered to be in the minority, either racially, ethnically or in terms of gender identity. Research consistently shows that there are significant disparities in college mental health treatment across race and ethnicity and that college students of color are more likely to have unmet mental health needs than their white classmates. (Lipson, 2018). Researchers have also found that racial/ethnic minority students were generally less likely to report mental health diagnoses than white students. Asian youth showed significantly higher levels of suicidal ideation and suicide attempts than white students. (Turnage, 2017). All minority students experience a high rate of multiple-source stress, and have been shown to be extremely vulnerable to the impact

of stress. International students may come from cultures that regard mental health problems as a weakness or a private affair, and may not seek or value mental health services. Students living outside their native country, far from family and familiar customs and foods, may experience heightened levels of stress, especially if there are high expectations placed on them to excel academically. In particular, Asian youth showed significantly higher levels of suicidal ideation and suicide attempts than white students.

Other factors:

While it is beyond the scope of this article to explore all of the underlying reasons for increased stress, I am listing several factors below that may create or exacerbate stress among students on college and university campus. It is important to put these on the agenda for further research and discourse.

Stress caused or exacerbated by:	The Impact
Guilt	"My parents (or others) are sacrificing so much for me to be here. I cannot disappoint them." "I am in college and my sibling is not/cannot."
The presence of emotionally fragile students and/or the impact of stress reduction practices	Comfort/therapy animals on campus, in classrooms or dorms (allergies, fears, responsibilities). Discussions about stress in classrooms that non-stressed students feel takes time away from learning. Non-collaborative classmates who do not share the load on group projects, or those who "over share," or radiate depression or anxiety
Existential Angst	Climate change, pollution, wars, other factors not directly under a student's control.
Political Tension	Interactions with classmates, roommates, faculty who do not share his/her/their political POV, or with whom they cannot have a reasonable discussion.
An Atmosphere of Relentless Competition, Unrealistic Expectations	The drive to do more and more. Join clubs, run for office, "ace" every exam, serve as TA, etc.
Religious or Cultural Differences, intolerance	Exposure to ridicule, abuse, aggression, graffiti, emails, etc. Not being able to wear clothing or symbols that signifies a particular belief. Afraid to speak up/out in class for fear of judgement, shunning, reprisal.
Surveillance	Colleges (or parents) turning student's phones into surveillance devices, monitoring student behavior, attendance, whereabouts. See "Life 360" https://www.life360.com
Drugs and Alcohol	Exposure, dependence, addiction, in self and classmates, families at home
Family/Home Stressors	Illness, absence, living at home vs. campus, having children, being pregnant while in college, divorce, sickness or disability in family. Relative in military. The challenges of commuting (time, money, transportation, meals, fatigue, social isolation)
Working/Financial	One or more jobs to support self or family; student debt
Learning Disabilities, ADHD, Autism or other Special Needs	Requiring and accessing special learning services, classroom accommodations, materials. Impulsivity, sensory overload, hyper-excitability, perseveration.
Other Health Conditions, medication	Effects of illness on cognition and emotion and behavior, side-effects of medication or therapies. Worry about reaction to use of prosthetic or mobility device.
Stigma Associated with Mental Illness	Having to explain oneself to classmates or faculty. Absences, unexpected behaviors, difficulty in social interactions, group work. Dealing with microaggression, inappropriate or insensitive comments about mental health. Leaving for or returning from a psychiatric facility.
Discontinuous Education	Short or longer term absence from class, causing learning gaps, social disconnections, having to deal with compounded incompletes. Shame. Development of school phobia.

The Consequences

In the 2019 National College Health Assessment report discussed earlier (ACHA-NCHA, 2019), the percentage of students reporting that their condition had a significant negative impact on academic performance in the last 12 months (i.e., lower grades, incompletes, dropping a class, or a disruption in research or practicum) were as follows: Depression 20.2%, Sleep Difficulties 22.4%, Anxiety 27.8%, and Stress 34.2% It should be noted that these four conditions ranked higher by far than any of the other 30 factors identified in that report.

The surge in the number of students presenting with serious mental health issues suggests that university-based mental health services will continue to be taxed, and that the increased presence of students with serious mental health needs is likely to have an impact on campus culture, both among students and faculty. In addition, students who have less severe mental health needs may find it difficult to get the services they need on campus. As a result, they will have to access community-based resources or personal therapists (if finances or insurance allow), or they will go without services and be at risk for an increase in the severity of their symptoms. Many will have to cope with lower-level chronic symptoms, while trying to navigate a challenging academic and social environment. This may affect interpersonal relationships in on- and off-campus residences, have a negative impact on academic performance, and may manifest as inappropriate or ineffective behavior (moodiness, inattention, aggressive reactions, etc.) in the college classroom. This translates to increased stress on faculty and student support personnel, who may be ill-equipped to handle such matters. More frequent and longer absences from class or campus may delay or derail a student's progress, and there may be financial implications for the college.

The Implications: Challenges & Opportunities

With regard to mental health and mental illness, colleges and universities face both a challenge and an opportunity. It has, unfortunately, become part of the landscape of college campuses. This problem will not go away, but it can be improved. While some colleges are struggling with the increasing numbers of mental health issues that affect student learning, other schools are responding to the challenge in creative and effective ways. In some cases, individual faculty members on campus are by training or inclination responding to emotionally stressed students in a sensitive manner. In this way, they are creating an environment that is inclusive and supportive of students who face mental health challenges. They are allowing them to take

advantage of the rich opportunities for growth and development that characterize a post-secondary or graduate education.

Some universities are taking a proactive approach to this burgeoning challenge, while others are still in reactive mode. Regardless of their status in this evolutionary process, enlightened college administrators and faculty understand that poor mental health can have a deleterious impact. The costs of not addressing the mental health needs of students are many, including lower academic performance and a diminished academic status, interrupted or decreased enrollment and a campus culture that is pessimistic and crisis-oriented. In an article entitled "The Rise of Mental Health on College Campuses: Protecting the Emotional Health of our Nation's College Students," the chief clinical officer of the Jed Foundation and assistant clinical professor at the Yale School of Medicine Department of Psychiatry outlines four ways in which campus leaders can take positive action (Roy, 2018). These are to:

1. Speak out about mental health—reduce stigmas and help students feel that it is normal to express mental health concerns and seek help.
2. Pursue partnerships to ensure a campus-wide, comprehensive approach to mental health care, promotion, and prevention.
3. Invest in making mental health services and programs accessible, affordable, and tailored to the needs of diverse students.
4. Listen and respond to student needs.

It is appropriate at this point to cite the recommendation of the Center for Collegiate Mental Health (2017) at Penn State University: "Institutions and counseling centers will need to work together to develop and offer a continuum of options to educate and support both students seeking counseling services as well as the general student body (e.g., prevention, education, self-help, and expanded treatment capacity)."

Guidelines for the Development of Programs and Services

The following action steps have been generated by the JED Comprehensive Mental Health Promotion and Suicide Prevention for Colleges and Universities, a program that guides colleges and universities through a collaborative process aimed at developing customized supports that enhance student mental health. (Roy, 2018)

- Teaching life skills
- Promoting social connectedness
- Identifying students at risks

Encouraging help-seeking
 Providing mental health and substance use services
 Following crisis management procedures
 Restricting access to potentially lethal means

This comprehensive framework can serve as a guide to support the emotional health of college students and the environments in which they live and learn. This program advocates for a holistic approach, which they believe can “promote their students’ ability to flourish—socially, emotionally, and academically.”

