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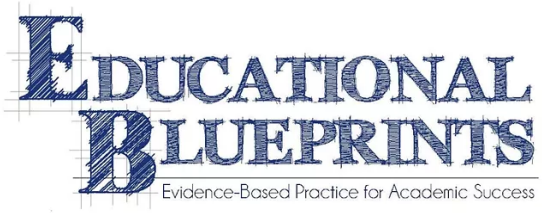

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CONVERSATION SESSIONS

Adapting Instruction for the Compressed Semester

James Harder, Virginia Tech; Tiffany Shoop, Virginia Tech

This conversation session will focus on teaching in a compressed semester (e.g., wintermesters, summer sessions) format. The facilitators will lead participants in a discussion about the challenges of teaching in the compressed semester as well as strategies to overcome those challenges.

Are Your Student Assessments an A+?

Jeffrey Robert, Virginia Tech

How effective are your classroom assessments? This roundtable discussion will critically evaluate higher education assessments and their influence on student learning and retention. Specifically, participants will discuss assessment techniques that engage students in higher order thinking and promote student participation. Participants will craft peer assessments for group projects and they will evaluate strategies to reduce student assessment anxiety. By the end of this session, participants will have new assessment tools and techniques to employ within their classroom. In addition, participants will broaden their understanding of assessments and be able to realign assessments to their learning objectives.

Student assessment has been found to influence a student's approach to learning and retention of course content (Struyven, Dochy, & Janssens, 2005). As a result, a faculty member's assessment choice may influence student learning outcomes. Low-level, memory-oriented, assessment questions provide less opportunity for students to acquire contextual understanding and to bridge content across classes than high-level, application and analysis, assessment questions (Jensen, McDaniel, Woodard, & Kummer, 2014).

This roundtable discussion will challenge participants to evaluate their current use of student assessments in the classroom. Using the behavioral framework promoted by Aubrey C. Daniels (1994), which states that behavior may be modeled by the consequence following the action, participants will analyze if their assessments are promoting or dissuading their desired learning objectives.

At the beginning of the roundtable discussion, participants will write their most common assessment tools and their classroom learning objectives in a provided worksheet. The facilitator will elicit a few of the assessment tools and learning objectives from the participants. After a brief discussion of these tools and objectives, the facilitator will provide the first roundtable discussion topic: assessment and higher-order thinking. Bloom's (1956) seminal research on the six categories of reasoning has served as a framework of education assessment for decades. How do educators effectively and efficiently test higher order thinking in the classroom? (Bloom's Taxonomy will be provided to participants.) How might these assessment techniques be modified to serve large classes, defined as 50+ students?

The benefits of student participation have been well documented in education research. Students who engage during the class demonstrate higher cognitive ability and retention of course material (Rocca, 2010). Aside from dichotomous class attendance assessments, which do not promote active engagement in the classroom, how do you assess student participation in your classroom?

Group projects are common in higher education courses today. Group projects augment student learning and retention (Astin, 1993). At the conclusion of many group projects, students must complete a peer assessment. These assessments may be quantitative with ordinal rankings or may consist of summative information. Research indicates this form assessment may lack validity, fairness, and objectivity (Dochy, Segers, & Sluijsmans, 1999). How can faculty craft peer assessments to reduce friendship marking, discrimination, and enhance its validity?

Student mental health remains a top concern across higher education. Highly evaluative classroom environments detrimentally contribute to student mental health outcomes. In these situations, students were found to be less

motivated and performed poorly compared with lower evaluative classroom environments (Hancock, 2010). Without sacrificing rigor and quality, how can assessments be designed to reduce student evaluative anxiety?

Prior to the conclusion of the roundtable discussion, participants will revisit their stated classroom assessments and learning objectives. Participants will evaluate their assessments according to Bloom's taxonomy and will connect these assessments to their learning objectives. Participants will be left with one final question to work on their own. Do your assessments advance your learning objectives?

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Assessing Student Learning in Medical Education

Courtney Vengrin, Iowa State University; Jessica Juarez, Iowa State University; Jessica Ward, Iowa State University; Allison Yow, Lincoln Memorial University

From assessing student skills in a laboratory setting to monitoring and assessing students while working with live patients, medical education contains unique assessment needs and challenges. Both Medical and Veterinary Medical faculty will lead a discussion on assessment opportunities and issues in the area of medical education. Topics will include clinical/ preceptorship assessment, laboratory and skills-based assessment, and competency-based assessment.

From assessing student skills in a laboratory setting to monitoring and assessing students while working with live patients, medical education contains unique assessment needs and challenges. Traditionally, medical education was assessed using pencil and paper and then oral examinations[3]. These proved invalid for determining student skill with medical procedures and psychomotor skills needed within the profession. With education occurring in the classroom, laboratory, and clinical settings, medical education demands robust assessment practices. In order to accomplish a valid and reliable assessment of student learning in these varied settings, assessment practices have shifted from trait-orientated to competency- or role-orientated approaches based on the teaching method used[4]. However, given the diverse setting, many issues remain in medical education assessment.

Specific and timely feedback is critical for student learning, yet in order to provide this feedback, medical educators must create the time and space to analyze student performance and respond with corrections all the while balancing the needs and safety of patients (*). In recent years, class sizes have grown in both human and veterinary medical education, leaving limited one-on-one assessment opportunities for educators. The clinical and preceptorship settings provide a variety of challenges as often no two assessment opportunities are the same.

To meet these challenges, many assessment types are utilized in both human and veterinary medical education[1,2]. Objective structured clinical examinations (OSCE's) can provide an option for assessment but are time-consuming to administer to large classes[2,3]. Mechanisms such as Clinical Encounter Cards (CECs) and Real-Time Assessments

(RTAs)[5] can be used to provide structured case-based feedback during clinical teaching, but are sometimes challenging to administer in the context of busy hospital caseloads, and require proper training and engagement from instructors.

The ultimate lessons of medical education revolve around problem-solving, critical thinking, and technical skills, but most curricula rely almost exclusively on didactic teaching of content knowledge for the first 2-3 years of the professional curriculum. As a result, traditional examinations are still utilized in classroom settings - but how does performance on multiple-choice tests translate into medical problem-solving skills? While more controlled than clinical experiences, laboratory settings offer the opportunity for more uniform testing of technical skills, but do these experiences represent the skills needed in clinical practice? Within the clinical setting, how can instructors assess students' critical thinking when each case is varied and distinctive, while also prioritizing patient care? We invite you to discuss these and other assessment issues within a variety of medical education settings.

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Bias in Grading: Are You Confusing Style and Achievement?

Rachel Mack, Virginia Tech; Curtis Friedel, Virginia Tech

Differences between your problem-solving style and that of your students may affect subjective grading. More adaptive and more innovative individuals approach problem solving differently, but neither style is better. In reflecting upon the nexus of individual problem-solving style and learning, there are two logical question to ask. First, how does your problem-solving style as an instructor bias your use of a rubric? Second, does your rubric favor any particular problem-solving style of your students? In this conversation regarding assessment and problem-solving style, we will analyze and discuss ways to encourage diversity of thought as expressed in assignments.

Instructors often use essays and writing assignments to assess higher-order thinking skills, reasoning skills, and authentic learning. However, these types of assessment are difficult to standardize for objective grading (Nilson, 2010). While student completed assignments may be presented to achieve a certain level of attainment, it also may be reflective of the student's preferred problem-solving style (Kirton, 2003).

Kirton's Adaption-Innovation (A-I) theory provides explanation to our differences in preferences to solve problems. The KAI, which measures this preference, indicates an individual's preferred problem-solving style on a continuum ranging between 32 and 160, and has a mean of 95 points to form a normal distribution. Individuals with problem-solving styles scoring below 95 points are considered to be more adaptive, while those scoring above 95 points are considered more innovative. When approaching problems in need of solving, more adaptive individuals prefer to do things better, keeping within the structure (Kirton, 2003). A more adaptive student may provide answers that are well tested and certain to work, within bounds of the given structure, with focus on efficiency. When approaching problems, more innovative individuals prefer to do things differently (Kirton, 2003). A more innovative student may approach writing with a wider perspective, less attention to structure, and with focus on change to the alternative. When individuals have a 20-point difference on the KAI scale, it can lead to difficulties in working well together (Kirton,

2003). One's problem solving style is not related to intelligence, motivation, culture, ethnicity, learned skill set, or situation (Kirton, 2003). However, because few are knowledgeable about problem-solving style, instructors may mistakenly assume a student is not performing well on assignments, when in fact there is a gap between them in problem-solving style. Further, few instructors know their own KAI score and how it may bias perspectives of completed essays and writing assignments, or even develop rubrics which are biased and favoring the more adaptive or more innovative.

As a theory based in the cognition of problem solving, A-I theory applies to the classroom as all people are problem-solvers, including both the teacher and the student. If the problem to be solved is learning and how to do learning best, our approach to teaching should include a cognizance of how our diversity contributes to biases, which may influence the instructor's ability to objectively score subjective assessments. Using grading practices that reflect knowledge of the diversity of problem-solving styles reflected in classrooms helps instructors to better promote student-centered learning and embrace diversity of thought in higher education.

This roundtable discussion will highlight the latest research of examining problem-solving style gaps in the classroom as it relates to A-I theory, and examples of how assessment rubrics may place favorable bias towards the more adaptive or the more innovative student. Participants are encouraged to bring grading rubrics to discuss and deconstruct aspects of measuring style and level.

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Nilson, L. B. (2010). Teaching at its best. A research-based resource for college instructors. San Francisco: Jossey-Bass.

Building Students' Professional Identities

Liesl Baum, Virginia Tech

In addition to building a solid foundation of content knowledge in and across disciplines, students must also work to establish a sense of identity. As they progress through their degree program(s), that identity should shift from student to professional with the goal of eventually engaging as a professional in the field while being a student (e.g. in Senior Capstone/Design). The experiences in coursework can be one area where students can observe and strengthen their professional identity, in addition to their co- and extra-curricular work. As instructors, we can employ strategies to help model and build behavior for students. This conversation session will explore norms within disciplines and help identify ways to make slight modifications to interactions with students to help support their development of professional identity.

Conversation: Is Flipping for Everyone?

Caleb Adams, Radford University

Active learning in a student-center classroom has become more commonplace in the collegiate classroom. However there exists several reasons why many instructors remain entrenched in using the traditional lecture method for content delivery. This begs the question, is flipping for everyone? During this conversation pros and cons of implementing a flipped classroom will be presented. Additionally, participants will examine reasons why the active learning process may not be for everyone, instructors and students alike.

A shift in pedagogical practices with an intent to enhance student learning has been a focus of education research for over the past two decades (Johnson et al., 2005). As defined by Missildine et al. (2013), the flipped classroom model is "a hybrid approach to learning, using video recordings to move lecture-type direct instruction to self-directed status and using face-to-face classroom time for interactive learning." In a proper setting, this approach may lead to increased

student achievement (Adams & Dove, 2016; Lawson et al., 2002), decreased student-learning anxieties (Tooke & Lindstrom, 1998), and deeper thinking and improved peer-to-peer interactions (McLean et al., 2016).

Despite the positives that are reported, challenges may arise that often discourage educators from implementing the flipped classroom model. Some deterrents include educators find preparation time consuming (Wanner & Palmer, 2015) or feel an increased workload (Sage & Sele, 2015). Other deterrents include perception of inequality of technology accessibility (Chen et al., 2015) and students' resistance to change (Chen et al., 2014). This begs the question, is flipping the classroom best for everyone?

What are the positives to implementation of the active learning classroom? If there are so many positives, why is not every educator using this process? Is there a middle ground that reaps both the benefits and minimizes the discouragements? This session will examine why instructors made the change to the active learning environment and what roadblocks they experienced along the way. The session will also examine reasons why the active learning process may not be for everyone, instructors and students alike.

This Conversation Session proposes the following objectives:

- Participants will identify common practices used by instructors in an active learning classroom.
- Participants will identify both successes and flops in the construction and implementation of an active learning classroom.
- Participants will identify other deterrents that may lead to instructors not using a flipped classroom.

The primary topic presented is a debate of whether the flipped classroom is to the benefit both the instructor and students. Experienced instructors will be able to share their insights into the pros and cons of using the flipped classroom model as an effective manner of instruction. Instructors that are new to the active learning process or instructors that have not tried flipping their classes will gain insights on methods to use or to avoid when converting their courses revolving around an active learning environment. This conversation will allow participants to share their experiences within the active learning environment as well as help determine if the flipped classroom model is a benefit to all members of the class.

The conversation session will begin with a brief overview of applying an active learning approach and assessment in the active learning environment, including some of the mediator's personal experiences. Participants of the session will then be given instructions to facilitate the overall conversation. Small groups will be provided approximately 8 minutes to discuss topics as delivered by the mediator.

Adams, C. & Dove, A. (2016). Flipping calculus: The potential influence, and the lessons learned. The Electronic Journal of Mathematics and Technology, 10(3), 154-164.

Chen, L., Chen, T.L., & Chen, N.S. (2015). Students' perspectives of using cooperative learning in a flipped statistics classroom. Australasian Journal of Educational Technology, 31(6), 621-640.

Chen, Y., Wang, Y., Kinshuk, & Chen, N.S. (2014). Is FLIP enough? Or should we use the FLIPPED model instead? Computers & Education, 79, 16-27.

Holmboe E., Sherbino J., Long, D., Swing, S., & Frank, J. (2010). The role of assessment in competency-based medical education. Medical Teacher, 32, 676-682

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Johnson, L., Adams Becker, S., Estrada, V., & Freeman, A. (2015). NMC Horizon Report: 2015 Higher Education Edition. Austin, Texas: The New Media Consortium.

Lawson, A., Benford, R., Bloom, I., & Carlson, M. (2002). Evaluating college science and mathematics instruction. Journal of College Science Teaching, 6, 388-393.

McLean, S., Attardi, S., Faden, L. & Goldszmidt, M. (2016). Flipped classrooms and student learning: not just surface gains. Advances in Physiology Education, 40(1), 47-55.

Missildine, K., Fountain, R., Summers, L., & Gosselin, K. (2013). Flipping the classroom to improve student performance and satisfaction. Journal of Nursing Education, 52(10), 1-3.

Sage, M., & Sele, P. (2015). Reflective journaling as a flipped classroom technique to increase reading and participation with social work students. Journal of Social Work Education, 51(4), 668-681

Tooke, D. J. & Lindstrom, L. C. (1998). Effectiveness of a Mathematics Methods Course in Reducing Math Anxiety of Preservice Elementary Teachers. School Science and Mathematics, 98(3), 136- 39.
Wanner, T., & Palmer, E. (2015). Personalising learning: Exploring student and teacher perceptions about flexible learning and assessment in a flipped university course. Computers & Education, 88, 354-369.

Drawing for Data: A Conversation Around Cognitive Mapping and Storytelling

Kathleen Carper, Virginia Tech

Education is an area of research that has been explored in numerous ways; however, many of these ways are predictable, repetitive, and typically quantitative. Understanding the perceptions of teachers and students can help researchers have a more holistic understanding of a phenomenon within education. One way this can be done is via drawing with cognitive maps. By having participants draw, ideas are visualized. From this, storytelling can begin. The purpose of this conversation session is to help educators and researchers further understand the role of drawing as a data collection measure and how it can be used to prompt storytelling.