A link to a full description of the JED Campus program, as well as a brief video outlining the program can be found here:

<https://www.jedcampus.org>.

https://www.youtube.com/watch?v=fp_l8_fAN9k

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Five (not ten) teaching practices inclusive of students with anxiety

Amy Ballin, Ph.D. and Ellen Davidson - Simmons University

This article is based on the experiences of the two authors, Amy Ballin and Ellen Davidson. Together we led a workshop at the spring 2019 NEFDC conference titled “Five (Not Ten) Universal Design for Learning (UDL) Practices Inclusive of Students with Anxiety.” In this paper, we share the content of the workshop along with our own experiences and commentary on the challenges of creating a classroom inclusive of students with anxiety.

We use the phrase, “inclusive of students with anxiety” because the framework of Universal Design for Learning (UDL) suggests that we can create classroom environments that cater to a variety of learners based on adjusting and incorporating specific teaching practices. Commonly, our teaching practices may exclude or cause a stressful environment for students who struggle with anxiety. Anxiety is increasing among college students as one of the major mental health disorders. Dr. Schultz, keynote speaker at the NEFDC spring 2019 conference, noted that one in five college students experience depression or anxiety. There are numerous reasons that college students experience anxiety such as adjustment to being away from home, increased academic demands, difficulty managing time, lack of

sleep, racism, financial concerns, the stress of social media and isolation associated with cell phone usage (Cook, 2007; Shultz, 2019). Creating classroom adjustments to include students who might struggle with anxiety makes sense.

Although my specific focus in the past was not student anxiety, I (Amy Ballin) have long questioned how I grade participation. I had a rude awakening when my niece entered college with a diagnosis of social anxiety. At her first class, the professor explained the importance of class participation at this small liberal arts school. The participation grade counted for 25% of her overall grade for the course. Immediately, my niece added up the numbers. She would get a failing grade on participation because she was not going to speak in class. This would impact her final grade for the course.

Over the years, I (Amy) have attended workshops to figure out how to assign an objective grade to participation and created different systems to implement a “fair” rubric. When my niece started college, I became more aware of college systems designed for the “norm.” I realized I had to revise my relationship with class participation, as well as other classroom practices, to support students with anxiety instead of punishing them.

Many professors are struggling with similar dilemmas as more students are entering college with diagnosed and undiagnosed disabilities including anxiety, along with elevated levels of stress, that require support and accommodations in the classroom (Chandler, Zaloudek, & Carlson, 2017; Chiauzzi et al., 2008; Lombardi & Murray, 2011; Yusufov et al., 2019). High levels of stress are linked to poor academic performance and college attrition (Yusufov et al., 2019). Brook and Willoughby (2015) noted that social anxiety in college students is higher compared to the non-college population, and having social anxiety in college can negatively impact academic achievement. Further, Lombardi and Murray (2011) posit that faculty attitudes about accommodating students with disabilities can affect student outcomes.

College teachers need to educate a diverse group of students, and every learner is different whether or not they have a diagnosed disability (Chandler, Zaloudek, & Carlson, 2017). Often the student with anxiety is overlooked as he or she may not seek out accommodations. It is with this inclusive lens that we develop strategies to help all students succeed. Classroom practices that support students who struggle with anxiety also enhance the learning for all students. When Universal Design for Learning (UDL) practices are followed, there is often less need for individual accommodations (Lombardi & Murray, 2011). Chandler et al. (2017) explain that using UDL practices is a conscious effort to adapt the learning environment to address a wide range of learners.

In this article, we describe five specific strategies designed to reduce anxiety while serving all students. The title suggests that many of us can get overwhelmed with the many new practices presented to teachers to address the vast issues of today's students. So, we suggest trying just five practices. We believe these five are most important to help the anxious student and will also benefit all students. These strategies address various aspects of the college classroom experience, including the syllabus, classroom participation, using small groups, creating flexible policies, and supporting and normalizing self-help strategies.

Five Participation Strategies for an Inclusive Classroom

Practice #1: Design Multiple Versions of the Syllabus

Our first interaction with our students is often the syllabus. We sometimes send our syllabus out to our students before we meet them and then talk about it in the first class. Allowing for multiple versions of the syllabus can alleviate some anxiety. Students differ in what they prefer in a syllabus and how they

make sense of the syllabus. Some students like a single inclusive document that is sequential. Other students prefer the syllabus broken into multiple documents; in this version, Syllabus 1 might list all the assignments, Syllabus 2 might contain the class schedule, and Syllabus 3 might include background material about the course. For other students, the font size and use of bold and italics can change the way they access the material. Rather than construct many different syllabi, we prefer to ask our students what matches their need and to create an alternative syllabus if requested by the student after the first meeting. This encourages students to define and advocate for their needs, and also keeps us from doing unnecessary work.

Practice #2: Expand the Parameters of Participation

For many students with anxiety, class participation can be a major source of worry. If your class has a participation grade and/or an expectation of participation, this pressure can shut students down and also interfere with their learning. If they are concerned about participating, they might have a hard time focusing on the class, not knowing when to participate and how. Some teachers feel committed to using the amount students speak in class as a fair way to grade participation. As we know, anxiety affects people in unfair ways, and therefore we need to think about the goal of our class. For the student with social anxiety, it is unlikely that by requiring the student to participate aloud in front of others, the student will overcome the fear of speaking publicly. Some teachers argue that in their chosen profession, it is essential to learn public speaking, so they feel it is necessary to require verbal participation. Teachers should think about the goal of the class and how the student will interact with the profession. For example, in education, a teacher candidate might decide to pursue special education in order to work with smaller groups.

We also feel the need to expand the definition of participation to include writing reflections rather than just oral participation. Writing reflections can be individual or conducted as a whole class. In a whole class writing, students can contribute to a silent web on the board, with each student having a different colored marker so there is individual accountability. The whole class writing can include a carousel with students answering deep probing questions on posted newsprint around the room, and then circulating a second time with sticky notes, writing comments on the responses. Additionally, using programs such as "Padlet" allows student to post comments on a shared screen without having to speak aloud or be noticed.

It is important to assess students' participation for more than just quantity. Sometimes a student will make a contribution that gives new information and might shake up the conversation in important ways. Or, a contribution may make a new, more encompassing point tying together several ideas being discussed, or perhaps asks a question that inserts a whole different perspective into the discussion. It is important that the professor values these as important contributions, and that students notice and acknowledge these as well.

We often include a written reflection on the reading, in case students do not want to speak about their thoughts in class. This way the professor learns how the student is interacting with the texts. I (Amy) require this as a form of participation for all my students to provide a "fair" playing field for those who will not want to comment in class. I also find that our conversations in class are more robust, since the students have already written and reflected on the reading.

Finally, we allow students to assess their own participation throughout the course. This allows them to think about how they are participating and how they can work on their participation. Giving students a grade for participation at the end of the course does not give the student a chance to be cognizant of their participation and to work on it. Here is an example of a prompt and some student responses.

Prompt Example:

Describe your participation in today's class. (Describe how your participation was valuable for your classmates? What is a goal you have for your participation next week?)

Example student responses:

I am very quiet and anxious about public speaking so I tend to do better participating in smaller groups, although I've been trying to participate in the large group! My goal is to continue working on this.

During today's class I definitely talked too much. I have a hard time when the class is quiet and doesn't participate. I plan to work to allow time for others to respond.

Generating a class participation rubric allows students to have input on what counts as participation. Below is an example of a class-generated rubric in which students can evaluate their own work.

Participation rubric

We created this rubric after the first few weeks of class. I (Ellen) had been emphasizing a more inclusive definition of participation since class began. For this activity, students first talked in small groups and brainstormed characteristics of positive participation. We scribed those on the board. Students then used sticky dots to vote on which ones they thought were most important. The rubric on the right was the result of this process. Note that that students understood subtleties and complexities of strong participation rather than viewing this as just about quantity. Finally, using this rubric, students assessed their own participation. This encouraged them to think about how they could improve.

Participation Rubric <i>Both teacher and student fill this out</i>		
	Student evaluation (rate yourself and give an explanation for your rating).	Teacher evaluation
Comes to class prepared (having done the reading and assignments) and on time with excellent attendance (no missed classes)		
Makes thoughtful contributions that advance the classroom conversations		
Shows interest and respect for others' views		
Fully present (refrain from texting, IM-ing, web surfing, etc);		
Engage in activities and small group discussions		

Practice #3: Examine Group Work Tasks

Breaking the class into small discussion groups can help anxious students to participate. We suggest two strategies: First, give students time to write down their thoughts before going into the small group. This gives both anxious students and students who process at different speeds time to collect their thoughts. Second, assign roles to members of the group such as time keeper, discussion leader, and "wingperson." The wingper-

son takes notes on the small group conversation. Rather than try to push the anxious student to speak, we find it better to capitalize on their strength of listening.

Practice #4: Flexible Policies

Creating simple policies such as eat when you want or take breaks as needed are easy to implement. We usually tell our students that we will have scheduled breaks, but that they should feel free to take a short break when they need to.

The next flexible policy is more challenging for many teachers: Allow students to have flexibility with assignments. Allow rough drafts, assignment re-dos, and late assignments. This flexibility policy drives many teachers crazy because of the belief that students need to learn responsibility by getting assignments in on time. It is also hard on the teacher to receive late assignments. Not giving students the opportunity to hand in their best work, however, goes against many best practices in teaching. We want our students to learn the material. If they do not get it the first time, get a grade of “C,” and are not given a chance to redo it, then what have they learned besides the fact that they did not get it? We believe in allowing students to work on assignments until they fully comprehend the material.

What about late assignments? Surely it is a disservice to the student not to hold them accountable to a deadline, or is it? I am sure we have all had the experience of needing extra time on a deadline. Both authors of this article have been given extensions on writing projects when it seemed like there was no flexibility on the time. Often when my students ask for extra time it is because they want to hand in their best work. This should be supported whenever possible.

Students who are not able to get assignments in on time often suffer from anxiety and/or lack executive function skills. Some students who are anxious can't let the assignment go until it is perfect; they never feel satisfied with their work. Just giving them a penalty will not solve the problem. Rather than penalizing students for what is in fact a challenging disability, teacher can support them with understanding perhaps gently encouraging them to “let go” of an assignment.

Practice #5: Meditation and Self-Help

I (Amy) start my class with a 5-10 minute meditation. This gives everyone a chance to let go of the day and prepare themselves in this space for learning. Some take advantage of the meditation time; others do not. I always let students know that their participation is voluntary. I find that students appreci-

ate the chance to transition from their previous engagement, whether that was another class, a job, or an argument with a friend. I often do a guided meditation and end the meditation by saying, “When you open your eyes you will be ready for learning.” Robust research suggests that meditation reduces anxiety and depression and increases students’ sense of well-being, compassion, and engagement (Martin, 2018; Schwind et al., 2017; Yusufov et al., 2019). For those students without anxiety, it is also a helpful stress reducer and a way to set the space for learning. Martin (2018) begins each class with a mindfulness meditation and finds students are more relaxed and present during the class.

We also have conversations with our students about self-help. I (Ellen) have students identify what they currently do to take care of themselves, and what they additionally could do to take care of themselves, when they are feeling anxious. They write these strategies anonymously on sticky notes and we post them on a chart in the classroom. Students peruse these ideas and can try out suggestions from their classmates. This approach helps us create a community of support where students feel empowered to give, and receive, support while not being responsible for “solving” problems of their classmates. We thus normalize the need to think about our own self-care and to act on this awareness.

Conclusion

My (Amy’s) niece was finally able to get an accommodation from the disabilities office because her parents called and presented evidence of her social anxiety diagnosis. Not every college student has a person to advocate for them or has gotten a diagnosis that allows them to get necessary accommodations. My niece did not want to ask for accommodations. She did not want to stand out or be treated differently in her class. Her parents did not want her to fail the course. No student wants to stand out or have to receive accommodations because they are perceived as “different” from the “norm.” It is our job as college educators to welcome all students and to design strategies in our classroom that allow all students to be successful. We have described five practices in this article that have proven effective in our classrooms to help students with anxiety. It is important to be cognizant of all the requirements and practices that we use in the classroom to make sure we are supporting all students with their diverse needs.

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Resilience through discomfort: reframing anxiety and helpful strategies for the mathematics classroom

Michelle Wallace Bower, Ph.D. - Landmark College and Suriza van der Sandt, Ph.D. - The College of New Jersey

What is Math Anxiety?

Math anxiety is real and affects students across many different math levels. And yes, math anxiety impacts adults outside of traditional classroom settings—even people who do math for a living. Math anxiety is a stress of learning math, doing math, and participating in the math classroom or situations that require mathematics. And yet, at its core, Math Anxiety is similar to other forms of anxiety and many general strategies for teaching students with Math Anxiety can both inform and be informed by strategies for coping with other anxieties in the classroom.

Think about a time when you “froze” when asked to compute a value? A common example is when you are asked to compute a tip or split a bill to figure out your part of a group meal bill? These are specific events often cause anxiety around doing calculations. In part, these produce anxiety because we are doing something quickly and for an audience—our friends are watching. To bring this back to the classroom, for many of our students, it is often this speed part that increases and activates anxiety.

Before we move onto the who has it and what we can do to disrupt math anxiety, let’s look at what is happening in the brain and the body. The National Institute of Mental Health (NIMH) estimates that 31.1% of adults have or have had an anxiety disorder at some point in their lifetime (2017). Everyone experiences some kind of anxiety at some point in their lives—getting ready for a big event, taking a test, speaking in a public meeting, etc. The key difference for individuals with anxiety disorders is that the anxiety is constantly present and can worsen over time. While math anxiety is not a diagnosable disorder according to the Diagnostic and Statistical Manual of Mental Disorders (DSM) (American Psychiatric Association, 2013), it impacts many students and is a real threat to student success. Math anxiety is estimated to impact between 66 – 90% of students (Dowker, Sarkar & Looi, 2016). Anxiety doesn’t just happen in the math classroom and math anxiety is likely related to generalized anxiety, test anxiety, and/or social anxiety.