The conversation session will begin with a brief, introductory activity where participants will create a cognitive map based on a provided prompt. We will then share them as a group, promoting how mapping and storytelling can be a different methodology than a standard interview or conversation. I will discuss my reflections about the strengths and weaknesses of the method based on my research, which will serve as a context for ensuing conversation. Conversation participants will be encouraged to deliberate the aforementioned discussion questions via a "think-pair-share" activity. After each pair has had an opportunity to discuss and share their responses with the group, participants will be given an opportunity to 1) share how they might use this methodology in current or future research 2) reflect on what they have heard and discussed with the group. The session will conclude with a "round-robin" share-out of participants' thoughts.

Sedivy, J., & Johnson, H. (1999, October). Supporting creative work tasks: the potential of multimodal tools to support sketching. In Proceedings of the 3rd conference on Creativity & cognition (pp. 42-49). ACM.
Tikkanen, J., Isokääntä, T., Pykäläinen, J., & Leskinen, P. (2006). Applying cognitive mapping approach to explore the objective-structure of forest owners in a Northern Finnish case area. Forest Policy and Economics, 9(2), 139-152.
Walny, J., Huron, S., & Carpendale, S. (2015, June). An exploratory study of data sketching for visual representation. In Computer Graphics Forum (Vol. 34, No. 3, pp. 231-240).
Wheeldon, J., & Faubert, J. (2009). Framing experience: Concept maps, mind maps, and data collection in qualitative research. International journal of qualitative methods, 8(3), 68-83.

Grace: An Overarching and Supererogatory Habit of Mind

Christopher N. Jackson, Virginia Commonwealth University; Jeffrey W. Murray, Virginia Commonwealth University

In this conversation session, the concept of grace will be explored as a "habit of mind" that in some ways transcends other habits of mind (such as introspection, perseverance, and empathy) often discussed in the literature. Our aim in this session is to introduce the concept of grace as a habit of mind worthy of our consideration as teachers, and to initiate a conversation concerning the role grace might have in higher education pedagogy. Questions we will consider include: "Is grace something that can be taught in the classroom?" and "Is grace something that should be taught in the classroom?"

In this conversation session, the concept of grace will be explored as a "habit of mind" that in some ways transcends other habits of mind (such as introspection, perseverance, and empathy) often discussed in the literature. As a

supererogatory habit of mind, grace differs from tolerance and civility in asking students to engage in human interactions with more than a posture of respect and reciprocity, but with a posture that elevates human interaction itself, out of the situatedness of a moment toward grace's inherent telos: a world in which we continually and with sincerity work to better both ourselves and others. Grace is, in other words, a way of being in the world, and consequently a way of being in the classroom.

This exploration of grace as a habit of mind intersects with other significant conversations in higher education pedagogy having to do with respect--e.g., identity, diversity, and critical pedagogy. These are conversations in which many of our students display at least some degree of fluency. The notion of grace as a habit of mind to nurture and cultivate in higher education, however, approaches such matters from a different angle--one that session participants may find interesting to consider.

When we try to define grace for ourselves, without consulting a dictionary, we come up with ideas like the following. Grace is a kind of gentle inner balance between self-permissiveness and self-restraint. Grace means recognizing others' dignity, and also one's own. Grace is a respectful (even humble) awareness of oneself as existing in the midst of and with others, and conducting oneself with a full acknowledgment of that awareness. In the classroom, that will mean being prepared, sharing one's thoughts as part of a larger conversation, and listening to others' thoughts. This includes the others we find in texts of all kinds. And in an argument essay, for example, it might mean not simply declaring that so-and-so should do such-and-such, but instead acknowledging the complexity of any situation that is worth thinking about seriously.

Our aim in this session is to introduce the concept of grace as a habit of mind worthy of our consideration as teachers. We will elicit the thoughts of participants on the general concept of grace before posing a series of questions as potential conversation points:

1) "Is grace something that can be taught in the classroom?"
2) "Is grace something that should be taught in the classroom?"
3) "If grace is something that can and should be taught, how might grace be taught in the classroom?"
4) "In what ways does concern with (even the possibility of) teaching grace illuminate or reanimate our mission as teachers? Does consideration of grace help answer the question of why we teach?"

Participants in the conversation session should expect to leave with more questions than answers, and a renewed interest in contemplating the mission and obligations of our respective institutions and shared professional responsibilities.

Eubanks, P. (2019, Feb. 1). Can empathy be taught in the classroom? Presentation. 11th Annual Conference on Higher Education Pedagogy. Virginia Tech. Blacksburg, Virginia.

Jackson, C., A. Marx, & J. W. Murray. (2019, Jan. 31). Teaching habits of mind in a general education curriculum. Presentation. 11th Annual Conference on Higher Education Pedagogy. Virginia Tech. Blacksburg, Virginia.

Liston, D. (2000). Love and despair in teaching. Educational Theory, 50 (1), 81-201. doi: 10.1111/j.1741-5446.2000.00081.x

Liston, D. (2008). Critical pedagogy and attentive love. Studies in Philosophy and Education, 27 (5), 387-392. doi: 10.1007/s11217-007-9082-y

Murray, J. W. (2016). Skills development, habits of mind, and the spiral curriculum: A dialectical approach to undergraduate general education curriculum mapping. Cogent Education, 3 (1), 1-19. doi: 10.1080/2331186X.2016.1156807

Roberts, P. (2011). Attention, asceticism, and grace: Simone Weil and higher education. Arts and Humanities in Higher Education, 10 (3), 315-328. doi: 10.1177/1474022211408037

Look Who's Talking: Self-Graded Participation in the College Classroom

Laura Waldrep, North Carolina State University

The goal of this session is to discuss the role of participation in the college classroom, focusing particularly on drawing students into the evaluation process of their participatory efforts by having them engage in self-grading practices. By asking students to evaluate their choices in the classroom, how can we transform the way students view the meaning of classroom community, discussion, and conduct? Attendees will reflect on approaches to design and implement self-graded participation assignments, and as a group we will develop strategies for specific language to use on assessments to prioritize our overall course objectives to enhance participation.

The goal of this session is to discuss the role of participation in the college classroom, focusing particularly on drawing students into the evaluation process of their participatory efforts by having them engage in self-grading practices. By asking students to evaluate their choices in the classroom, how can we transform the way students view the meaning of classroom community, discussion, and conduct? Attendees will reflect on approaches to design and implement self-graded participation assignments, and as a group we will develop strategies for specific language to use on assessments to prioritize our overall course objectives to enhance participation.

Bundick, M. J., Quaglia, R. J., Corso, M. J., & Haywood, D. E. (2014). Promoting student engagement in the classroom. Teachers College Record, 116(4), 1-34.

Gillis, A. (2019). Reconceptualizing participation grading as skill building. Teaching Sociology, 47(1), 10-21.

Rocca, K.A. (2010). Student participation in the college classroom: An extended multidisciplinary literature review. Communication Education, 59(2), 185-213.

Wiggins, B.L., Eddy, S.L., Wener-Fligner, L., Freisem, K., Grunspan, D.Z., Theobald, E.J., â€¦ Crowe, A.J. (2017). ASPECT: A survey to assess student perspective of engagement in an active-learning classroom. CBE Life Sciences Education, 16(2), ar32.

Mindfulness in the Classroom: Goals, Practices, and Assessments

Kim Daniloski, Virginia Tech; Matthew Komelski, Virginia Tech

Join us for a conversation on mindfulness in the classroom! Why have you chosen to incorporate mindfulness practices in your classroom? Which practices have you found most effective? What resources and "lessons learned" can you share?

Mindfulness has been defined as "paying attention in a particular way: on purpose, in the present moment and non-judgmentally" (Kabat-Zinn, 1994, p. 4). This ability is often developed by the practice of meditation, and mindfulness interventions have been shown to "promote relaxation and improve stress management and coping skills" (Creswell, 2017, p. 497). From evidence-based curricula "specifically designed for teaching mindfulness, meditation, and stress management to college students and other young adults" (The Center for Koru Mindfulness, n.d.) to more course-embedded practices, mindfulness has gained increasing attention as a strategy to help improve learning in higher education settings in recent years.

We are interested in facilitating a conversation about faculty experiences with mindfulness in the classroom. Specifically, we'd like to explore why faculty choose to use mindfulness in the classroom, which mindfulness practices they use, and how they've assessed the effectiveness of these practices in reaching their goals. We'd like to close by allowing time for sharing resources and "lessons learned" from experiences incorporating mindfulness practices into the classroom.

We see the session as beginning with a short mindfulness practice (5-10 minutes), followed by jumping into the discussion questions. Our tentative plan would be to allow each session participant an opportunity to answer each question. However, we'd be flexible with this format, depending on each participant's level of experience with mindfulness in the classroom and how the conversation naturally flows.

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Kabat-Zinn, J. (1994). Wherever you go, there you are: Mindfulness meditation in everyday life. New York: Hyperion.
The Center for Koru Mindfulness. (n.d.). About Koru. Retrieved from https://korumindfulness.org/about/who-we-are/

Rapid-Prototyping as Feedback Strategy in Project-Based Courses

Alicia Johnson, Virginia Tech; Miguel (Miko) Nino, Virginia Tech

Feedback is necessary for the learning process. Typical forms of feedback in the classroom include teacher comments on completed projects (summative) or projects in-progress (formative). In a project-based class, where students develop an understanding of a topic by creating a solution to an actual problem, consistent feedback is required to inform students of their progress. During this Conversation Session, an exploration of the use of rapid-prototyping to guide the students' creative process and provide them with early and rapid feedback opportunities to help increase the chances of successful project completion while reducing the project timeline will be discussed.

"Feedback acts like a mirror, to reflect back to the learner 'what their performance looks like'" (Molloy & Boud, 2014, pg. 414). In a classroom environment, feedback is a learning tool used to express the gap between learner performance and performance goals, for the purpose of reaching the desired goals (Malloy & Boud, 2014). The benefit feedback provides learners is an opportunity to discover if they have reached a specific goal in their learning process. Once a learner has attempted to demonstrate their ability to perform a certain learning goal, the feedback they receive should help them answer the question, "did I get it right?" If they did not, the feedback they receive should help guide them to the next learning goal (Driscoll, 2005, p. 376).

In higher education, students spend a great deal of time trying to reach specific learning goals and demonstrating the achievement of those goals to an instructor. Ideally students have opportunities during the learning process to demonstrate what they have learned; usually in the form of assessments. Assessments provide learners with the feedback they need to measure their learning progress. In this Conversation Session, we will discuss the use of Rapid-Prototyping (RP) as a feedback strategy in project-based learning activities. RP is typically used with the design of computer-based projects (Jones & Richey, 2000). It is an approach that includes early and repetitive feedback on a design prototype, producing multiple iterations leading to a final product. The key element of the RP process is the consistent and relevant feedback provided to the designer and developer of the product leading to a well-designed final version ready for its original purpose (Tessmer, 1994). In a learning environment, feedback can be provided in a similar fashion.

Several learning theories include the active use of some form of feedback being provided to the learner. In a literature review focused on feedback's role in five major learning theories (behaviorism, cognitivism, social-cultural theory, social constructivism, and meta-cognitivism) Thurlings and colleagues (2013) found feedback is shown to benefit learners through task-oriented guidance closing the gap between desired and actual performance through in-time, frequent, specific, insightful, unbiased, non-judgmental, and constructive dialog (Thurlings, Vermeulen, Bastiaens, & Stijnen, 2013).

Goals and Objectives: Drawing from our case study of active learning strategies in a project-based graduate course and our use of RP as a form of student feedback, we will facilitate an interactive discussion around current feedback and project-based learning practices. Facilitation will include interactive questions: 1) What types of feedback strategies are being used in project-based courses? 2) What types of project-based courses might benefit from Rapid-Prototyping? 3) How are we assessing creativity in the classroom? Participants will be encouraged to discuss with a partner and then as a group issues they have experienced or questions they have about using these practices in their own classrooms. Students attending are invited to provide their perspectives. The goal is to develop a list of strategies faculty can use to provide feedback to project-based students using RP.

Driscoll, M. P. (2005). Psychology of learning for instruction. (3rd ed.) New York, NY: Pearson.
Jones, T. & Richey, R. (2000). Rapid prototyping methodology in action: A developmental study. Educational Technology Research and Development 48, 63-80. https://doi.org/10.1007/BF02313401.
Molloy, E. K., & Boud, D. (2014). Feedback models for learning, teaching, and performance. In Handbook of research on educational communications and technology (pp. 413-424). New York, NY: Springer.
Tessmer, M. (1994). Formative evaluation alternatives. Performance Improvement Quarterly, 7(1), 3-18.
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Shapeshifting-Borderlands of Engineering Education: Exploring Relationships Between STEM Identities

Natasha Watts, Virginia Tech; Ramón Benitez, Virginia Tech; Robert Emmett, Virginia Tech

This facilitated conversation explores what shapeshifting looks like in engineering education, the relationship between shapeshifting, identity development, and the possibilities of new educational practices to affect STEM identities. Our organizing questions (see below) are framed by current literature on borderlands identity in higher education, specifically in the STEM environments, but with relevance to broader initiatives in diversity, recruitment, and retention. We hope discussion will develop around how and why others frame their teaching and program design relative to their understanding of student identities.

In an effort to approach and understand classroom identities, Davis, Nakayama, and Martin (2000) argue that much earlier research on ethnicity and identity has relied on Eurocentric and outdated assumptions. Epistemologically flawed notions of identity affect higher education pedagogies to the present, including those that aim at anti-racist or diversity work. For example, in STEM education there are long-standing and accepted cultures that clash with students' pre-college experiences, their identities, and ways-of-knowing. Tension between cultures of learning and student identities stymies even efforts to increase diversity of engineering recruits and graduates (Danielak, Gupta, & Elby, 2014). Engineering educators in the U.S. have grappled for decades with long-term demographic trends and a decline in domestic students pursuing STEM and engineering degrees (see, for example Chubin, May, & Babco, 2005; Lichenstien, Chen, Smith, & Maldonado, 2014). As early as the 1950s, educators addressed these trends in utilitarian terms – "making women and minorities in science and engineering for national purposes in the US" through legislation and federal policy (Lucena, 2000). More recently, scholars like Michelle Camacho and Susan Lord (2013) have engaged challenges in engineering education through critical lenses, including cultural theories of identity from queer, feminist, and Chican@ studies. Meaningful institutional-level conversations are also taking place within the Collaborative Network for Engineering and Computing Diversity.

New social science and education research is also connecting how identity and learning reflect la Naguala, or the shapeshifter, inspired by the earlier work on identity by Gloria Anzaldúa. Words in the Nahuatl language with the root "na" are connected to "knowledge" and "creative power" (Zaytoun, 2015). Through the lens of la Naguala, Anzaldúa (2013, 211) asserts that "we shift around to do the work we have to do, to create the identities we need to live up to our potential." Kasun's (2016) multisite ethnography describes how students shapeshift, or take on different ways-of-knowing and of being to create new identities, navigate ambiguity, and understand differently while inhabiting distinct communities. Shapeshifting through the settings of higher education is not always perfect: students' identities sometimes clash with established norms in educational contexts, including in engineering education. Shapeshifting gives a new perspective on STEM recruitment, retention, and identity.

Higher education can be a problematic context for identity formation; it can cause those participating in environments that promote diverse identities to have the feeling of "sameness" (Bernal, Alemán & Garavito, 2009). As higher educational settings that promote diversity, we must go beyond historically limiting binary models, building a more intentional conversation, curriculum, and classroom structure. By considering nagualismo, we will explore a plurality of identities in our learning communities, which encompass students and faculty alike (Aguilar-Valdez et al., 2013).

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Strategies for Stronger Mentoring of Graduate Students

Gary Green, University of Georgia

There is increasing concern across universities about the number of graduate students that are dropping out of or feeling stuck in their programs or experiencing mental health issues. With this concern in mind several universities are creating graduate mentoring academies or are instigating additional training for faculty on how to more effectively mentor their graduate students. Hence, this session will focus on some strategies aimed at helping faculty more effectively mentor their graduate students, so they remain in their programs, obtain a sense of progression, while also maintaining a stronger school, work, life balance.