Physical symptoms manifest in a variety of ways for students. We see students reporting dry mouth, panic, fear, uneasiness, heart palpitations, nausea, sweaty hands/feet, muscle tension,

shortness of breath, inability to be still and calm, inability to focus, and other symptoms. It can feel dire, for some students this can even feel like a heart attack. All of these physical manifestations are real—in other words, while they might not have an ailment, the pain that the student feels is real. The students are not in danger but can feel great distress.

For example, one author once had to read names at graduation. Wanting to pronounce the names perfectly. She had practiced the names and double checked each pronunciation with the students. She was feeling prepared, but at the same time scared and shaking. At about name five, her hand started to feel funny by the time she was almost done reading the list her entire arm was numb. As she stepped aside for the next reader to start, her arm had returned to normal. The physical sensation was real but was not a danger like a heart-attack. Some of these sensations feel that intense. Later we will talk about some strategies to reframe these feelings. We need to honor these intense feelings and know that they are not a danger.

Let's move to some of the hidden symptoms. Beyond the physical sensations, anxiety disrupts cognitive processing by compromising ongoing activity in working memory. Anxiety is a kind of fear of failure, threat to self-esteem, or discomfort that disrupts cognitive processing. It can impact memory in several ways. The impact on semantic memory makes it difficult to retrieve known arithmetic facts. The impact on procedural memory makes it difficult to understand and apply mathematical procedures. The impact on visuospatial memory makes it difficult to understand spatially represented numerical information such as misalignment of columns, place value errors, or geometry. In any of these cases the freeze, inability to move forward, or inability to stay organized can cause a further loop of anxiety and fear of further failure.

Before we describe who has math anxiety, let's briefly explore one more area that impacts learning, a specific learning disability: math disability. According to Soares, Evans, and Patel (2017), math disability "is considered a neurodevelopment disorder, involving dysfunction in specific brain regions that are implicated in math skills" (p. 49). This means that brain imaging confirms that the brains of students with math disability function differently and with dysfunction when performing a range of mathematical tasks. It is beyond the scope of this paper to describe math disability other than to identify that for some students, math anxiety may be only part of the problem. From our research, we find that math anxiety can exist in students without a math disability.

Who Has Math Anxiety?

Math Anxiety can be the result of a student's negative or embarrassing experiences with math. Being mathematics faculty means that we hear a lot of sad math histories. Our students cross many kinds of backgrounds and, yet, there are some commonalities. Many times, the student can point to a time where math anxiety seemed to start for them—in early elementary school on timed tests; difficulty keeping up due to a reading difficulty on word problems; a teacher who didn't believe that they could do the work, they were told to stop asking questions, and the list goes on. Note here that none of these are disabilities, but more about expectations. These experiences can leave a student with the belief that they are deficient in math. Math anxiety can therefore be defined as intense emotions of anxiety about the ability to understand and do math. We know however, that fast math work should not define the student. Many mathematicians cannot compute quickly; in fact, it is common for mathematicians to be slow, deep thinkers (Boaler, 2017).

In our case, it is often students who have been stereotyped. When that stereotype threatens poor performance simply due to membership in a group, those students are more likely to have poor performance (Beilock, 2010). Telling students how they should perform because they are a certain gender, race, or education background, can have negative consequences (Beilock, 2010). In our experience stereotyping through labeling students with learning disabilities often feeds these anxieties and the stereotype gets enacted.

From data that we have been collecting for over 8 years at Landmark College, we see that most anxious students are typically the students who place into the developmental math courses. On average, we see less self-reported math anxiety (10-item scale) in students placed in college algebra and higher. We can say that many students do self-identify as math anxious. However, not all students with learning disabilities self-identify as math anxious. There's more good news in strategies to help students reduce math anxiety.

What Are Some Strategies For Reducing Math Anxiety?

Believe your students, the feelings and sensations that they have are real. When we can see students and honor their frustrations, we let them know that we see them as humans, not just students. When we can compassionately meet students, we can break down barriers with our students. At the same time, we need to start helping students be comfortable with the discomfort. We know that we can only improve when we engage. Therefore, we need to help students find ways of re-engaging

with mathematics while acknowledging that it may be producing discomfort. We need to help students take small steps in practicing resilience. The more we practice resilience, the more we can help break down the anxious responses. Working with students to build resilience will help them be better students and adults.

When we can help students stick to the study of math and increase their resilience, we see statistically significant drop in anxiety scores for students in developmental courses as they take more courses. Putting yourself out there in safe environments does seem to help their perception of their anxiety. (It is beyond the scope of this article to present the data here and an additional article is in preparation)

There are many tools out there in general for anxiety. Many people benefit from seeking assistance from licensed mental health counselor. Sian Beilock (2010) wrote an amazing book on anxiety titled *Choke*. We have found her work to be some of the best in terms of general anxiety strategies. We will briefly summarize a few of her key strategies that can be used with math students, then we will present a few mathematics classroom ideas based on our experiences.

1. *Write about your (math) worries*—Spend a couple of minutes and write about your math worries, this can thwart anxieties. Be specific about what part of the math is worrisome. Keeping the anxieties bottled up can backfire. Naming them and calling them to being can be disarming and help work with them.
2. *Practice under mild pressure*—Study under the same conditions as the event. Will you be Timed? Do you get to use a study sheet or notes? Don't avoid making our study sheet, start early and use it often. As much as we don't like testing, we are going to have testing in our educational world for a long time. Practice under the testing conditions that your instructor is giving you—role play. Think of it as a math test dress rehearsal. The more you step into the role, the more likely you are to be ready.
3. *Outsource your cognitive load*—write down steps instead of trying to remember them, use tools to outsource as well. Much of mathematics is made up of procedures with several steps. Here is a tip that we use frequently, why try to memorize everything? If you are anxious your working memory—where you hold that information—can get compromised. So, write down the steps in that procedure, follow a consistent pattern, look for ways to reduce the load on your working memory. Free your working memo-

ry from the load of the procedure so you can focus on the math concepts.

4. *Reinterpret your reactions*—This reframing technique helps you identify that the sweaty palms, etc. are not all bad. This is about a mindset. Do I want to be sweating? No. Is it going to harm me? Not likely short term. It also means that I care and I want to do a good job. Try to reframe these feelings. Reframe them as positive, adrenaline jumps. Turn it to your advantage. Doing math does require energy, harness that adrenaline.
5. *Reaffirm your self-worth*—take a few minutes to write about your interests and activities. This writing can promote positive self-worth and boost confidence and performance. We want to encourage students that grades don't define them and at the same time we want students to be brave and courageous enough to step out of their comfort zone. We encourage students to avoid comparing themselves to other students in the class. Not every student will work at exactly the same pace. The student who sees the big picture first will always start at a different place than the student who needs to see the fine details first. All these differences are just that: differences, not better than.
6. *Organize your knowledge*—organize what you know. Make it meaningful to you. One author always parks in the same row at the grocery store, which frees up space to remember to look at the grocery list. Take a burden off working memory by using and practicing with your organization scheme. Getting organized can be a real gem for many students. It is hard and many students need help understanding how to get organized.
7. *Pause your "choke"*—walk away for a few minutes from a challenging thing—take a pause. We strongly encourage our students to use this tip. Frustrated? Anxious—step away for a bit then come back to it. The key here is come back to it with a different point of view, but to come back. Walking away can help the brain let go and come back fresh to the challenge.

If we can teach students that getting it wrong is part of a larger process and not penalize them, then we can get them into a growth mindset way of thinking.

How Can Instructors Structure Classroom Settings To Proactively Foster a "Growth Mindset"?

We can help our students be more resilient and take challenges by making a few changes in our classrooms. We need to inspire students to take risks, and instructors need to be flexible about

what the outputs look like. Here are a few examples of what we suggest that can help all students, but particularly the highly anxious student.

1. Be explicit and clear with students. Provide instructions that are direct and explicit and are free of sarcasm. The anxious brain has much to wade through and receiving explicit and direct instructions will help.
2. Provide multiple entry points for students. How can we create classrooms where students can be explorers of the content?
3. Be patient and flexible—students with math anxiety really wish they didn't have it. Anxious students wish they didn't have to ask the question, again. They want to learn and get a good grade and they deserve that opportunity—it just might look different from another student. See them struggling? Suggest one of the strategies we mentioned above.
4. Be organized. If students can't follow along that could raise their anxiety. This is especially true if they have learned that asking questions is bad or calls negative attention to them.

Conclusions

These are several things that we can do in the math classroom. We also need to stop equating fast with good. Calculations and computing have high demands on working memory. Students need to hear messages about "growth mindset" - how the brain can grow more from mistakes than getting it all right. The opposite is a "fixed mindset" - the idea that getting it wrong means a student is "dumb" or incapable of doing the material. Mistakes, or going slowly to figure things out, do not equal "dumb."

Parents and teachers should instead encourage students to take risks and learn from mistakes. Students who engage in productive struggle, while being supported, experience long term benefits as they can apply their learning to new problem situations (Kapur, 2010). We all need to create spaces to tackle problems, make mistakes, and learn. The courage to take risks and make mistakes is very powerful and results in greater success than if a student is innately brilliant in math.

Math is everywhere, and every student deserves a chance to learn it. Parents and teachers need to acknowledge that students from many levels of math can and do experience math anxiety. Identifying the problem is the first step to helping students reframe their anxiety and gain the courage to doing math - at any age.

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Learning and wellbeing: a collaborative approach to course design

Erin DeSilva, Todd A. Gibbs and Caitlin K. Barthelmes - Dartmouth College

Anxiety is one of the most prominent presenting concern at college and university counseling centers throughout the United States (CCMH, 2019; LeViness et al. 2018). It is the

only diagnostic category to affect more than half of all students seeking support, with approximately 3 out of every 5 students who utilize their counseling center receiving a diagnosis for an

anxiety-related disorder (CCMH, 2019; LeViness et al, 2018). Studies of the relationship between anxiety and academic performance in higher education have yielded mixed findings, but a seminal meta-analysis of 126 studies that utilized these variables found that anxiety tended to have a negative impact on performance that was equally applicable to all students regardless of gender or cultural background (Seipp, 1991). Seipp (1991) also found that this adverse impact on performance held true regardless of the stability of the anxiety. In other words, performance declined regardless of whether the students' anxiety was a temporary state, or a more permanent trait connected to a particular diagnosis. Therefore, in regard to the presence of anxiety in instructional settings, it may be most effective to consider the needs of all learners, including those with neurodiverse or anxiety-related concerns, by providing support for student wellbeing more broadly.

The role of wellbeing in educational settings has been an emergent topic of study in the research literature. Recent studies have demonstrated how student wellbeing can contribute to academic achievement (Heffner & Antaramian, 2016). Models of thriving in college have been developed whose components contribute up to 23% of the variation in students' grade point average (GPA), intent to graduate, and learning gains (Schreiner, 2013). New initiatives for wellbeing education have been tested in large-scale randomized controlled trials, yielding findings that indicate wellbeing can not only be learned, but that there is a clear positive relationship between student wellbeing and academic performance (Adler, 2016). Actions taken by instructors to facilitate student wellbeing in the classroom may be the most effective response for boosting students' psychological functioning and academic success. By collaborating with wellness professionals and learning designers, teaching and learning centers are uniquely positioned to help build faculty members' capacity to create learning environments in which students thrive, particularly in this time of increased awareness of neurodiversity and diagnoses of anxiety, because they can bring these conversations to the forefront of faculty development efforts and provide space for instructors to discuss how their pedagogical design affects student wellbeing.

Learning Design and Wellbeing

When students feel their best, they can live up to their fullest potential inside and outside of the classroom. Schreiner and Louis (2011) define engaged learning as “a positive energy invested in one's own learning, evidenced by meaningful processing, attention to what is happening in the moment,

and involvement in learning activities” (p. 6) and suggest that it is core to a college student's ability to flourish. By contrast, a student struggling with stress, anxiety, sleep difficulties, or depression has significant barriers to retaining new information, offering insightful comments in class, or contributing fully in a group project. A student who is thriving, or functioning well intellectually, socially, and emotionally, is more able to engage in deep learning through increased attention, invested involvement, and meaningful processing of material (Schreiner, 2013); therefore, faculty may see learning gains when they are attentive to the wellbeing of their students.

Academic experiences can have a profound impact on student wellness. Wellbeing is influenced by the environments in which we live, work, and play. The classroom environment and related coursework dominate student life, making pedagogical choices powerful mechanisms to enhance or undermine wellbeing. Faculty can leverage the bidirectional relationship of learning and wellness. Many of the practices and approaches that are most effective for teaching and learning are also techniques that support the wellbeing and health of students, such as creating a supportive classroom environment that includes clear and meaningful assessment, connecting course content with student development, and utilizing a flexible course design (UBC Wellbeing, n.d.).

Creating Supportive Classroom Environments

A supportive classroom environment has much in common with a well-designed course. Setting a tone of open communication starts with a syllabus, which allows students to clearly see not only the instructor's expectations, but also their values and priorities. It is the instructor's responsibility to communicate learning objectives and to work with students to connect these learning outcomes to previous knowledge and life experience. These connections can sometimes be made in isolation, but when an instructor creates an environment where students are expected to share and grow together, a community of support can form. When designing courses, instructors must consider the scope and sequence of their content, [but also the places and spaces in which students will interact with them, and with each other \(Garrison et al. 2008\).](#)

In order to create assessments that are part of this supportive learning environment, an instructor needs to consider where there may be implicit learning objectives, and how critical these are to student success in a particular course. For example, timed exams measure a student's ability to quickly recall infor-

mation, but for many students they can hinder the ability to apply learning to new contexts. If the student needs to demonstrate quick recall, the timed exam is the best tool for measuring success. If instead, the timing of the recall is not important, the instructor may consider a take home exam. Naming and discussing the skills being measured in a particular assessment can give the student insight into course expectations and can help them see relevance and meaning.

Additionally, giving students a chance to practice skills and internalize the learning processes that are necessary for the course increases the opportunity for learning. To accomplish this, an instructor can incorporate frequent, low-stakes assessments, which facilitates learning in general, but also has the secondary positive effect of mitigating unnecessary stress for students. This technique supports a growth mindset (Dweck, Walton, & Cohen, 2014) by helping students understand that each assessment is an opportunity to learn and improve, a way of thinking that has positive effects on wellbeing.