There is increasing concern across universities about the number of graduate students that are dropping out of or feeling stuck in their programs or experiencing mental health issues. In fact, many universities are witnessing increasing levels of mental health issues, stress and anxiety in their graduate students. Additionally, many graduate students often finish their graduate degree with little or no plan on how to move on and start a career.

With these concerns in mind several universities have created graduate mentoring academies or have instigated additional training for faculty on how to more effectively mentor their graduate students. These trainings have most

focused on increasing timely and quality communication with graduate students, but few have provided actual concrete examples of effective strategies or practices that are known to help graduate students complete their degrees and successful transition into a career. Hence, this session will focus on some strategies and practices aimed at helping faculty more effectively mentor their graduate students, so they remain in their programs, obtain a sense of progression, while also maintaining a stronger school, work, life balance. These strategies will also provide practical examples of how to help graduate students prepare for and transition into their careers.

Teaching College: Trial by Fire

Dale Jenkins, Virginia Tech

For those who aspire to take the helm of a college classroom, where do they learn to teach? What items do educators need in their toolbox? How does one acquire the necessary skills? We will take a look at the current model for "training" teachers for the college classroom and briefly review the history that brought us to this point.

For those who aspire to take the helm of a college classroom, where do they learn to teach? What items do educators need in their toolbox? How does one acquire the necessary skills? We will take a look at the current model for "training" teachers for the college classroom and briefly review the history that brought us to this point. In Chapter 18 of the Handbook of Research on Teacher Education: Enduring Questions in Changing Contexts, Stanford University's David Labaree states, "As it turns out, the relationship between the university and teacher education has been an uneasy one for both parties… Each needs the other in significant ways, but each risks something important by being tied to the other." Our discussion will focus on this relationship and how individuals cultivated their teaching skills, who contributed to their improvement and pertinent areas overlooked due to busy schedules and grading that demand attention. For those educators heading into the classroom -- well-versed in their subject matter, yet in search of the optimal way to package the course material for their students -- we will discuss in-roads to improving the delivery process and ways to maximize the exchange for students and the instructor. How can we assist other teachers as they traverse this path? Does the secret rest in the educators' ability to connect with the students or solely in better methodologies that highlight the treasure trove of the teacher's discipline? We will compose a list of resources during our discussion that will be available to all attendees following our time together. My name is Dale Jenkins, and I have been teaching college students for more than two decades. I look forward to generating ideas in our roundtable discussion that will assist attendees in polishing their teaching skills, as well as delving into some of the methods that the educators in attendance found valuable in their teaching journeys.

Undergraduate Interdisciplinary Collaborations: Connecting Narrative-Based Research Projects to Communities

Donald Snyder, University of Maryland Baltimore County

Interdisciplinary CoLab is an initiative at University of Maryland Baltimore County that provides students with an innovative team-based applied learning opportunity through an internship in narrative-based research. Interdisciplinary teams of undergraduate students working with a faculty member utilize diverse research methods, modes of analysis, and the production tools necessary to produce public-facing projects. The program's goal is to provide students with a professional research experience while telling effective stories and amplifying voices to the general public. This discussion highlights the program's first two years talk about the value, development, and challenges of cross-college collaborations at attendees' institutions.

"The Interdisciplinary CoLab is an initiative at University of Maryland Baltimore County (UMBC) provides students with an innovative team-based applied learning opportunity through a three-credit (30-hours per week) paid internship in narrative-based research. Interdisciplinary teams of undergraduate students working with a faculty or staff member

utilize diverse research methods, modes of analysis, and the production tools necessary to produce public-facing final projects. The object of the program is to provide students with a professional research experience while telling effective stories and amplifying voices to the general public.

The Program experience is very different from course-based group projects in which students are all working to master the same materials within a common disciplinary framework. Here students are working with students from other disciplines to create a project that meets the needs/specifications of a client. Students learn things pertinent to their areas of study as well as outside their areas of study. They learn from each other about different tools/approaches based on their different disciplines.

Students are introduced to the program through a common curriculum developed by the CoLab committee. During the first two weeks (in between meetings with their individual projects), the cohort participates in a series of workshops on collaboration, professionalism, narratives and narrative research, interviewing, ethics, and digital storytelling.

Over the first two years of the program, there have been six projects, with a total of 22 students. The pilot programs focused on on-campus clients, including our library Special Collections Department, our Center for Truth, Racial Healing, and Transformation, and our Sustainability Office. In the second year, we made an attempt to partner with community initiatives, collaborating with the National Oceanic and Atmospheric Administration, and the Baltimore Immigration Museum on separate projects. Completed projects have resulted in the creation of videos, pamphlets, websites, and an interactive presentation about global warming presented on the Science on a Sphere platform.

Through various assessments conducted with students, project leaders, and 'clients' we have discovered that everyone involved considers the program a success. The program has met or exceeded our goals of presenting students with research opportunities while engaging with the larger community through the creation of outward facing narrative-based research projects.

The proposed session will present a short overview of the CoLab program, highlighting the value of undergraduate interdisciplinary collaboration in the creation of projects for community clients. The facilitator will then lead participants through a discussion of various benefits and challenges related to the program. The session will also ask attendees to brainstorm ideas for projects that would highlight unique fields of inquiry and investigation on their own campuses, and share those ideas with the other participants.

Blumenfeld, P. C., et al. (1996). Learning with Peers: From Small Group Cooperation to Collaborative Communities. Educational Researcher, 25(8).

Lattuca, Lisa R., (2001). Creating Interdisciplinarity: Interdisciplinary Research and Teaching among College and University Faculty. Tennessee: Vanderbilt.

Webster, L., Mertova, P. (2007). Using Narrative Inquiry as a Research Method. London: Routledge.

When Teaching is "Other Duties as Assigned"

Candice Benjes-Small, College of William and Mary

Teaching faculty are not the only ones providing credit-bearing courses on many campuses. Librarians, academic staff, and others outside of academic disciplinary departments may teach semester long classes in student success, in general education, or as adjuncts in academic departments. Let's talk about the benefits and challenges of teaching when it's not your primary responsibility. Those who are interested in exploring teaching as well as those who already teach are welcome!

Back in 2008, I was selected to represent the library for our university's general education overhaul. My committee redesigned the approach to freshman composition, turning it into a four-course sequence taught over the first two years of a student's college careers. This approach was labor intensive, with 75 sections of the sophomore classes needing instructors each semester. I was asked to become an instructor of record for two of the courses, one on critical thinking and the other on ethical reasoning.

I was at first terrified. I had been a librarian for 10 years and had taught hundreds of library workshops, but those were one-and-done. I had never taught a semester-long class. I had never created assignments, had never had to deal with student management issues, had never had to grade papers. But I held my breath and jumped in.

Over the next 9 years I taught one class every fall, spring and summer. I learned so much about teaching, about our students, about the life of faculty, and about the politics of campus. I made connections outside the library that would never have been possible without the teaching experience. What I learned made me a better librarian.

Of course, not all the lessons were pleasant. Grading can be drudgery. Students can have stressful lives, and they can bring that stress into the classroom. I got to see "how the sausage was made" in curriculum meetings, for better or worse. The paperwork to get the okay to teach can be Kafkaesque.

I'm now at William & Mary and just started teaching an elective in media studies, and am already learning so much about my new institution.

My goal for this session is to bring together librarians and other non-teaching faculty and staff to discuss ways teaching has affected them professionally. I think it could be a vigorous and enlightening conversation!

Who Pays the Price?: Open Education and Course Materials

Philip Smith, East Tennessee State University; Ashley Sergiadis, East Tennessee State University

Join us for a conversation in which we will explore the shifting responsibilities instructors have for choosing course materials and creating ancillary materials such as presentation slides, handouts, labs, and assessments. Instructors increasingly rely on large publishers not only for textbooks but prepacked digital service platforms for homework, quizzes, and other learning materials -- but the cost is often passed on to students who are already struggling with rising tuition and other fees.

In this conversation, we would like to explore the shifting responsibilities instructors have for choosing course materials and creating ancillary materials such as presentation slides, handouts, labs, and assessments. Instructors increasingly rely on large publishers not only for textbooks but prepacked digital service platforms for homework, quizzes, and other learning materials -- but the cost is often passed on to students who are already struggling with rising tuition and other fees. At East Tennessee State University, the Student Government Association recently passed a resolution calling on faculty to limit the use of such digital service platforms and take more responsibility for creating their own or offering free ancillary learning materials. Though many instructors are sympathetic to the plight of financially struggling students, instructors often perceive these digital services to be of the highest quality available and easiest to implement. Open Educational Resources (OERs) may offer an alternative, but significant barriers still exist for instructors in many disciplines. Though OERs have proliferated and gained more visibility and support in recent years, they generally focus on textbooks but are limited in regards to ancillary materials. Following the lead of many other institutions, ETSU has developed an OER Awards program to incentivize instructors to use OERs which has so far had a positive impact but has also raised a number of questions that we feel could benefit from discussion with the larger academic community at a venue such as CHEP. A glance at the flurry of impact studies and a burgeoning field of scholarship on OER and Open Education Pedagogy suggests to us that ETSU is not facing these issues alone. A sampling of relevant literature can be found on the Open Education Group website.

Topics and questions will revolve around issues of access, cost, privacy, copyright/legal, and academic outcomes as pertains to instructors' role in selecting learning materials.

We have in mind the kinds of studies sponsored by the Open Education Group here:
http://openedgroup.org/publications

Also, some recent articles about digital services platforms:

Assalone, A., Preston, D., & McElroy, B. (2018). Unexpected hurdles: Unpacking the price tag of college affordability. Southern Education Foundation. https://files.eric.ed.gov/fulltext/ED591436.pdf
Access Denied: The new face of the textbook monopoly: https://studentpirgs.org/2016/09/21/access-denied/

PRACTICE SESSIONS

"This I Believe": Personal Philosophies to Inspire and Engage

Merrie Winfrey, Radford University; Laura Vernon, Radford University

"This I Believe" was a 1950s radio program started by journalist Edward R. Murrow, revived by National Public Radio in 2005, and now heard on the "This I Believe Podcast." Famous and not-so-famous people read personal essays about the guiding principles by which they live. In this session, participants will listen to some essays and discuss them as an instructional strategy. The facilitators will share how they have used "This I Believe" as a reflective and inclusive practice. Participants will leave the workshop with at least one idea on how to incorporate "This I Believe" into their work with students.

"This I Believe" was a radio program started by journalist Edward R. Murrow in the 1950s, revived by National Public Radio (NPR) in 2005, and now heard on the "This I Believe Podcast." Famous and not-so-famous people read personal essays about the guiding principles by which they live. The original program was intended to be provocative, stimulating, and helpful to listeners. Jay Allison, producer of the show for NPR, says the program is "'an exercise in philosophical self-examination in a public context.'" It is difficult to read or listen to these essays without thinking, "What do I believe in?"

The purpose of the "This I Believe" exercise is to encourage students to critically reflect on their beliefs, values, assumptions, and experiences and consider how their way of seeing the world has changed or can change over time (Mezirow, 1978). It provides a framework within which students can address uncertainties of a complex situation and make meaning of experiences (Dewey, 1933) as they reassess the assumptions and expectations that frame their thoughts, feelings, and actions (Mezirow, 1978). Reflection can also include recurrent incidents or disruptive moments that lead to innovative shifts in problem-solving intended to produce improvements in reflective practice (Schön, 1987).

Furthermore, students are telling stories—their stories. "This I Believe" is a palpable demonstration that everyone has a communally relevant story to tell. It is an inclusive practice. With the right framing, this exercise has the potential to positively alter feelings of social belonging for minoritized students and have significant effects on academic performance, health, and well-being. (Walton, 2014). At least one study has shown that personal storytelling with the intent of benefiting someone else can reinforce a sense of social belonging that has positive effects throughout college for African-American students. (Walton & Cohen, 2011).

In this workshop, participants will listen to a handful of essays and discuss them as an instructional strategy. What is the value to individuals and to a community of reflecting on the beliefs of others? What is the value in reflecting on our own beliefs? Then, participants will spend some time crafting ways to use the "This I Believe" assignment with students. They will leave the workshop with at least one idea on how to incorporate "This I Believe" into their work with students.

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Mezirow, J. (1978). Perspective transformation. Adult Education Quarterly, 28(2), 100-110. DOI: 10.1177/074171367802800202

Schön, D. A. (1987). Educating the reflective practitioner. San Francisco: Jossey-Bass.

Walton, G. M. (2014). The new science of wise psychological interventions. Current Directions in Psychological Science, 23(1), 73-82. DOI: 10.1177/0963721413512856

Walton, G. M., & Cohen, G. L. (18 March 2011). A brief social-belonging intervention improves academic and health outcomes of minority students. Science, 331(6023), 1447-1451. DOI: 10.1123/science.1198364

3 Tools to Enhance Your Course

Stephanie Dashiell, Prince George's Community College

If you're looking for a way to refresh your course with the help of technology, this is the session for you! Bring a device such as a cell phone or a tablet, and learn all about Pear Deck, The BAND App, and Loom Screen Recorder. No matter the subject, any of these tools can scratch that itch you've had to try something new. If you're not comfortable with technology, don't fret! There is information is for instructors of all levels.

The future of education lives in technology. Faculty who are not using technology will have to shift their pedagogy to include tools that are effective for the learners of today. Pear Deck, The BAND App, and Loom Screen Recorder are three tools that can enhance any higher education classroom. Pear Deck is an add-on to Google Slides. It only works in Google Chrome, but it allows faculty members to create or upload PowerPoints that have interactive slides. Students visit joinpd.com and enter the code for their instructor's presentation (just like Kahoot!). The PowerPoint is then displayed on student's devices (laptops, tablets, cell phones, etc.). The slides change on their devices as the instructor clicks through the presentation. The instructor also has the option of including interactive Pear Deck slides that the students can answer straight from their devices. Students do need a Google account in order to access the presentation because once it's over, the instructor can email the presentation to students with the student's responses from the session. All responses are anonymous, so the students do not have to worry about being embarrassed about typing the wrong answer. The BAND App is a wonderful app to use in addition to Blackboard. It sends push notifications to student's phones which is really helpful when there are students in the class that do not check Blackboard often. The BAND App allows instructors to create private groups for each class. It is very simple to copy posts from one group to the other. Each BAND group has a news feed for announcements, videos, links, files, polls, and more. There is also a shared calendar that allows the students or instructor to input important dates such as assignment due dates and exam dates. There is a private chat area that allows group members to chat with the instructor or fellow students without exchanging phone numbers. Loom Screen Recorder also works only in Google Chrome. It allows instructors to create videos of their screen or of themselves using the webcam. Instructors can also use both options and record the screen and use the webcam at the same time. This is very beneficial when instructors want to record lectures, PowerPoints, create tutorials for students, and more. Loom videos can easily be shared or downloaded and used in Blackboard or other online classrooms. Attendees will view the presentation live and from their cell phones or tablets. The Pear Deck add-on will be used. Several interactive Pear Deck slides will be included in order to model what a Pear Deck PowerPoint presentation might look like in their classes.