Connecting Course Content with Student Development and Experience

Recognition of the inherent connection between wellbeing and academics can guide instructors to be more responsive to students' developmental needs for learning and functioning. One foundational approach to supporting student learning and integration of course content involves intentionally scaffolding learning and skill development over the duration of the class (Toomey, 2010). Structuring courses in a manner that allows students to synthesize new ideas and skills with existing knowledge and experience promotes learning and development, which in turn has been shown to boost wellbeing through facilitating students' psychological need for direct experiences of competence (Gibbs, 2017). This process can be enhanced by helping students to identify and transfer previously acquired skills to the current course while also considering how their learning experiences in the current course might transfer to future course applications or other domains of their lives (Simons, 1999).

In addition, it is worthwhile to consider the numerous changes that students are experiencing at any point in time. Regardless of age or academic rank, transitions are a universal characteristic for people enrolled in educational programs, and changes (positive or negative) produce stress. First-year students may be adapting to profound changes in their social support, a need for new life skills, and potential leaps in academic expecta-

tions. As enrollment progresses, students continue to refine relationships and make choices related to course of study and career, ultimately preparing for graduation and the shift from a structured educational environment to the more autonomous context of 'life after college.'

Faculty acknowledgment of student transitions might result in some reflection about how students' academic experiences can facilitate or inhibit their ability to successfully navigate normative transitional challenges. For instance, in a first-year course students may benefit from grading policies that permit the resubmission of assignments based on initial feedback as they adjust to increased expectations regarding their academic performance. Encouraging students to receive feedback and build upon it through further work could help them establish greater academic tenacity (Dweck, Walton, & Cohen, 2014), a quality that can enhance engagement throughout students' academic careers. Course policies that are created in cooperation with students can also help them feel valued and understood, building their capacities for effectively managing stressors in a manner that produces better outcomes for both wellbeing and academic success. For instance, determining communication expectations or submission processes and deadlines in collaboration with the class enables students to offer their lived expertise of what is helpful to their success while still taking into account the instructor's preferences.

Utilizing Flexible Course Design

Flexible course design exists on a spectrum. As instructors get to know their students, understanding how best to help them learn is a natural outcome. For example, if an instructor realizes halfway through a group project that students are fixating on one objective (e.g. creating a final product) at the expense of the other (e.g. learning about the process of design and iteration), they may pause the assignment and create an opportunity for reflection. This will help students refocus on the purpose of the assignment and can especially help students who are struggling to communicate their fears, needs, and time management problems to their group mates because it brings the guidepost into focus once again.

The key to flexible course design is to create opportunities for students to provide feedback on how the course is working for them. This can be done through a [midterm evaluation](#), an [exam wrapper](#), an open-ended question in a [minute paper](#) or during office hours. As an instructor reviews student feedback, they can consider what they might change immediately, what they

might change the next time they teach, and what they cannot change because it would be in conflict with their teaching philosophy. Then, most importantly, they can share these thoughts with their students, letting them know that they value student voices and perspective.

Flexible course design is an important part [Universal Design for Learning](#) (CAST, 2018); creating a learning experience that is accessible to the broadest range of learners. There are many tools available to assist in considering who students are, how they access information, and how they can demonstrate this knowledge.

Partnerships that Increase Visibility and Empower Positive Change

As teaching and learning professionals consider how to best raise the profile of these ideas, it is important to determine which partners would be optimal collaborators. Defining areas of expertise on campus might help accomplish this: Who is an experienced teacher with years of wisdom regarding how students interact with relevant content? How does an instructor's identity help the group better understand student needs? Who has experimented with the pedagogical ideas outlined in this article, or others? Who has an interest in creating supportive learning environments? Identifying these allies acts as the first step toward creating a collaborative and effective implementation team.

Next, consider where on campus there might be additional pockets of expertise. Engaging the assistance of staff members whose work involves student wellness, counseling, or substance abuse prevention may be particularly useful. These knowledgeable professionals bring an understanding of student development theory, a perspective on the intended student audience, and may also have significant experience creating co-curricular programs that could provide excellent synergy.

Informal conversations between curricular and co-curricular colleagues can jump-start the process, but investing time at the beginning of the process to clearly outline each stakeholder's goals helps solidify the mutual benefits each person can gain from the endeavor. Consider whether a workshop, lecture, faculty learning community, or series of events might best suit the needs of the group's goals; each have distinct advantages in certain contexts. For example, programming that combines lectures by anxiety and/or neurodiversity experts (e.g. understanding how the brain processes anxiety and how that impacts

learning) and opportunities to workshop syllabi with supportive designers can allow instructors to turn knowledge into action. Simply raising one's awareness about neurodiversity and anxiety does not necessarily mean an instructor can skillfully design a course incorporating that knowledge. Teaching and learning centers can promote the tips outlined above for creating supportive classroom environments using flexible course design grounded in student development to mobilize campus communities towards improved learning and wellbeing.

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Simulations offer transformational learning and anxiety reduction

Anne M. DeFelippo Ph.D., J.D., R.N., C.N.E., Ellen Flowers M.S., R.N., P.M.H.C.N.S., B.S., Janice Chasse King D.N.P., P.M.H.C.N.S and Robin Leger Ph.D., R.N. - Salem State University

Some still remember the irony of viewing US Airways Flight # 1549 intact and shining serenely on the Hudson River one late afternoon in 2009 when two engines on the flight were suddenly disabled by a bird strike. On that day, the world learned new information about flight training. All 155 passengers survived the near catastrophe thanks to Captain Chesley “Sully” Sullenberger’s quick, masterful skills applied like clockwork. When asked how he accomplished such a feat he used the term *simulation*. Flight training included a simulation of the exact landing procedure he implemented on that fateful day.

The frequent practice in flying simulations enabled him to remain calm and focused in a very anxiety-provoking situation. One of the factors that produces anxiety in our students is the fear of failing in a new situation or the fear of feeling like an imposter in a professional setting; the “will I really be able to do this in the real world” fear. Simulations allow students to practice being in an anxiety-provoking situation in a safe setting, without real-world consequences that might arise from a mistake. Simulations provide opportunities for students to develop familiarity with a situation and that familiarity provides them with a sense of accomplishment and expertise that will allow them to remain more calm and relaxed as they progress to increasingly difficult learning tasks or performance in their professions.

Simulations can be done in a variety of settings, including the classroom. In one psychology class in a public comprehensive university in Massachusetts, students had been reading textbooks about how to counsel patients who are depressed. The students could recite steps in the interview process and identify information they needed to obtain from their patient interviews. But one important element was missing: they had no experience practicing, in real time, the words they would actually use with a patient or what they would say next when the patient responded to them. They did not learn how to interact with patients, nor did they know when to listen and when to explore and ask questions. At the suggestion of her dean,

the psychology faculty began a collaboration with the theater department of the university. Current undergraduate theater majors agreed to role-play as patients seeking help for depression. The theater students came to the “clinic in the classroom” to allow psychology students to practice conducting an actual face to face interview.