Activating Conscientious Discussions in Classrooms Using ThoughtSwap

Chandani Shrestha, Virginia Tech; Deborah G. Tatar, Virginia Tech

In this practice session we address difficulties that instructors and students face in co-located classroom-based discourse. The session will not only focus on increasing participation, but also investigating elements of making those discussions conscientious. We will use ThoughtSwap, a web-based platform developed at the ThirdLab@VT to facilitate. We will also use a pedagogical strategy proposed by Dr. Deborah Tatar, "Draft, Depict, Depose" in conjunction with the tool. The session will explore the significance of promoting inclusive discussions and how the design of tools like ThoughtSwap can change setting in a common space to promote deeper discussions.

Evoking discussions with most students participating is already a challenge caused by various factors like students being uncomfortable, their lack of confidence or fear of being judged for having a unique thought. Other factors like students' inability to "hear" their peers while formulating their own thoughts is an added barrier in making those discussions not just participatory but also meaningful. In classroom discussions the whole class as a group can bring in diverse lenses to discuss and explore ideas, and if meaningful and conscientious such discussion can also possibly challenge and/or change original views (with continuous practice) where applicable, therefore prompting students to think deeply. We aim to undertake this massive challenge with a small but significant step; facilitating inclusive,

engaging and deeper conscientious discussions in classrooms. There are two apparent issues to be addressed. The first being, inclusively bringing together the whole class to participate in discussions. The second, making that participation count in terms of making such discussions meaningful.

We introduce a web tool ThoughtSwap, designed and developed for the specific purpose of facilitating discussions in classrooms, with features like anonymity, that we hope can encourage students' participation by changing the power and authority in class as to who can say what in presence of an instructor and peers. Furthermore, ThoughtSwap works in conjunction with the pedagogical strategy of "draft, depict, depose" to help the class make the best use of the tool, and also to encourage the class to draw out of it, be present and hold meaningful discussions.

ThoughtSwap allows instructors to share a prompt which the students receive instantly and answer in real-time, anonymous writing, thus drafting their "thoughts". Students submit their drafts which appears in the facilitators' screen as rearrangeable collection. Those thoughts can be redistributed, such that every student will receive a thought submitted by another, where the received may be contrasting or similar to the original thought. Students may analyze the received thoughts in small group discussions, in the process also depicting the thoughts that do not belong to them. The outline of ideas from those small group discussions may be presented to the whole classroom, thus deposing the summarized thoughts of the whole class.

The integration of "draft, depict, depose" with ThoughtSwap combines authorial privacy with classroom accountability to promote face-to-face discussion. A discussion might provoke a thought, however turning it to a conscientious one is a major challenge. Our claim is not that the use of ThoughtSwap with the suggested strategy brings about drastic change at once. This is an ongoing study, and we believe the practice of the proposed approach has to be a recurring one in any course.

For the practice session, we plan to design the session structure in a way to let the audience experience the students' side of ThoughtSwap interaction, by holding a live discussion using ThoughtSwap. We will provide a prompt and facilitate discussions both in and out of the system (ThoughtSwap) making this session a fully interactive one.

Margaret Dickey-Kurdziolek, Matthew Schaefer, Deborah Tatar, Ian P. Renga, Lessons from thoughtswap-ing: increasing participants' coordinative agency in facilitated discussions, Proceedings of the 2010 ACM conference on Computer supported cooperative work, February 06-10, 2010, Savannah, Georgia, USA [doi>10.1145/1718918.1718934]

Active Learning Strategies: Module-Based Activity Assessments and Brain Breaks

Julia Castleberry, Emory & Henry College

Engaging learners with active educational assessment and brain breaks will bring content to life. Energize yourself and your learners with a variety of activities used to enhance and to reinforce your learning objectives. You will take away module ideas and activities appropriate for classroom learning with class sizes ranging from 1 to 50 students. These activities can be used in a variety of content areas and among learners of all ages.

Assessments of learning are designed to gauge students' understanding of content and students' performance (Hanna & Dettmer, 2004). Using assessments which provide real-time feedback for you and your students is critical. Accommodations, preferred learning styles and institutional pressures for tracking learning objectives and students' performances create a stressful instructional environment. Consider using content modules with knowledge checks inclusive of multiple-choice questions, open-ended questions, peer feedback, and case analyze. Organizing courses into modules facilitates self-assessments, tracks learning and target objectives. Types of modules can vary with hybrid models of presentations plus written compositions, peer grading with answer investigation, and multiple-choice questions plus case analyzes. In addition, having a kinetic component with the learning assessment engages learners. Demonstration, debate, and action associated activities enhance content inputs and retention.

Encourage curiosity and exploration by utilizing dynamic assessments and physical activities. According to Stapp and Karr (2018), physical activity offers significant academic, physical, and social benefits. Participants' on- and off-task behaviors were observed and findings from the study indicated that providing daily physical activities within the school day significantly increased on-task behaviors for fifth graders in the classroom (Stapp & Karr, 2018). Content modules inclusive of a variety of knowledge measures will provide a holistic perspective to learning and to the students' performance. Learning is more than read, listen, and then test. Motor tasks associated with learning enhance retention (Ferrer & Laughlin, 2017). Standing, writing, and presenting combined may be utilized with content modules. Incorporating computer-based testing with an activity reinforces content and retention. Learning assessments should reflect content delivery, retention, and application.

Having a variety of content delivery methods will assist in engaging students. In addition to videos, cases, PowerPoint presentations, group activities and discussions, consider adding Brain Breaks to your instructional toolbox. Brain Breaks are an effective and efficient way of energizing and focusing learners as participation is required. Brain Breaks are structured physical activities lasting three to five minutes which can occur during instructional time (Ferrer & Laughlin, 2017). You can positively impact learners' perceptions, concentration, and participation in class (Stapp & Prior, 2018; WHO, 2018). Brain Breaks reinforce content, serve as review tools and allow instructors to gauge understanding of the material in real-time.

We will explore the use of content modules as learning assessment tools and the incorporation of Brain Breaks to facilitate active learning.

1) Objectives for the Module-Based Activity Assessments and Brain Break Session include
2) Creating module-based activity assessments
3) Incorporating Brain Break strategies to enhance active learning

Ferrer, M. E., & Laughlin, D. D. (2017). Increasing college students' engagement and physical activity with classroom brain breaks. Journal of Physical Education, Recreation & Dance, 88(3), 53-56. Retrieved from https://shapeamerica.tandfonline.com/doi/abs/10.1080/07303084.2017.1260945#.W7OnSWhKhPY

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Healthy People 2020. (2010). Retrieved from https://www.healthypeople.gov/

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Applying an Inclusive Teaching Rubric to Higher Education Teaching

Deyu Hu, Virginia Tech

In this session the presenters will introduce an inclusive teaching rubric that has been developed to guide the design, development, delivery, evaluation, and improvement of inclusive teaching in higher education. Examples will be provided to explain the specific standards and their application to teaching. Participants will have chance to discuss issues and challenges of integrating the rubric into their teaching. They will also develop individual plans of implementation and provide feedback to their peers' plans. At the end of the session, faculty will develop concrete plans of making their teaching more inclusive.

As the U.S. population becomes increasingly diverse, so do the higher education campuses. Since universities and colleges train, develop, and replenish the workforce, it is important that higher education institutions effectively educate future workers who have diverse ethnic, racial, cultural, and socioeconomic backgrounds. Doing so can not

only provide quality education to all students and thus help the U.S. remain competitive in the global economy but also address the persistent social inequities, such as achievement, retention, and graduation rates for low-income, first-generation, and underrepresented students of color across both secondary and postsecondary levels (Milem, 2003; Nelson Laird, Engberg, & Hurtado, 2005; Williams, Berger, & McClendon, 2005).

The concept of inclusive teaching, however, is daunting to many faculty in higher education (Nguyen & Nolan, 2013). On one hand, when faculty are asked to infuse inclusive teaching into their classes, they are not clear on why. In fact, students simply do not check their identity at the classroom door. Their prior knowledge, experience, social identity, and many other characteristics play important roles in their learning. Studies show that helping students cope with stereotypes and supporting their social belonging can improve their persistence and academic success (Hurtado, Alvarez, Guillermo-Wann, Cuellar, & Arellano, 2012; Steele & Aronson, 1995; Walton & Cohen, 2011). On the other hand, even when some faculty are interested in utilizing inclusive teaching in their classes, they do not know how. For example, some faculty state that their classes are about math, science, or engineering. They cannot see how inclusive teaching can be integrated into their classes.

To address this need, an inclusive teaching rubric has been developed for the design, development, delivery, evaluation, and improvement of inclusive teaching in higher education. The rubric is based on a literature review of what has been studied in inclusive teaching as well as best practices from the front lines. In this session, the presenter will introduce the framework of the rubrics as well as basic standards developed for inclusive teaching in higher education. Participants will work in both small and full groups to discuss the standards and applicability to their courses. They will also have chance to discuss issues and challenges of integrating the rubric into their teaching. Later in the session, the participants will use several selected sub-standards to develop individual plans of implementation and provide feedback to their peers' plans. At the end of the session, participants will develop concrete plans of making their teaching more inclusive. Faculty, instructional designers, and faculty developers in higher education may find this rubric relevant and useful.

Hurtado, S., Alvarez, C., Guillermo-Wann, C., Cuellar, M., & Arellano, L. (2012). A model for diverse learning environments: The Scholarship on creating and assessing conditions for student success. In J. Smart & M. Paulsen (Eds.), Higher education: Handbook of theory and research, vol. 27, (pp. 41-122). Dordrecht: Springer.

Milem, J. (2003). The educational benefits of diversity: Evidence from multiple sectors. In M. Chang et al. (Eds.), Compelling interest: Examining the evidence on racial dynamics in higher education, (pp. 126-169). Stanford, CA: Stanford University Press.

Nelson Laird, T., Engberg, M., Hurtado, S. (2005). Modeling accentuation effects: Enrolling in a diversity course and the importance of social action engagement. The Journal of Higher Education, 76(4), 448-476.

Nguyen, L., & Nolan, S. (2013). Your sphere of influence: How to infuse cultural diversity into your psychology classes. Psychology Teacher Network, May 2013.

Steele, C. M., & Aronson, J. (1995). Stereotype threat and the intellectual test performance of African Americans. Journal of Personality and Social Psychology, 69(5), 797-811.

Walton, G. M., & Cohen, G. L. (2011). A brief social-belonging intervention improves academic and health outcomes of minority students. Science, 331(6023), 1447-1451.

Williams, D., Berger, J., & McClendon, S. (2005). Toward a model of inclusive excellence and change in postsecondary institutions. Association of American Colleges and Universities, Washington, D.C.

Are You a Teaching Ninja? Gen Z Edition

Candice Benjes-Small, College of William and Mary; Susan Van Patten, Radford University

Higher education is rich in tradition, some for the good and some for the bad. Why do we continue to lecture when we know research has proven it to be less effective than other methods? Maybe it's because it was the way we were taught or what students expect. This interactive session will explore educational theories and practices to determine which are based upon sound pedagogical practices supported by cognitive developmental research and which are myths or common

misconceptions. Bring your competitive spirit and knowledge of "Gen Zers" to see if you are truly a teaching ninja.

Upon completion of this session, participants will be able to:

- Discriminate between learning theories that are solidly rooted in research and those which need debunking;
- Explain why some teaching strategies are more effective than others; and
- Incorporate current pedagogical research into their teaching practices.

Many professors teach the way they were taught or use techniques that they liked as students. As one professor memorably put it to a co-author: "How did I learn to teach? By observing teachers for 20 years." But a growing body of evidence suggests that our personal preferences and "gut instincts" about how people learn are often wrong. Professors should examine their teaching practices and question their effectiveness, rather than perpetuating pedagogical choices which in fact do not promote learning. As we learn more about the next generation of college students, many of us may question whether it is necessary to adapt our teaching practices to better serve Generation Z.

This session will be structured as an interactive group quiz. The audience will be divided into teams and shown a series of common teaching practices or learning theories related to Generation Z or "Gen Z." After each one, the team will have an opportunity to briefly deliberate and vote on whether it is an urban legend or sound pedagogy. After each vote we will discuss current research related to the topic and how it can influence our teaching strategies. The team with the most correct answers will be declared winners and given "Teaching Ninja" pins.

Becoming an Accessibility Ally

Christa Miller, Virginia Tech

As instructional strategies and technologies change, there is a risk that students with disabilities will experience lower rates of student success. National statistics indicate the U.S. population with disabilities will continue to grow. In higher education, the universal design for learning framework continues to be adopted as a researched-based framework for providing inclusive learning environments for all students, including those with disabilities and other underrepresented groups. To support that, Virginia Tech pilot-tested Blackboard's Ally accessibility LTI to look for impact on the institution, instructors, and students. We will discuss its implementation, its results, and its future.

Frequently the headlines of communications like Inside Higher Ed and The Chronical of Higher Education bring issues around student success to the forefront. While the initiatives for increasing student success vary between institutions, technology tends to play a key role in those initiatives (Grajek, 2019).

However, when the accessibility of technology is not considered, students with disabilities are affected. There are numerous trends in higher education related to teaching and learning that make it more difficult for students with disabilities to complete degrees and obtain employment afterward. Trends such as increased class sizes, some assessment types, and the design of online courses affect the success of students with disabilities at a higher rate than other underrepresented groups. According to recent data, minimally 12.7% of the U.S. population lives with a disability, and the largest categories are physical (51.4%), cognitive (37.8%), and hearing (28.3%) (Boege, et.al. 2019). Given that our campuses often rely on the ability to show up for class, be cognitively present and listen to a lecturer, it is no wonder that students with disabilities face many barriers to our traditional and innovative methods of teaching and learning.

Many empirically sound, teaching strategies such as universal design for learning UDL) and universal design for instruction (UDI) have demonstrated that designing instruction to meet the needs of students with disabilities coincides with improvements in the experience of other underrepresented students (Burgstahler, 2015) (Meyer, 2013) (Pace,

2008). What then can an instructor do beyond changes in pedagogy and instruction to support the wide variety of student abilities and needs to support student success?

While many technology tools exist for either an instructor to improve the accessibility of course materials or a student to use adaptive/assistive technology to access said materials; few tools can do both. There is currently a tool available for integration with a wide variety of learning management systems (LMS) called Ally. When integrated with the LMS, it provides three key features that can dramatically improve an institution's level of accessibility. Firstly, it provides the institution with a report to help pinpoint colleges, departments or courses where there is a need to improve the accessibility of course materials. Secondly, it provides instructors with clear instructions on what materials need improvement and how to do it. Lastly, it provides students real-time access to alternative formats. For example, a student can instantly download a PDF document as an audio file.

During this interactive session, we will share the results of the 2018-2019 Ally pilot run at Virginia Tech. During our pilot, we targeted 13 existing accessibility allies to be faculty participants. We will share the faculty's opinions of Ally as well as the relative accessibility of their content before and after Ally's implementation. We also share our findings related to the student-facing real-time alternative text. Last, but not least, we will discuss the current plans for expanding Ally usage at Virginia Tech and strategies for adoption.

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Best Practices in Assessment from Start to Finish

Allison Case, ExamSoft

The emergence of computer-based testing has brought with it the opportunity to use data to inform almost every aspect of our teaching, assessment, and accreditation. In this session, attendees will experience how computer-based testing facilitates psychometrics-informed item creation, piloting, and review, and assessment construction. Illustrations of feedback to direct student learning, inform teaching, and support accreditation will be included. Interwoven into the session will be assessment creation best practices that can be adopted by any program. The session will conclude with opportunities for the attendees to engage in self-reflection to identify opportunities to incorporate lessons learned in their programs.

Best Practices in the Construction of Multiple-Choice Questions

Brian Hill, Edward Via College of Osteopathic Medicine

As instructors, we test our students regularly, often utilizing multiple choice exams. Many of us merely imitate our former instructors in terms of constructing multiple choice questions as we have had had no formal training in this area. This session will focus on writing better exam questions by presenting the best practices for construction of multiple-choice questions, and how to write items that test on higher cognitive levels. Particular emphasis will be placed on the item

writing guidelines used by standardized exams such as the Medical College Admissions Test (MCAT) or Graduate Record Exam (GRE).

Multiple choice questions (MCQs) are ubiquitous to high stakes educational exams (ex. GRE, SAT, MCAT, etc.), most licensure exams and continuing education courses. They are heavily used in many academic disciplines, particularly health-related disciplines. MCQs provide unparalleled efficiency in testing large numbers of examinees in a wide breadth of content.

When constructed properly, MCQs can assess content knowledge at the levels of comprehension and application, and they can even be utilized to assess at higher orders of Bloom's taxonomy. As such, they can effectively discriminate between high, medium and low achieving students (1).

A survey of the literature produces over forty principles of MCQ construction, and these are well documented in educational textbooks (2-4). Item writing manuals for profession licensure exams are often concise and practical sources for best practices in MCQ construction. Technically flawed MCQs can affect the validity and reliability of the MCQ (5) and can have a negative influence on student performance (6). In spite of this, very few college faculty are trained in the best practices for writing multiple choice questions and this even holds true in disciplines where MCQs dominate exams. This lack of formal training results in poor construction quality and an abundance of MQCs written to test lower cognitive levels or obscure, unimportant factoids (7,8)

The literature contains multiple studies illustrating the faculty improvement following MCQ writing workshops (7, 9-11). While this proposed CIDER session will not be the equivalent to a full-fledged MCQ writing workshop, it will focus on correcting the most common technical flaws and how to write MCQs that test to higher cognitive function.

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Beyond Empathy: Toward a Pedagogy of Polyphony

Jeffrey Murray, Virginia Commonwealth University

This practice session will first review the importance of empathy development in undergraduate education, and examples of empathy-building assignments will be shared and solicited from participants. The session will then present a pedagogy of polyphony, based on Mikhail Bakhtin's Problems of Dostoevsky's Poetics, which moves beyond empathy for an other to empathic awareness of a plurality of others. Examples of assignments that seek polyphony (beyond empathy) will be discussed, and participants will brainstorm ways to transform existing

assignments beyond empathy toward polyphony. Participants should leave with a general understanding and concrete ideas about incorporating a pedagogy of polyphony.

This practice session will begin by discussing the importance of including the development of empathy in undergraduate curricula, particularly in the first-year seminar. Peter Eubanks, at this conference last year, reviewed and summarized compelling work on both the importance of empathy and ways in which empathy can be developed and taught in the classroom. Insofar as it serves as a starting-point for this project, that body of work will be quickly reviewed (see both Fink and Keen). A few examples of assignments that target or include empathy-building will be provided, as well as solicited from session participants.

The session will then shift to discussion of a pedagogy of polyphony, providing a brief theoretical grounding of the concept using Mikhail Bakhtin's Problems of Dostoevsky's Poetics. A pedagogy of polyphony seeks to move beyond empathy for an other to an empathic awareness of a simultaneously-present plurality of others. As Bakhtin argues, Dostoevsky was able to represent "A plurality of independent and unmerged . . . consciousnesses, a genuine polyphony of fully valid voices" (6, original emphasis). Dostoevsky's gift was his ability to see "the world in terms of interaction and coexistence" (31). Appreciation for plurality, coexistence, and the autonomy of others' voices, therefore, is at the heart of a pedagogy of polyphony. Here too, a few examples of assignments that target or include polyphony (i.e., beyond empathy) will be provided, as well as solicited from session participants.

To understand a pedagogy of polyphony, one can think of a trajectory from monological to dialogical to polyphonic writing / assignments. In monological assignments, students are asked to report their own observations or develop their own arguments. For example, students might be asked to write about a personal experience or to state and defend a position on a controversial issue. In dialogical assignments, students are asked to consider an alternative viewpoint (and perhaps engage in conversation with it, though here we define as dialogical any assignment that has another person's experience or perspective at the center). For example, students might be asked to write a letter in the voice of a character in a book, rewrite a scene from another character's perspective, or consider and respond to an opposing viewpoint. [Note that a traditional debate may be monological rather not dialogical if the focus is on taking turns stating arguments without much listening or rethinking (see Foss and Griffin).] And in polyphonic assignments, students are asked to simultaneously engage multiple viewpoints (and perhaps to do so in a collaborative group project). For example, students might be asked to write a play in which they give voice to multiple characters, or take part in a policy roundtable in which they not only present but also respond to multiple other viewpoints (or better, incorporate them their own position).

The practice session will conclude by allowing participants time to brainstorm ways in which they could (1) introduce empathy-building into existing assignments in their courses, or (2) transform existing assignments beyond empathy and toward polyphony.

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Bringing Chaos to the Classroom

Christopher Mesaros, The Washington Center for Internships and Academic Seminars

The workforce of tomorrow is unpredictable and our students will, more than ever, need critical thinking and adaptability skills. Chaos Theory of Careers is a model for career development that emphasizes flexible thinking, discourages linear planning, and prioritizes transferable skills — all elements that find compatibility with our work in the classroom. This session will introduce ways to bring chaos into the classroom (constructively). Participants will see demonstrations of different pedagogical approaches to disrupt traditional degrees-to-careers thinking and see how the work we already do fits campus priorities for post-college preparation.

As a result of changing student priorities related to careers after higher education, colleges and universities are placing more emphasis on job placement and ROI for academic programming. While this has not always meant happy partnerships with faculty and constructive influence in what happens in the classroom, there are career development theories that find easy transfer to the learning environment and with little adjustment on the part of faculty. One such theory, Chaos Theory of Careers (CTC), borrows from other disciplines to suggest that any attempt to predict the career paths of our students or future of work is impossible. Rather, our role as educators is to help those in our charge develop the broad skills and dispositions necessary to face an unpredictable world.

The application of CTC in the classroom could happen in many ways, but would include critical thinking, problem solving, ambiguity, and adaptive learning. As a general rule, CTC rejects clean, linear visioning about the future, instead asking individuals to see a messy web of opportunities. Any number of contemporary trends in pedagogy find alignment with CTC, including gamification in the classroom, Reacting to the Past, and high-impact practices of the sort promoted by AAC&U and George Kuh. Within career development, this theory asks students to see past "Because I have x major, I will get y career." For educators, we can support this by pushing students to see beyond simple answers and overly reductive thinking.

While most faculty may not see themselves as having a career advising role, especially outside of their field, we nonetheless shape the way our students conceptualize the world both within our walls and outside. One of the key gaps in career readiness cited by employers is in problem solving, including how recent graduates deal with adversity and ambiguity. Whether the gap exists or not, faculty would do well to bring the classroom closer to the real world in terms of approaches to learning and assessment. This might mean using strategies like interleaving instead of blocking, and giving space for struggling and failure, rather than high-stakes formative assessment.

Teaching with an eye towards CTC would include more individualization of our pedagogy, or, at the very least, more collaboration for our cohorts. Interdisciplinary group work, complex project-based learning, and problems that necessitate inference are all ways we can help our students become more career ready. This is a benefit to the students, faculty, and the campus community more broadly. It is with this emphasis in mind that the session will introduce participants to a host of modalities for preparing learners for the complexities of campus life and beyond. Special emphasis will be placed on dynamic, interactive, and realistic scenarios and activities. Participants will be allowed to experience one such activity from the perspective of a student and work to construct their own CTC-compatible activities.

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Building Learning Strategies Through Playful Problem-Solving: The ProblemUp! Card Game

Cary Staples, University of Tennessee; Vittorio Marone, University of Texas at San Antonio; Katherine Greenberg, University of Tennessee

This session will address issues in helping students develop skills in creative thinking and problem-solving. Participants will play ProblemUp!, a card game designed to help students

become familiar with micro-level, meta-strategic processes and skill in adapting strategies to meet the often-hidden needs that hinder success in learning.

Today, more than ever, students seem to be bombarded by standards-driven "expert strategies"—the one-right-way to solving learning problems—with little or no opportunity to learn to adapt such strategies based on personal, often hidden needs. Indeed, these "expert strategies" typically ignore each learner's strengths and weaknesses in the use of micro-level, meta-strategic processes at the heart of effective learning. Busy educators and their students are focused on the utilitarian goals of coursework—games may appear as distractions. Instead, games are a playful, safe, and powerful way to mess about in gaining an understanding of often hidden learning needs that hinder student success.

Our card game, ProblemUp! is designed to address these and other issues (Marone, Staples, & Greenberg, 2015, 2016). It is based on the theoretical framework of the Cognitive Enrichment Advantage (CEA) educational approach (Greenberg, 2005, 2014), which is grounded in the work of theorist and psychologist Reuven Feuerstein (1985). Specifically, the aim of the game, designed for 3 to 6 players (or groups of players), is to provide a playful, peer-supportive, and safe environment where students can:

1) Develop an awareness of meta-strategic processes at the heart of learning;
2) Mess about with peers in implementing such strategies to solve playful problems;
3) Exercise and expand their creative and lateral thinking skills, which can be valuable for solving problems and coping with unforeseen challenges in academic and real-life settings.

In the game, there are two main sets of cards: problem cards and strategy cards. A playful scenario is randomly generated by drawing five scenario cards (each within a specific category, such as "descriptor," "character," "problem," etc.) and by placing them sequentially on the table. Players read the scenario generated by the cards (e.g., "heavy handed squirrels can't find anything good in surprise surgeries") and decide which one of the strategy cards they have in their hands (e.g., "working memory," "making comparisons," etc.) would be the most appropriate to help the protagonists with their challenge/problem. Each player creates a narrative based on the scenario and describes how the characters can use the strategy to solve their problem. Players then assign points to the best story and best strategy. Next, players bridge to real-world, academic challenges by describing how they could adapt a strategy card to solve a real-life problem. Points are awarded to the best real-life strategy adaptation. Then, a new round starts with another scenario generated by drawing new scenario cards, and the game continues. Players familiarize themselves with CEA strategies and practice adapting strategies to meet hidden needs. The social component of the game incentivizes the exchange of stories and ideas, as players often recognize the situations and problems described by their peers as their own.

In our presentation we will discuss issues related to helping students overcome challenges to learning and present CEA strategies and their potential to help students in their academic and everyday lives. We will engage the audience in a playing session and encourage them to share their own insights.

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Building on Students' Ideas to Foster Conceptual Inductive Reasoning

Vladislav Kokushkin, Virginia Tech; Marci Tiraphatna, Virginia Tech

Proof by mathematical induction is an important proof technique. There is a growing body of research identifying particular challenges students face when this topic is formally introduced in a classroom. Oftentimes, students follow a procedure without conceptual understanding. In this session, we will discuss topics in different fields where procedural scaffolding is traditionally used to assist learning and how to reorganize procedural instructional approaches to foster students' conceptual understanding.

Proof by mathematical induction is a proof technique allowing one to prove statements involving integers. Despite the fact that the concept of inductive proof does not require strong mathematical background, it is traditionally considered conceptually difficult for undergraduate students (Avital & Libeskind, 1978; Baker, 1996; Ron & Dreyfus, 2004).

The intuition underlying a proof by induction may be well described using a ladder metaphor. Suppose we have a long ladder leading to a tall tower. The rungs of the ladder are situated such that from a given rung one can reach only the next rung. The question is, how can we reach the top of the tower using the ladder?

The answer is "it depends." It depends on whether the first rung is reachable or not. However, if it is reachable, then one is able to reach the second one, then the third one, and so on. Formally, in order to prove that the statement P(n) holds for any positive integer, one should check the validity of the two assumptions:

P(1) is true (the first rung is reachable). This is called a base case.

If P(k) is true for some positive integer k, then P(k+1) is also true (one can get to the (k+1)-st rung from the k-th rung). This step is traditionally called an inductive step.

Research literature identifies particular obstacles that students should overcome to master the proof by mathematical induction technique. Harel (2002) claimed that students perceive proof by induction in a procedural way because often times the formal induction method is presented to students before they require an "intellectual need" for it. He suggested an informal instructional approach to motivate the idea of proof by induction, called quasi-induction. One example we will use to illustrate the idea of quasi-induction is the following task:

Prove for positive integers n, a 2^n x 2^n grid of squares with exactly one square removed can be tiled using L-shaped tiles of three squares.

This example does not rely on algebraic manipulation or computation. Thus, it will be accessible to participants of different fields.

During this session, attendees will: 1. Engage in quasi-induction tasks; 2. Learn what inductive reasoning is; 3. Talk about instances of students' inductive reasoning; 4. Discuss topics in different fields where procedural scaffolding is traditionally used to assist learning and how to reorganize procedural instructional approaches to foster students' conceptual understanding.

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Challenging Disciplinary Hierarchy Through Inter/Trans-Disciplinary Teaching

Daisy Breneman, James Madison University; Peggy Plass, James Madison University

This session draws on experiences of faculty in an interdisciplinary department, Justice Studies, with inter/trans-disciplinary team teaching. We focus on the challenges and advantages to such approaches, which offer unique opportunities to expand understanding of concepts and material found in our individual disciplines, and challenge and generate new ideas. We discuss the necessity of examining disciplinary hierarchies and finding ways to move beyond a ranking of ways of knowing to a true disciplinary humility. The session invites participants to bring goals, strategies, and experiences to the discussion of opportunities for connection and renewal through interdisciplinary collaborative teaching.

Despite the current prominence of ideas related to transcending disciplinary boundaries (and the efficacy of this approach in promoting deeper and more nuanced learning), barriers to inter- and trans-disciplinary teaching remain. Because the world itself is not organized by discipline, neither should our attempts to understand it; interdisciplinarity is the natural result "of the open-systemic character within which practically all events occur" (Bhaskar, Danermark, and Price 2). Transdisciplinary teaching, especially across very different traditions, can be especially valuable when approaching tough topics, such as immigration, climate justice, racial justice, disability rights, or mass incarceration, because we need all the tools we can get for the challenging work ahead. Despite the benefits, barriers persist, some practical (teaching loads, budget constraints) and some more complex (student and faculty resistance, fear).

This practice sessions draws on the experience of faculty members in an interdisciplinary department, Justice Studies, with inter- and trans-disciplinary team teaching in exploring the challenges and advantages to such approaches, which offer unique opportunities for students and faculty to not only expand their understanding of concepts and material found in all of our individual disciplines, but challenge and generate new ideas. The session invites participants to bring goals, strategies, and experiences to the discussion.

The opportunity to structure and teach a class with someone with a very different disciplinary lens inevitably enlarges one's own vision and understanding of a topic of study; it both requires and nurtures disciplinary humility. The kinds of discussions which necessarily emerge from attempts to truly combine and meld different methodologies of study, approaches to knowledge, and bodies of scholarship can be revolutionary in terms of our thinking about our own disciplines, specific topics within them, and our approaches to teaching and learning generally. Through that process, we can become more thoughtful designers of learning experience and radically redesign our courses. Maryellen Weimer notes team teaching can yield a "renewed appreciation for how truly extraordinary teaching experiences can be, and how unlikely collaborations with new content can create synergistic learning experiences for teachers and students." Because instructors are pushed outside their own disciplinary comfort zones, we become co-learners with students, remembering how it feels to grapple with the unknown, and to explore and discover.