On the day that the role-plays were to take place in the classroom, the faculty member looked around the room and was surprised to find no vacant seats and many students standing. The enrolled students had told their friends who wanted to come and see it for themselves. The professor realized how impactful the students expected the live simulation to be in their development of real practice skills. Neither an experienced psychology faculty member, nor a well written textbook could teach the students the critical thinking and sound decision making that a real-life simulation could teach them.

Simulations that teach professional skills are not only being created for and utilized by our undergraduate students. Simulations are now commonly incorporated into effective teacher trainings for early and mid-career faculty. Begun in 2014 by leaders in higher education, the ACUE program or the Association of College and University Educators supports and promotes effective teaching by college level educators whose primary role is teaching. Among the 25 modules of online reading, writing, and interfacing with colleagues, ACUE has created high fidelity video clips of classroom teaching. Faculty speak and act in ways that are less than professional and faculty learners must respond to these high impact classroom simulations. These simulations are highly transformative and provide the significant and deep learning experiences that Fink (2003) so aptly describes in his book. These video clips of evidence-based teaching practices in the context of a particular course goal or class topic remain in the faculty participant’s mind long after the online module is completed. It is then easy for faculty to observe themselves and self-correct their behavior and mannerisms to promote classroom learning.

Over the course of nine years, in our school of nursing we observed students coming into the clinical setting so fearful of making a mistake or offending a patient by their words or being afraid that someone would assault them that they actually trembled with fear and worried about what they would say and how the patients would behave. Sometimes students would actually attend 3 clinical days before mustering up the courage to speak to someone with a mental illness. As faculty, we recognized that moderate levels of anxiety were bordering on severe anxiety. No learning was taking place in an atmosphere of fear and narrow perceptual fields. In essence, our students needed to attain a level of mild anxiety at the beginning of their clinical experiences in order to learn as much as possible and possess a wide perceptual field to embrace this experience.

The role of the psychiatric mental health nurse is a challenging one that requires intense focus and attention to clients' behaviors and words and what clients mean and intend to do. This is a specialty that depends on careful observation, insight, instinct, therapeutic communication, and extensive collaboration among staff to save lives, to enhance a person's will to live, and to improve the quality of life for persons with chronic mental illness. Crisis intervention, stabilization of a client's illness, and safety are the major goals of acute inpatient hospitalizations.

Between the public's stigma about being diagnosed with mental illness and the Hollywood motion picture industry's exaggerated depiction of outlandish behaviors of persons with mental illness as character pathology, nursing students understandably view psychiatric nursing with trepidation. Nursing students about to begin a rotation in psychiatric mental health nursing share that they fear the unknown, they fear for their own safety, they anticipate being assaulted, they appear highly anxious about saying the wrong thing, and they are concerned that their words will create an angry outburst in clients.

This specialty requires students to have face-to-face conversations sitting with human beings where the nurse is the therapeutic instrument in most cases. These skills are not learned overnight nor are they ones that can be developed rapidly. Students are sometimes "terrified" of conversations in person away from their usual mode of relating in the world of social media and texts and tweets. Face-to-face conversations are at the heart of this nursing and students must practice these. The thought of face-to-face conversations worsened student anxiety levels. Increased anxiety is known to interfere with listening well and learning.

The problem is that there is a limit to the amount of time available to prepare students for a clinical rotation and limits to what they will learn on that rotation. Inpatient units have stopped their former practices of allowing students to administer medications even though that is an important job function they need to learn. Similarly, students do not always have opportunities to view psychiatric emergencies or other experiences that faculty believe are essential for significant learning experiences. How could students learn how to communicate skillfully with clients so that they could obtain the information they needed to render safe, state of the art quality care utilizing best practices when they were not always able to practice those skills in their clinical? How could they learn effectively when they reported reluctance to even try to have conversations with clients in the early portions of their clinical due to their false beliefs that harm was going to occur?

With a limited time frame to prepare students for clinical and a limit to what students will observe in this experience, faculty face the challenge of how to respond to and reduce students' anxiety levels while teaching all the skills necessary for best practice as a mental health nurse and allowing students to have a positive and rich professional development experience. Thus, *Mental Health Course Simulations* were born. On a cold December night in 2010, the clinical faculty sat around a fireplace with the goals of 1) finding a way to decrease students' anxiety and fear of persons with mental illness and their anxiety about communication in a short period of time so that when they go to clinical sites they are at mild level of anxiety and at a higher level of learning and have clearer perception, and 2) to determine how to assess whether our intervention had a measurable impact on reducing student anxieties.

Hildegard Peplau, mother of psychiatric nursing and founder of theory of anxiety, states that humans learn best and perceive more when their anxiety remains at a mild level (Peplau, 1952). We sought to create essential experiences, ones that students would not otherwise observe, that would tie classroom theory to clinical experience and professional development with limited anxiety arousal. The experiences needed to be experienced as realistic, actual, live experiences (Jeffries & Rogers, 2012) involving active learning (high fidelity). Within the faculty-student interactions, we included opportunities for briefing, debriefing, providing feedback, experiencing collaboration and creating a safe atmosphere in which mistakes would occur and would improve skill development.

The simulation outcomes we anticipated varied in terms of audience. For the student participants, we expected to see increases in communication skills, team collaboration, critical thinking, satisfaction and self-confidence and an increased emphasis on safety interventions (Jeffries & Lincoln, 2012). Finally, we expected our two-day simulations to be significant learning experiences (Fink, 2003) that would imitate the world of psychiatric nursing well enough to be remembered during the clinical rotation and long after that. We also intended that these simulations would ease their transition into their professional roles on the real psychiatric nursing units. We also anticipated benefits for the faculty and nurse practitioners who played important roles within the simulations. Specifically, we expected to see increased morale and job satisfaction among the nurse managers and faculty who were sharing their clinical expertise with students. An added benefit at the institutional level came from the establishment of a collaborative, working relationship with a hospital and its nursing staff.

Methodology

Participants: Undergraduate nursing students in their first semester senior year were de-identified and agreed to participate in the study.

Materials & Procedure: In order to determine the impact of the simulations on anxiety, we used the State-Trait Anxiety Scale (Spielberger, 1968; 1977) to measure pre and post impact on student anxiety levels. Students filled out the inventory prior to the simulations and immediately after the 2nd day of the simulation. In addition, though not part of this study, students were asked to complete an anonymous online course survey one week before the end of classes.

The Mental Health Nursing Simulations are realistic and innovative. These learning experiences seamlessly weave nursing theory and clinical practice together and teach to all styles of learning as they incorporate and are guided by the Nurse of the Future Competencies. Those competencies include promotion of safety, professionalism, therapeutic communication, and patient centered care. Realistic patient care scenarios provide modules for *critical thinking* and sound decision-making while promoting faculty-student interaction, collaboration, and debriefing. In order to demonstrate that transformative learning experiences have occurred, each scenario, as it is being planned, is viewed through the lens of Jeffries framework and Fink's Significant Learning Experiences framework. These active learning scenarios occur with low frequency in students' actual onsite clinical experiences.

Guiding Principles for our Simulations

- Provide a *safe*, no judgment, *low-stakes*, grade-free environment that promotes high levels of accurate perception and focused attention
- Promote team building that
 - *bonds students* in groups for simulations-they remain in the same groups in their clinical rotations
 - *bonds faculty* and clinical nurses with each other
 - Fosters *collaboration* among faculty and students
- Model high quality patient care that can be integrated as learned behaviors.
- Faculty *debrief* each simulation after it is over, and incorporate student feedback into the next iteration of experiences demonstrating that constructive feedback promotes growth
- Make learning fun.
- Activate student learning of life-long skills, values and attitudes.
- Reduce anxiety and build self-efficacy (Bandura, 1997); one's belief that one has the ability to succeed in specific situations

Simulation Topics.

Students role play as medication nurses who administer five psychotropic medications (candy) to nurse managers who role play patients and commonly occurring interactions. Student must know generic names, purposes, side effects, blood levels, and when to hold medication and to seek an order to stop medication.

Students learn the names of communication techniques then practice using specific therapeutic communication techniques. They can hear a statement made by the nurse in role play and can identify if it is therapeutic or non-therapeutic.

Students identify non-therapeutic communication techniques and *non-therapeutic* interventions from role-plays and steps in crisis prevention intervention.

Students describe and find the unusual places where contraband may be hidden by some patients in their rooms. Students conduct a safe and effective room search in an unused patient room. The simulation ends only when *all* the contraband is found.

Students listen to the sound of voices as would be heard by clients with schizophrenia. They also try to concentrate on reading an article and answering questions. Most students are too distracted to follow through on the assignment.

On an actual un-used psychiatric hospital unit, students learn to intervene in situations that jeopardize patient safety. These involve impulsive patient behavior, the swallowing of a non-edible object, self-harm, signs of neuroleptic malignant syndrome, and patients complaining of chest pain. Students are *briefed prior* to each scenario and then work with mentors to prevent embarrassment and to correctly prevent a “unit crisis” from becoming a life-threatening event. . .

Preliminary Results

Most students’ anxiety levels are lower at end of day two of simulations. Students feel somewhat less anxious about saying the wrong thing to a client with mental illness according to statements made to faculty and responses on an anxiety survey and the State-Trait Anxiety Scale. Students consistently begin to interact with and interview clients on their first day of the clinical experience instead of the second or third clinical day as had occurred prior to simulations.

Students self-reported that they are less fearful of clients with mental illness. They feel more confident approaching patients and are willing to take more risks trying out their new skills. Many students begin a lengthy client interview now on their first day of psychiatric nursing clinical. Some students have spoken about a new joy that they feel after this mental health experience. Course grades have been higher since simulations began and ATI Nursing test pass rates have increased. Nurse Managers, who play the role of patients in the simulations, surprisingly experienced a catharsis they described as positive after their experience in the role and teaching students intervention skills.

Implications.

Well-designed simulations can have a powerful impact on learning. Students in this study mentioned the simulations as memorable in their graduation speeches to the class. They stated that their communication skills had improved, they felt more sensitive to the needs of persons diagnosed with mental illness, and their anxiety about their ability to work with people diagnosed with mental illness decreased. While we have focused this article on the benefits of a specific set of simulations designed for nursing, simulations have the potential of providing students with a safe and supportive environment to practice

their developing professional skills and reduce some of the anxiety they feel on learning complex, difficult tasks in what are often high-stakes environments.

Simulations can transform how students learn and shape their attitudes, skills, values, and beliefs. This is a deep learning that is considered transformative. Content and process are not forgotten and memory of these experiences creates personal change. While it might be labor intensive and time-consuming to create such transformative experiences, developing relationships with industry partners opens many possibilities. In our case, collaborations with area hospitals allowed us to access larger spaces, provided access to more support personnel and teachers to provide lower teacher:student ratios, reduced the costs of running the simulations, and generated more ideas due to more people working on objectives and outcomes. An added benefit within our collaborations was the reciprocity that ensued such as continuing education of nurse managers and workforce development as well as increasing job opportunities for our graduates. Over the past 7 years, 31 graduates of Salem State University have been hired by Tewksbury Hospital to work as staff nurses on inpatient psychiatric units, in part, due to our collaboration on the development and implementation of the simulations. On the hospital side, their costs to recruit nurses have decreased significantly.

Footnote: The mental health nursing faculty who created and implemented these simulations for each undergraduate nursing student at Salem State University since 2011 won the Massachusetts Association of Collegiate Nursing Schools (MACN) Innovative Teaching Award in 2014 for these then unique simulations. We wish to acknowledge and thank our Associate Dean, Linda Frontiero, DNP who began this journey with us when she said to us, “You have to create simulations for your students.”

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 Meier Hall 115
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 annie.soisson@tufts.edu

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 1 River Rd
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 802-387-1675
 ematte@landmark.edu
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Professor of Biology
Quinnipiac University
 275 Mount Carmel Ave.,
 Hamden, CT 06518-1908
 203-582-8270
 Fax: 203-582-3524
 Deborah.Clark@quinnipiac.edu

Joseph Finckel, M.A.

Associate Professor of English
 Teaching and Learning Consultant (TLC)
Asnuntuck Community College
 170 Elm Street,
 Enfield, CT 06082
 Phone: 860-253-3076
 Email: jfinckel@asnuntuck.edu

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Director, Center for Excellence in Teach-
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Springfield College
 Harold C. Smith Learning Commons,
 Room 401
 Springfield, MA 01109
 Phone: 413-748-4401
 Email: hakala@springfield.edu

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Director, Center for Teaching & Learning
Colby College
 5165 Mayflower Hill
 Waterville, ME
 Phone: (207) 859-5166
 Email: cahurney@colby.edu

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University of Massachusetts Amherst
 Institute for Teaching Excellence & Faculty
 Development (TEFD)
 140 Hicks Way
 Amherst, MA 01003
 Phone: 413-545-1699
 Email: tefd@umass.edu

Laura L. O'Toole, Ph.D.

Professor of Sociology and Senior Faculty
 Fellow for Community Engagement in the
 Center for Teaching and Learning
Salve Regina University
 100 Ochre Point Avenue
 Newport, RI 02840
 401-341-3183
 laura.otoole@salve.edu

Lori Rosenthal, Ph.D.

Dean, School of Humanities, Education,
 Justice & Social Sciences
 Professor of Psychology
Lasell University
 1844 Commonwealth Ave.
 Newton, MA 02466
 617-243-2074
 lrosenthal@lasell.edu
 @rosenthallori

Peter Shea, M.A.

Director, Office of Professional
 Development
Middlesex Community College
 591 Springs Road
 Bedford, MA 01730
 781-280-3561
 sheap@middlesex.mass.edu

Cindy Tobery, Ph.D.

Associate Director, Dartmouth Center
 for the Advancement of Learning
Dartmouth College
 102 Baker-Berry Library, HB6247
 Hanover, NH 03755
 603-646-9750
 Fax: 603-646-6906
 cindy.tobery@Dartmouth.edu

Susan Tashjian, M.Ed.

Coordinator of Instructional Technology
 The Center for Instructional Technology
 and Distance Learning
Northern Essex Community College
 Haverhill, MA
 Phone: 978-556-3686 or 978-655-5819
 stashjian@necc.mass.edu

Brad Wheeler, Ph.D.

Associate Director
Brandeis University
 Center for Teaching & Learning
 415 South Street | MS: 045 | Farber 2
 Waltham, MA 02454
 Phone: 781-736-5060
 Email: bwheeler@brandeis.edu
 www.brandeis.edu/teaching