Students benefit from the opportunity to combine various approaches in the examination of a single topic, enriching their educational experience and helping them develop diverse knowledge and skill-sets, including intellectual dexterity, that they can apply to their futures. Such skills are especially important when approaching touch topics and wicked problems that require innovation, creativity, and vision. On an institutional level, another benefit is increased collaboration and connection across disciplinary and/or institutional boundaries. Among the many gifts and challenges of such an approach is the necessity of examining disciplinary hierarchies and finding ways for students and teachers to move beyond a ranking of different ways of knowing to a more true disciplinary humility. We welcome others to join us in exploring opportunities for connection and renewal through interdisciplinary collaborative teaching.

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Closing the Skills Gap: Aligning Higher Education and Employers’ Goals

Ginni Fair, Eastern Kentucky University

Shifting priorities in the workforce are misaligned with a traditional higher education model. “Soft” skills—critical thinking, creative problem solving, effective communication, and collaboration—are viewed as deficits among recent graduates, despite higher education’s oft-cited missions of instilling civic responsibility and valuing diverse perspectives. The gap between skills that workers need and skills they possess can be addressed by partnerships between employers and instructional counterparts. In this session, presenters will trace the responsibility of higher education in workforce preparation and discuss an example of how to partner with stakeholders to identify, support, and measure skills that employers value.

According to a survey conducted by the Lumina Foundation (2014), employers rate the following four job skills as most critical: critical thinking and problem solving, collaboration and teamwork, communication, and technical skills associated with the job. In addition, the National Association of Colleges and Employer’s annual Job Outlook surveys (NACE, 2016; NACE, 2017; National Association of Colleges and Employers, 2018) reflect some consistency among the top four critical skills. An ability to work on a team, problem solving skills, and communication skills always rank within the top four, with professionalism, leadership, and work ethic rounding out the top four across the last three years.

Similarly, a recent survey of goals for higher education (LaCount & Jackson, 2019) reflects the top higher education student outcomes: intellectual skills, which encompass critical thinking and problem solving; communication; culture; and technology. Goals between higher education and employers do not appear to be significantly contradictory, so why does the skills gap continue to plague both?

McDonough reminds stakeholders of the following relevant considerations as well: “First, there isn’t a single, universal skills gap, even though the topic is often discussed in that way. Instead, skill shortages are industry, company, and job function specific. Second, talent shortages don’t neatly fall into one bucket—employers typically have to address employees’ gaps in both hard and soft skills” (p. 49, 2017).

Collaboration between employers and educators is a promising option for addressing education and workplace gaps. Multiple models for collaboration, including internships, mentoring, shared teaching (e.g., employers providing some instruction at the institution), incorporating business education in industry fields to enhance employability, professional development jointly developed and provided by employers and institutions, specialized programs, and/or use of advisory boards provide varied options to explore.

In this session, presenters will guide attendees through a discussion related to potential collaboration efforts. Upon completion of the session, participants will be able to:

1) Define the skill gap and trace its evolution.
2) Explore potential models for collaboration between industry and higher education.
3) Discuss qualities and challenges of effective partnerships.
4) Evaluate an example of collaboration between a College of Education and employers.
5) Brainstorm collaborative possibilities in their own programs.

Attendees will review how faculty at a regional institution collaborated, over the course of an academic year, with an Advisory Board, consisting of employers and workers within the institution’s service region, to identify, classify, and refine dispositions that are valued in the workplace. A dispositions instrument was developed and is currently utilized throughout the teacher preparation program as a teaching and evaluation tool. A discussion about the process,

challenges, and successes will prompt attendees to consider collaborative possibilities in their home institutions and programs.

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Cognition and Emotions in your Classroom

Nicole Wilson, James Madison University; Elaine Kaye, James Madison University

What anxieties or negative emotions do you perceive in your students? What do you see as your role in decreasing negative emotions in the classroom? Can our pedagogy and design be improved through the latest understanding of our brains? The answer is yes, through various strategies based in neuro-education research. This session provides an overview of neuro-education research including how the brain processes information and the impact of emotion on learning. The facilitators will share ideas for incorporating strategies, based in neuro-education research, into your course design and classroom. These strategies will include mindfulness activities, retrieval practices, and metacognitive

What anxieties or negative emotions do you perceive in your students? What do you see as your role in decreasing negative emotions in the classroom? Can our pedagogy and design be improved through the latest understanding of our brains? Over the past decade, advances in technology and research have expanded our ability to understand how the brain functions and explore what this means for teaching and learning (Fischer, 2009; Tanner, 2017). With all of the resources available to us, it is critical that instructors and designers consider these questions and more, to better understand and leverage the neuroeducation research to boost cognition. In her book The Spark of Learning, Sarah Rose Cavanagh (2016) emphasizes that we "can give a nice boost to cognition by tapping into emotion using your classroom techniques because emotion is already present in all of experience, perhaps even particularly so in cognition" (p.24). In a landscape in which more students on our campuses are utilizing counseling services and experiencing high anxiety, exploring the role of emotions for learning is paramount (Jackson, 2019; Kane, Will, and U. C. Berkeley, 2019). In this session, we provide an overview of neuro-education research including how the brain processes information and the impact of emotion on learning. The facilitators will share ideas for incorporating strategies, based in neuro-education research, into your course design and classroom. These strategies will include mindfulness activities, retrieval practices, and metacognitive practices. The session will also be a space for participants to reflect on their own self-care strategies prior to exploring the pedagogical strategies that can be implemented in their classrooms to leverage emotions to improve cognition. In this session, participants will make progress towards:

- Interpreting the neuro-education research presented
- Evaluating teaching strategies grounded in neuro-ed research
- Developing a plan for integrating strategies presented into your teaching practice

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Creating Campus Escape Classrooms to Enhance Student Engagement

Denise Wilkinson, Virginia Wesleyan University; Kathy Stolley, Virginia Wesleyan University; Jeff Toussaint, Virginia Wesleyan University; Amber Gruszeczka, Virginia Wesleyan University

An Escape Room is a theme-based game, played live by a team, that incorporates clues, puzzles, challenges, and props to reach a goal in a limited amount of time. In this session, participants will learn about the benefits of incorporating modifications of an Escape Room into classrooms to enhance the student learning experience. Presenters will also share basics of creating Escape Room course assignments through the inclusion of an off-campus Escape Room field trip, participation in an "Escape Classroom", and the creation of Escape Room clues by students. Participants can expect to work through several "Escape Classroom" puzzles.

An Escape Room is a theme-based game, played live by a team, that incorporates clues, puzzles, challenges, and props to reach a goal in a limited amount of time. The concept of an Escape Room originated in 2007 in Japan, and quickly grew more popular in the rest of Asia, then Europe, Canada, and the USA (Nicholson, 2015). Today's Escape Rooms incorporate a theme, props and an immersive environment (Wiemker, 2015). Because they include experiential learning and require teamwork, communication, collaboration, creativity, critical thinking and other transferable skills, Escape Rooms are now being incorporated in education in various venues (Stone, 2016). For example, an "Escape Classroom" activity can be created as an alternative to a test or culminating final project. Also, students in an upper level content-based course can create an "Escape Classroom" for students in a lower-level course that contains similar content (Todd, 2018).

In this session, presenters will demonstrate several ways in which modifications of an Escape Room might be incorporated into a course to enhance the learning experience for students. First, the ins and outs of including student participation in an off-campus Escape Room will be shared. This experiential activity includes both a written and oral reflection as well as post-activity exercises that reinforce the connection of students' experience with the concepts learned in the course. Second, presenters will discuss the basics of creating an "Escape Classroom" as a test review to include finding and creating: an engaging theme, a plan of action, low-cost props, a set of clues, and strategies to incorporate test review questions into the "Escape" game. Third, session participants will learn effective ways to

reinforce course knowledge by integrating the course topics into assignments in which students actively create "Escape" room clues. Fourth, presenters will share ways to take advantage of areas on a campus in which props and scenery are already provided - such as a library study room - allowing an easy transformation into an Escape Room.

Finally, the presenters will share anonymous course evaluation feedback from students who participated in the "Escape Classroom" activity. Session participants will gain a clearer understanding of an "Escape Classroom" by working through several "Escape Classroom" puzzles.

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Designing Creatively: Classroom Activities for Project-Based Learning

Larry McCalla, University of Georgia; Tong Li, University of Georgia

What classroom activities can be used to support a group of students who are all working on individual projects across multiple domains? This is the question the presenters faced as they designed and led project-based courses to help undergraduate students learn to use technology more innovatively in the workplace. Methods from design thinking provided many of classroom activities, and lessons from the creativity literature helped to inform the way the activities were implemented and modeled by the instructors. This session will provide an overview of the course design and the classroom activities that engaged students and the instructors.

The course was project-based (Blumenfeld et al., 1991; Condliffe, 2017; Edutopia, 2001) and its design was informed by the theoretical perspectives of constructionism, situated cognition/situated learning, and self-directed learning - as described by Clinton and Rieber (2010) and especially with regard to the freedom in choosing any project topic, which was a primary characteristic of the first of three sequential courses in the studio experience. The assignments and in-class activities completed by students were based upon theories and practices borrowed from the creativity and design thinking literature. While students did most their project work outside of class, classroom activities were oriented toward helping students to share ideas and to provide each other with design feedback.

A unifying theme that might be applied to all class activity is community building. Eventually, the course community became characterized by a "culture of prototyping" (Rauth, Köppen, Jobst, & Meinel, 2010, p. 3), but building the community took time. In this session we will share the classroom activities that helped to build the supportive course community. These activities are (a) tool presentations, (b) idea presentations, and (c) prototype presentations that incorporated peer review and feedback. Attendees will be asked to participate by briefly sharing some favorite tools they use to accomplish their work as a way of modeling the way idea sharing activities were implemented in our course.

Creativity research has produced some basic findings about the nature of creativity, such as its generally accepted definition (Runco & Jaeger, 2012), divergent thinking (Silvia et al., 2008), convergent thinking (Cropley, 2006), problem finding (Getzels, 1975), and psychological safety (Amabile & Pillemer, 2012). The instructors simplified and shared findings from this and similar research as a way of demystifying creativity for students, and to help them understand that creativity is a skill that can be developed as any other. Attendees will be asked to complete a brief survey assessing their beliefs about their creativity and the results will then be displayed and briefly discussed.

Finally, the general course design will be described, and the presenters will provide their assessment of the effectiveness of the course, including ideas for improvement. At this point the attendees will be asked to engage in a

design conversation concerning any questions or ideas they may have about implementing a similar kind of learning environment.

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Developing a Collaborative Teaching Plan: Strategies and Insights

Anne Brown, Virginia Tech; Nikki Lewis, Virginia Tech

Collaborative or team teaching is becoming more common and an effective route for interdisciplinary teaching in higher education and beyond. There are a variety of approaches to collaborative teaching, with each having benefits and challenges for implementation. This session provides instructors with options for creating successful experiences in collaborative teaching in interdisciplinary academic environments.

Collaborative or team teaching is a productive way for faculty of various expertise to engage students from a variety of disciplines in transdisciplinary problem-solving. Defined as an agreement where two or more faculty work together to develop and deliver a course, collaborative teaching allows faculty from different disciplines to provide learning opportunities in non-traditional research and academic spaces (Davis, 1995). The instructors benefit from having support for the instruction of topics that are not traditionally within their discipline. Collaborative teaching serves as a useful means to engage in conversations with faculty outside of one's field to exchange ideas and gain new perspectives on current research (Meizlish & Anderson, 2018). They are also able to model good collaborative practices for their class and exchange best practices in pedagogy and engagement with students (Meizlish & Anderson, 2018). Students benefit from the presence of multiple experts guiding them through the course goals and content as they develop higher-level thinking skills (Meizlish & Anderson, 2018). Additionally, students are able to interact with more faculty in the classroom, which increases the potential for sustained, meaningful professional relationships to form. Finally, the modeling of collaborative practices can be translated into transferable professional skills for student development.

Although the benefits are many, the challenges in collaborative teaching are also recognized when teams of faculty teach a course. Issues that arise in collaborative teaching relationships can derive from personality conflicts, individual fears, resistance to new or alternative pedagogical practices, and poor time management practices (Buckley, 2019). These challenges can be observed by students, creating a learning environment that does not promote the intended goals of the course. Early strategizing, course management plans, and conflict resolution discussions before starting collaborative teaching can aid in navigating these challenges.

In this session, we will walk attendees through the process of developing a collaborative teaching plan using our experiences as a guide. Collaborative teaching has the potential to promote a change in culture and embrace the interdisciplinary and critical thinking skillset that is essential in undergraduate learning. Additionally, we will discuss the variety of approaches to collaborative teaching and potential solutions to challenges. An interactive small-group session will be used to brainstorm how to integrate collaborative teaching into your classroom. Participants will walk away from this session with an initial plan for collaborating on an update to a current course or implementation of a new course. Attendees currently collaborating on a course or interested in the collaborative teaching process are encouraged to attend this session.

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Developing Resources to Support Teaching and Learning Excellence

Asli Hassan; Khalifa University; A.L. (Tom) Hammett, Virginia Tech

Khalifa University is a newly formed university as a result of the merger of three existing institutions of higher learning in Abu Dhabi. The Center for Teaching and Learning (CTL) which just served one of these institutions, The Petroleum Institute, will now serve the new, much larger university. CTL has been given the unique opportunity to coordinate and support the development of a core culture across the whole university that addresses the basic strategies teaching and learning excellence. Plans include: incorporating excellence in teaching; understanding and supporting learning in the local context; aligning teaching and learning goals with the university's strategic goals; and incorporating the results of a recent faculty needs assessment. Future plans for early 2020 include developing and implementing a university-wide undergraduate research program, developing a program to instill in faculty ways to improve teaching skills, and working with students to develop an undergraduate experiential learning component in the curriculum. Our session will include discussion of progress made so far building and implementing these strategies, the transformation process as a whole, and gathering input for continuing this process from the session participants.

Digital Ways to Engage Students in Blended and Online Learning

Hong Wang, Northern Virginia Community College; Dawn Hathaway, George Mason University

Student engagement is increasingly recognized as key to student success in higher education. Focused on cognitive engagement in blended and online learning, this presentation will share digital ways from real-world teaching. It will start with an interactive activity with the audience, followed by an overview of student engagement and blended learning along with demonstration of digital examples from blended and online courses, and end with discussing questions from the audience. Anyone who is interested in blended and online learning will take away with practical ideas and free resources that can be used to engage students in learning.

"Student engagement is a hot topic in higher education, and it is increasingly recognized as key to student success in higher education (Pascarella et al., 2010). Thomas (2012) found that student engagement is very prominent as it closely connects with student success. Zepke (2014) remarked, "It has become increasingly clear that 'success' means helping all students to become more engaged and more effective learners in higher education, thus improving their academic outcomes and their progression opportunities after graduation (or when they exit higher education)."

According to the Higher Education Academy (2010) in the UK, student engagement has three key attributes: individual student engagement in learning, student engagement with structure and process, and student engagement with identity. Fredricks, Blemenfeld, and Paris (2004) defined three types of engagement: behavioral engagement, emotional engagement, and cognitive engagement. Behavioral engagement relates to participation in academic and social activities that lead to positive academic outcomes. Emotional engagement is about relationships with teachers, classmates and administrators that encourage a love of learning. Cognitive engagement refers to investment in deep learning of concepts and skills. The engagement in this presentation is focused on individual student engagement in learning and cognitive engagement.

Allen, Seaman, Poulin, and Straut (2016) categorized blended learning as 30-79% of learning online while the rest of learning occurs in the classroom and online learning as at least 80% of learning content delivered online without face-to-face meetings. Graham (2006) stated that blended learning does not only blend online and face-to-face teaching but also blends instructional modalities (or delivery media) and blend instructional methods. Garrison and Kanuka (2004) defined blended learning as "the thoughtful integration of classroom face-to-face learning experiences with online learning experiences" (p. 96). Picciano (2009) defined a blended course as "a course that integrates online with traditional face-to-face class activities in a planned, pedagogically valuable manner" (p. 97).

This practice session will provide participants, both faculty and curriculum developers, with a basic overview of student engagement and blended learning. It will also share examples from the presenters' real-world teaching practice. After this session, participants will be able to

- demonstrate an understanding of cognitive engagement and blended learning
- develop learning activities with digital tools to engage students in blended and online learning
- locate free technology resources to engage students in blended and online learning

The presenters will begin the session with an interactive activity with the audience, followed by a brief overview of student engagement and blended learning. They will showcase real-world examples from their own blended and online courses and discuss benefits and challenges associated with the examples. They will also share free technology resources used from their own teaching. The presenters will end the session by engaging participants in a conversation for questions, discussions, and peer sharing.

Both presenters have taught undergraduate and graduate courses in instructional technology, face-to face, online and blended. They have facilitated professional development programs for higher education faculty and K-12 teachers, using a variety of strategies related to digital tools.

Allen, E., Seaman, J., Poulin, R., & Straut, T. T. (2016). Online report card: Tracking online education in the United States. Babson Survey Research Group and Quahog Research Group, LLC.

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Zepke, N. (2014). Student engagement research in higher education: questioning an academic orthodoxy. Teaching in Higher Education, 19(6), 697-708.

Educators as Mentors for Optimizing Learner Self-Efficacy and Self-Growth

Chaya R. Jain, Virginia State University

This qualitative research focuses mentoring, a critical aspect of self-growth and that of the others. A discerning educator's transformation as a mentor involves examination of one's personal values that begins with two basic Process Education (PE) principles: (1) every learner can learn to learn better regardless of the current level of achievement; one's potential is not limited by current ability, and (2) Educators have an ethical responsibility to "raise the bar" by being a mentor. Discussion of this four-pronged professional-development tool is intended to assist any individual interested in understanding the intricacies of mentor-mentee relationship--a potent synergistic affiliation.

Literature Review: The generic definition of a mentor describes an experienced advisor providing guidance to a less experienced individual. Conversely, definitions of mentoring are predictably framed by petition- specific fields that range anywhere from business and sports to politics, entertainment industry, arts, and similar others. Among the most noticeable ones, academic mentoring remains a long-standing tradition that can be traced back to Homer's Odyssey (Webster, 2001). Galbraith (2013) defines academic advising as "a short-term process where the focus is on giving information and guidance to the learner, mentoring is a more intricate, long-term, one-on-one relationship that goes well beyond simply providing information" (pg. 16). Distinguishing an academic advisor from a mentor, McLaughlin (2010) notes that while academic advising may denote an assigned activity; expectation of mentoring signifies going above and beyond by serving as a role model. Mentoring intimates what Maslow (1993) refers as "transcendence" -- one of the highest dimensions of human inspiration. It therefore can be practiced in any field or discipline. Expanding the extent, theory-based typology (French & Raven, 1959) suggests individuals exert influence over others through five different sources of power: expert, referent, legitimate, reward, and coercive, of which referent underlies trust between a mentor and mentee. Leise (2009), characterizing 10 key principles of mentoring, expounds further, "mentoring involves a trusting but clearly bounded relationship entered into by a mentor and a mentee for the purpose of the personal or career change and growth of the mentee" (pg. 477). The Process Education theorists (Beyerlein, Schlesinger & Apple, 2007; Leise, 2007) offer an in-depth, holistic exploration of its multiple facets -- the focus of this discussion.

Objectives: a PowerPoint presentation with three key objectives:

1) Discuss the four distinct perspectives of mentoring/mentorship;
2) Explore how the ten principles of effective mentoring are supported by the corresponding mentoring skill-set;
3) Demonstrate the mentoring contexts and caveats through a hands-on exercise.

Methodology: This qualitative research explores the question whether mentoring can be cultivated to complement and transform an educator's role in optimizing mentee efficacy? The research approach that can be applied in any mentor-mentee relationship whether in a peer relationship or between an educator and learners, involves the analysis of the Process Education theory's four key constructs: mentoring principles, characteristics, methodology and skills.

Discussion: Mentorship is a challenging strategy that facilitates learning, decision-making, and growth in real-time contexts. Among the Process Education's ten mentoring principles (Leise, 2007), trust and bounded relationship serve as the basis and can have far-reaching positive impacts in developing a mentee's ability to actualize potential. Critical characteristics include attitude and values along with communication, information processing, problem solving, and

servant leadership as important skills. The SII (strengths, improvements and insights) assessment serves a critical aspect of the overall methodology in mentoring self-growth and the growth in others.

Conclusion: Mentoring can be practiced in any sphere of life, at any stage, by anyone. Different from academic advising, it involves understanding of the basic principles, issues, processes, skills, and contexts to increase learner efficacy and inclination for lifelong self-growth.

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Extending Belonging in the Classroom

Hannah Shinault, Virginia Tech; Claire Boor, Virginia Tech; Laura Purcell, Virginia Tech; Zack Sowder, Virginia Tech; Brandi Quesenberry, Virginia Tech

Find your people! Find your niche! Claim your role! Every university encourages students to find where they fit in, where they belong. The process of finding people and places to create a support system and blaze a trail toward the future can be so overwhelming for college students that they feel paralyzed. This panel session will share ways to implement Lisa Nunn's 33 Simple Strategies for Faculty, in both assignments and in-class activities, and allow participants to generate and share ideas to apply in their own courses.

Nunn (2019) points out that belonging cannot be taken; it must be extended. Helping students feel they belong in the classroom can aid retention rates (Freeman, Anderman, & Jensen, 2007). Students who feel they belong in a classroom space will also be more accountable for their learning and share a sense of responsibility in maintaining a supportive classroom culture (Freeman et al, 2007). Instructors can help foster this sense of belonging in many ways, and effective strategies do not have to be time consuming or complex (Nunn, 2019). By demystifying the aspects of higher education that are new and unusual for many students--office hours, time management, overcoming perceived failure--instructors lay a groundwork that will help their students learn more successfully (Nunn, 2019). This practice session provides information on helping students find belonging, as well as strategies and examples of how the panel has used these in their classes, which range from community college night courses to upper level courses. Furthermore, strategies will be discussed from all areas of the course calendar, from syllabus week, to the midterms, to the last class session, allowing audience members to see strategies that work throughout the semester. Finally, to create a sense of belonging in the practice session, audience members will be asked to participate not only in sharing ideas, but also some of the practices and activities suggested to extend belonging in the classroom.

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Nunn, L. M. (2019). Engaging first-year students. Keynote presented at the Innovative Teaching and Learning Conference. Knoxville, TN.

Friend or Foe: Defining Relationships with Students

Scott Turner, University of Wisconsin - Stout; Matthew Turner, Radford University; Michael Turner, Radford University

One of the challenges of teaching students in the current era is balancing the need for positive relationships against the dangers of relationships that cross professional lines or are perceived to do so. In the age of instantaneous communication and social media, determining the tone, frequency, and type of interactions with students are often difficult to navigate. In this session, participants will learn about the research that has been done on faculty interactions with students, the advantages and disadvantages of various styles of interaction and how different situations may call for different approaches.

Who am I? To my students, I am their professor, of course. But what else am I to them? Am I their judge, jury and executioner? Just the executioner? Maybe I am their professional colleague. Role model. Mentor. Friend. Something more intimate? Whatever I am, I am not just their teacher and that relationship affects how my students learn.

Determining what the teacher-student relationship should be is a complex matter. On one hand, a good relationship is important to model professional behavior and encourage engagement (and, therefore, improve retention and student success) (Estepp & Roberts, 2013; Hunzicker, n.d.; Smith, 2015). This may be more important as the material become more difficult (Micari & Pazos, 2012). A friendly, welcoming environment would seem like the correct approach.

Of course, it is never that easy. There are several issues that need to be carefully considered. The relationship between the teacher and the student may change (or seem to change) the objectivity of the teacher, negatively affect the class climate, create conflicts of interest or create legal issues (Flaherty, 2018; McArthur, 2017). While these problems seem like an exaggeration, it is important to remember that what is friendly behavior to one may be creepy or harassing to another. There is also the burden of the relationship to consider. Students can act as stressors by making demands for time, help or just moral support (Martini, Guidetti, Viotti, Loera, & Converso, 2019).

The presenters propose to provide a session that offers a planned and thoughtful approach to student interactions, that takes into account the instructor's personality and strengths and explores practical considerations such as current cultural trends, ethical and legal requirements, and how to manage perceptions.

The initial portion of the presentation will discuss the value of meaningful relationships with students and how to establish expectations about behaviors in and out of the classroom. Various types of approaches to those interactions will be discussed including approaches such as, authoritarian, professional, informal, friendly, buddy-buddy, colleague, and what is inappropriate.

Secondly, there will be a brief discussion of participants' own observations and experiences including positive and negative aspects of various relational styles. Discussion will include how this interaction can change based on the composition, level, or format of the class.

The next portion of the session looks at the research that has been done to provide some guidelines and discussion of concrete plans for implementing policies and practices regarding student interactions in the instructor's own work and life with the goal of creating plans that challenge the students while maintaining good academic outcomes.

The presentation will end with a brainstorming session and a final question and answer opportunity.

Upon completing this session, participants will be able to:

- Carefully consider their interaction with students based on the available research.
- Make plans to avoid potential pitfalls as well as take advantage of meaningful and appropriate interactions with students.
- Develop well-thought out plans for creating the appropriate atmosphere for the individual teacher's style both in and out of the classroom.

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Martini, M., Guidetti, G., Viotti, S., Loera, B., & Converso, D. (2019). Sometimes It Drains, Sometimes It Sustains: The Dual Role of the Relationship with Students for University Professors. BioMed Research International, 1-8.
McArthur, N. (2017). Relationships between university professors and students: Should they be banned? Ethics & Education, 12(2), 129-140.
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Fulfilling the Land Grant Mission for Inclusion of Indigenous Peoples

Mae Hey, Virginia Tech

This session will highlight a land grant university's recent approach for decolonizing accessibility and cultivating inclusivity for Native Peoples. The story will be animated, through the use of photographs and narrative, by one of the Virginia Tech Tribal Initiative's central thought-partners, facilitators, and representatives.

Background: Land Grant Institutions were created to serve all the 'citizens' of a state equitably. That sounds inclusive but, in fact, has not been. That is, the definition of who has been considered a citizen has changed over time to exclude many, including Indigenous Peoples. In Virginia, Native People were prohibited from public education until 1963. Additionally, the schooling available did not serve the needs and was often harmful to Native Peoples.

Thankfully, the time for change has come. Virginia Tech is undergoing self-reflection to improve policy, process, and infrastructure to provide a more accessible and welcoming environment for all students, including American Indians. This session will highlight, through sharing photographs and narrative, how Virginia Tech has begun transformation to remove barriers to the full and equitable inclusion of Native Peoples. This effort has happened through collaboration with campus partners, tribal leaders, and students and has generated many positive outcomes to help Virginia Tech fulfill its Land Grant promise to Virginia's First Peoples.

Format: The session will be in narrative format. The presenter will share photographs to tell the story of the dimensional approach being used to create a welcoming space for Indigenous teaching, learning, research, and collaboration. The last 15 minutes will be allotted for the attendees to ask the facilitator specific questions about challenges their institutions face and what approaches they might use.

Learning outcome: attendees should leave the session with ideas about how to begin transforming their institutions.

Relevance to audience: Native American access and inclusion in higher education is rarely discussed at conferences. It is a newly emerging area of interest and activism in meeting the needs of a society becoming increasingly aware of issues of equity. It is our responsibility to provide what we know through experience about successful strategies for transformational institutional change of this nature.

Graphic Organizers in Higher Education

Jessica Ward, Iowa State University

Graphic organizers (GOs) are visual and spatial displays, such as tables or charts, which facilitate learning by making conceptual relationships between content more apparent. A particular benefit of GOs in the professional health sciences curriculum is decreasing students' cognitive load as they assimilate large volumes of content material. This practice session will review existing literature regarding GOs, including the presenter's research with GOs in the veterinary medical curriculum, and will outline how to incorporate GOs into higher education classrooms of multiple disciplines.

Graphic organizers [GOs] are visual and spatial displays, such as tables or charts, that facilitate learning by making conceptual relationships between content more apparent and providing a framework to relate new information to existing knowledge. Previous research has shown that use of GOs improves student reading comprehension, short-term recall, long-term retention, and transfer of previously learned material to new contexts. The benefits of GOs are particularly well-documented in K-12 students with learning disabilities, presumably because GOs decrease students' cognitive load during the learning process. A few studies have also documented benefits of GOs in undergraduate science courses.

The presenter's research team has recently begun testing efficacy of GOs in the veterinary medical curriculum, specifically in an elective clinical cardiology course. Veterinary medical students are typically considered high-achieving academically, but face an overwhelming amount of content material; we therefore hypothesized that GOs would be particularly useful for this student population. Through a series of quasi-controlled experiments, we have compared GOs to traditional outline-based study guides; instructor-prepared versus student-generated GOs; and chart-based GOs to flash cards. Results have demonstrated no differences in short-term learning outcomes associated with these interventions, but have shown increased study efficiency and higher student satisfaction with tools that decrease cognitive load and facilitate the studying process.

This workshop will review existing literature regarding GOs, including the presenter's experimental methodology and results. The presenter will share general tips and "best practices" for creation of GOs for students, and will discuss application of GOs across disciplines. Benefits and drawbacks associated with different variations of GOs will be discussed, including source of material (student-generated versus instructor-prepared) and timing of presentation (pre-organizers vs. post-organizers). Participants will be encouraged to bring content from their courses to apply these skills and brainstorm ways to incorporate GOs into their courses.

Ward JL, Marcketti SB. The effect of graphic organizers on learning outcomes, study efficiency, and student satisfaction in an elective veterinary cardiology course. J Vet Med Educ 2019 [Epub ahead of print; DOI 10.3138/jvme.0817-116r1].

Interfaith Experiences to Promote Diversity and Pluralism is College Campuses

Najla Mouchrek, Virginia Tech; Ian Anderson, Virginia Tech; Byron Hughes, Virginia Tech

Preparing college students to meaningfully interact across lines of difference and find common ground is key for a democratic society. As Higher Education embraces multiculturalism and an increasingly diverse population, conversations about religious, spiritual, and secular diversity need to be promoted, expanding diversity efforts towards pluralism. Interfaith engagement is a process in which people from different existential worldviews and belief systems come together in constructive dialogue, build relationships, engage in common action. In this session, participants will learn about Virginia Tech's interfaith initiative and engage in a participatory design process about challenges and opportunities for interfaith initiatives in universities.

As Higher Education embraces multiculturalism and religious diversity increases on campuses, a proactive engagement of interfaith issues has become a necessity (Patel et al, 2015). Preparing college students to meaningfully interact across lines of difference and find common ground is key for a democratic society (Patel,2007; Correia-Harker et al, 2019).

We highlight the relevance of investing in dialogue and cooperation around diverse ways to find meaning and search for purpose in life (Small, 2014). Religious, spiritual, and secular diversity need to be included in conversations about diversity and inclusion in college campuses, as they configure an essential dimension of identity and intersectionality. Moreover, we point to the centrality to expand diversity efforts towards pluralism, which is the proactive engagement of diversity toward positive ends (Eck, 1993).

The university context is promising for learning how to engage and contribute to a diverse world (Rockenbach et al, 2015). Being able to understand the impact of cultural, racial, and especially religious diversity in contemporary society is a key component of a comprehensive higher education. It is in line with standards for liberal education in the 21st century proposed by AACU (2019), which highlights goals such as: empowering and preparing students to deal with complexity, diversity, and change in the wider world; and helping them develop a sense of social responsibility.

Interfaith engagement is a process in which people from different existential worldviews and belief systems come together in a constructive dialogue, build relationships, and engage in common action around issues of shared concern (adapted from Patel & Meyer, 2011). Interfaith programs in higher education seek to develop initiatives to promote appropriate support, resources, and environments for pluralistic dialogue and interfaith cooperation.

Virginia Tech is launching its interfaith initiative, with a focus on the following strategic outcomes (VT Interfaith Advisory Council, 2019, p. 1):

- As students interact across faith identities they will increase and apply their capacity for complex thinking and critical reflection.
- Students will grow through intrapersonal and interpersonal opportunities that ultimately deepen their connections to each other and the values that undergird their faith identity.
- Students will develop the agency to become the creators of their own interfaith experiences as they facilitate leadership and mentorship with others.
- Students will embrace their capacity to create and sustain environments where dissent and difference between faith traditions, values, perspectives, and ideas are appreciated.
- As students make meaning of the world through interfaith engagement, they will courageously challenge narratives and systems that limit beliefs and expressions within our community and beyond.

The session will engage participants in a discussion about the challenges and opportunities in developing an interfaith initiative on college campuses. Participants will be guided through a participatory design process including individual reflection, group ideation session, and a final integrative discussion.

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InterviewStream as a Tool for Pre-Professional Health Science Majors

Lesley Lemons, James Madison University; Terri Prodoehl, James Madison University

Participants will participate in a variety of activities designed to familiarize them with the inner-workings of our Introduction to Health Sciences Course, our collaborative relationship with Career and Academic Planning, the InterviewStream program, and will be offered the opportunity to try out the program.

Upon completion of this session, participants will be able to: 1) Summarize key features of the InterviewStream program; 2) outline the use of online interview program in a pre-professional course; 3) examine an assignment for usable elements in their own courses; and 4) plan for an assignment that uses elements of InterviewStream in their own courses.

Introduction to Health Sciences is an introductory course for the health science major at James Madison University. This course orients students to foundational expectations and requirements for successful completion of the health science major. Students are introduced to a wide array of health careers, concepts of professionalism, how to prepare for graduate school applications, and a variety of basic skills required for academic success in health science courses. Included in the course is an assignment using InterviewStream, designed to prepare for graduate school applications and professionalism in securing a job in their field.

The InterviewStream assignment places students in an interview situation where they answer questions selected by an instructor. The interview is recorded via their computer camera and is available for self-review or review by others. In this assignment, students are required to review their own interview in addition to a recorded interview of a peer from class. Checklists are used for assessing themselves and their peer. Students are then required to write a reflection paper on what they have learned from the experience. Many students report high levels of confidence in their readiness for an interview. However, through the interview process and review of their work, they quickly discover that it was harder than they thought and they were not well prepared.

A survey for the Association of American Colleges and Universities investigated student and employer perceptions of student readiness for the workplace.[1,2,3] Results indicate a disconnect in perceptions of readiness, students feel they are ready and employers don't agree. Around 70% of surveyed students feel they are ready for the real world, while less than one third of responding employers feel college students are ready for the workplace. It is generally accepted that the practice of skills will do more toward learning than hearing or reading about the skills. Self and peer evaluation are also considered valuable tools for improving learning outcomes.[4,5,6] The InterviewStream assignment is a low-stakes assignment that employs self and peer assessment with the experience of an interview simulation. The assignment meets students at their current interview skill level and challenges them to improve their skills.

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3. Bauer-Wolf, J. (2018). Study: students believe they are prepared for the workplace; employers disagree. Inside Higher Ed. https://www.insidehighered.com/print/news/2018/02/23/study-students-believe-they-are-prepared-workplace-employers-disagree
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Inviting Students to the Table: Negotiating Power in Course Design

Hannah Scherer, Virginia Tech

In this practice session, participants will explore the role of power in curriculum and course design through considering approaches to involving students in the planning process. Aligned with adult education theories, enacting democratic practice can have a positive impact on student learning and engagement. Building on examples from the literature, the presenter's practice, and participant experience we will collaboratively identify strategies for engaging students in the decision-making process, reveal real-world tensions in this work, and develop personal action plans for our own praxis.

Cervero and Wilson (2006) emphasize the role of power in the process of planning educational programs for adult learners; they theorize that the four key dimensions of the "planning table" at play are these: power relations, interests, ethical commitments, and negotiation. This is particularly important in higher education, where the teacher-student relationship is structured such that the teacher holds the power to assign grades and typically the teacher makes planning decisions prior to the course even starting. Putting theory into practice, each dimension can be considered as teachers plan for activities and assignments, course policies, course content, and student evaluation (Weimer, 2013). Educators have experimented with efforts to return power to students by collaborating with them in a range of higher education projects, such as the design of a cohort-based graduate degree program (Colin & Heaney, 2001), pre-service teacher education curriculum development (Enright et al., 2017) and redesign of a first-year undergraduate science course (Bengtson et al., 2017).

In my own teaching, I have made movements towards collaborating with my students through involving them in the design of a new graduate course. I set learning goals for the first part of the course as I had some expertise to share, but intentionally left the remainder of the course open and we democratically negotiated the topics and expectations for the final project. Student perspectives on participating in this process were gained through an open-ended survey conducted after the conclusion of the semester. Questions were based on the theoretical framework of Cervero and Wilson (2006) in order to gain insight into the role of the student and teacher in the planning process. Qualitative analysis of student responses was conducted based on the constant comparative method (Lincoln and Guba, 1985) in order to reveal common themes. Results indicate that students felt they had autonomy in the learning process, appreciated the variety of student perspectives that contributed to the course direction, and experienced being involved in decision making. Some students suggested that an "advanced organizer or heuristic to help understand the journey we were undertaking" would be helpful, highlighting a key tension that arose in this effort. Additionally, one student noted that "the instructor was a facilitator but also felt a part of the learning process;" this echoes my own reflections on how I felt during the course. Putting more control in the hands of the students allowed me to see the topic from a fresh perspective and kept me engaged in a new way.

In this practice session, participants will be invited to explore the dimensions of the planning table in their own course or curriculum planning process through guided reflection. Building on examples from the literature, the presenter's practice, and participant experience we will collaboratively identify strategies for engaging students in the decision-making process, reveal real-world tensions in this work, and develop personal action plans for our own praxis.

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Cervero, R. M., & Wilson, A. L. (2006). Working the planning table: negotiating democratically for adult, continuing, and workplace education. San Francisco: Jossey-Bass.

Colin, S. A. J., III, & Heaney, T. W. (2001). Negotiating the democratic classroom. New Directions for Adult & Continuing Education, 2001(91), 29-37.
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Is Twitter Still Cool? Fresh Approaches to Tweeting for Engagement

Adam Barger, College of William and Mary

Twitter can support student engagement with content and peers when intentionally integrated into course objectives. This session reports on a tiered approach to structured discussion and exposure to learning networks via Twitter in a multidisciplinary course with undergraduate and graduate students. Attendees will explore digital pedagogy lenses for social media use and participate in a planning exercise for implementing Twitter in their own course design.

The evolving social media landscape invites educators at all levels to consider the relevancy and rigor associated with integrating social media platforms as potential learning tools in their courses. Twitter has a long history of use as a web-based communication, social media, and learning tool (Hortigüela-Alcalá¡ et al., 2019). However, uneven reports of success in extant literature suggests a lack of both instructional design strategies and attention to context when using Twitter in higher education classrooms (Ricoy & Feliz, 2016; Carpenter & Morrison, 2018). This session explores digital pedagogy lenses for integrating Twitter as a discussion and networked learning tool to promote course design that aligns pedagogical intent and student learning experiences.

Bates (2015) posited an interaction of three media technology characteristics that illustrate their differences and potential uses: broadcast, communicative, and media richness. Viewed in this light, Twitter can be described as a tool that allows for communication that is from one to many (broadcast), many to many (communicative), and media rich (leverages text, imagery, etc.). Integration of Twitter as a teaching and learning tool is more likely to be successful when course objectives are supported by these types of communication. Accordingly, learning activities within the course should target each aspect of communication in order to take full advantage of the affordances of Twitter.

A recent implementation of this approach in a multidisciplinary digital learning course with undergraduate and graduate students provides insight into how students interacted with course content and peer groups using Twitter. Students were assigned weekly interactions on Twitter as a key aspect of class participation. Using a tiered approach based on Bates' (2015) model, students broadcast ideas, communicated with others via tagging, and finally integrated rich media using images, video, and/or links to resources. These activities closely aligned with course objectives and provided a clear and consistent path to engagement while preserving student agency to craft their own messages and build their own learning networks.

This practice session presents this approach to Twitter integration and shares instructor and student feedback on its successes and failures. Additionally, sample Tweets from each communication type will illustrate the approach and how it integrated with course objectives. Attendees will explore digital pedagogy lenses for social media use and participate in a planning exercise for implementing Twitter in their own course design. Discussion and/or live polling for interaction among attendees will encourage participation through discussion and reflection.

Bates, A. T. (2018). Teaching in a digital age: Guidelines for designing teaching and learning.
Carpenter, J. P., & Morrison, S. A. (2018). Enhancing Teacher Education…with Twitter? Phi Delta Kappan, 100(1), 25-28.
Hortigüela-Alcalá, D., Sánchez-Santamaría, J., Pérez-Pueyo, Ã., & Abella-García, V. (2019). Social networks to promote motivation and learning in higher education from the students' perspective. Innovations in Education and Teaching International, 56(4), 412-422. https://doi.org/10.1080/14703297.2019.1579665

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Making Instruction Interesting and Useful for Students

Brett Jones, Virginia Tech

Researchers have documented that students are more motivated and engaged in their coursework when they are interested in the topics and find them useful to their lives. The purpose of this session is to provide some examples of ways that instructors can get students interested in, and understand the usefulness of, their class activities and assignments. The presenter will provide examples and ask audience members to share their own ideas with one another.

Researchers have found that it is possible for instructors to interest students in their course content, activities, and coursework (Renninger, Hidi, & Krapp, 2014). However, doing do is not always easy, and in some cases, takes some very intentional planning by the instructor (Jones, 2018). One of the goals of this session is to help instructors think about how they can make changes in their classes, activities, and assignments that will lead to increased student interest.

Studies have also shown that students are more motivated and engaged in their course when they understand how the content and coursework are related to their lives (Hulleman, Kosovich, Barron, & Daniel, 2017). In other words, how is what they are learning useful to them, either now or in the future? Another goal of this session is to provide some examples of how instructors can make their instruction more useful to students, and thereby, increasing their motivation and engagement.

This practical workshop will help instructors connect motivation research to practical teaching strategies. By the end of the session, participants will be able to better provide examples of things they currently do, or could improve upon, to get students more interested in, and understand the usefulness of, their class activities and assignments.

The last part of the session will answer the question: How can I assess whether my instruction is perceived as interesting and useful to students? Audience members will be given tools that they can use to assess students' interest and perceptions of usefulness.

Hulleman, C. S., Kosovich, J. J., Barron, K. E., & Daniel, D. B. (2017). Making connections: Replicating and extending the utility value intervention in the classroom. Journal of Educational Psychology, 109(3), 387-404. doi:10.1037/edu0000146

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More Technology Secrets from Undergraduates

Gretchen Thomas, University of Georgia; Dawn Rauscher, Flathead Valley Community College

Selecting technology tools to engage students and support teaching and learning in our classrooms can be challenging. Fortunately, our students have done much of the work for us. Undergraduate (and graduate) students are self-selecting tools that support communication, collaboration, and presentation. In this session, participants will learn more about tools students are choosing on their own, explore some tools that are new to undergraduates to keep us one step ahead and share additional tools and strategies that support teaching and learning in our classrooms.

An earlier version of this work was presented at a previous CHEP conference - the ideas presented were well-received and the presenters will be sharing new tools, strategies, and recommendations based on continued work with undergraduates in multiple settings.

There are many tools available to faculty and students to support learning that matters but it can be difficult to identify the most appropriate tools and to determine ways to use them with learners (NMC Horizon Report, 2015). Undergraduates have figured out how to use technology to support their own learning through tools that allow them to communicate, collaborate, and share their work. As higher education faculty, we can learn what works best for our students directly from them and encourage more opportunities to use technology to support communication, collaboration, and sharing. When we use the technology tools students are already familiar with, this provides students with the chance to have a voice in their learning experiences while giving them the option to explore the tools in depth as lifelong learners.

During this session, presenters will share vignettes of undergraduates discussing self-selected technology that helps them to be successful in various learning environments. Presenters will then share examples of how undergraduates use tools such as Google Docs/Sheets/Forms, GroupMe, Remind, various online study aids, and similar technologies to support their learning goals. In addition, tools and strategies that undergraduates might not yet know about will be explored. Participants will also be encouraged to share additional tools and strategies that have been beneficial for the students with which they work.

For the bulk of the session, facilitators will use the think, pair, share model to encourage independent and group brainstorming among participants to identify tools and strategies. Allowing opportunities for individual brainstorming combined with small and large group sharing will allow participants to hear ideas from a wide range of content areas and experiences. Session ideas will be collected in real-time and shared with participants. Attendees will leave this session with a technology toolbox full of tools that are a good fit with the learning needs of their undergraduate (and graduate) students.

The NMC Horizon Report 2015 Higher Education Edition. (2015, February 9). Retrieved September 14, 2015.

Opportunities to Increase Experiential Learning and Engagement through Extension

Karen Vines, Virginia Cooperative Extension

This session focuses on two new Virginia Cooperative Extension (VCE) internship opportunities and a new approach to the traditional (VCE) internship. The objective of these changes is to enhance experiential learning for students while increasing engagement across the university and between the university and the community. New opportunities include a project-based internship, and an interdisciplinary, team internship. A new approach to the traditional internship shifts the awarding of credits to provide in-depth preparation and reflection to increase intentionality and the quality of the experience for both the student and the internship host.

Virginia Cooperative Extension (VCE) is exploring how to expand internship opportunities provided to undergraduate students. These opportunities build on the existing, traditional VCE internship to provide students with different types of experiences that will better prepare them for a wide range of careers and experiences. New opportunities include a project-based internship and a community based, interdisciplinary internship. This presentation will encourage discussion and promote the program to potential collaborators.

The project-based internship has students participating in short-term, well-defined projects closely related to their academic program. The project-based opportunity will also be available for students to participate in earlier in their academic career. This internship also provides flexibility for including the experience during any semester rather than in the summer when traditional internships most frequently occur. By design, the internship will connect campus and field-based faculty with the student, increasing the student's network through interaction with these faculty. By design, the project-based internship also strengthens connections between campus and field-based faculty, building

relationships that can be used to promote greater engagement between the university and communities across the Commonwealth. Proposals for this approach were accepted from Extension faculty for the first time in Spring 2019. The revised proposal process will be presented in this session. Although there were no project-based internships resulting from the initial call, one project was expanded into a grant application and a second is being further developed for future submission. Team-based internships are the focus of a pending USDA grant proposal which would permit quicker adoption for a broader group of projects.

The interdisciplinary opportunity puts groups from multiple majors and colleges into a team to study a complex issue in greater detail, drawing on expertise from throughout the university. Student teams use this knowledge as they work in the community, exploring what is being done and what the University can do to further support the community in addressing the issue. This opportunity will not only build on classroom experiences, but also strengthens engagement across the university and between the university and community. This project is also the focus of another pending USDA grant proposal.

While the traditional internship is not new, in the Agricultural, Leadership, and Community Education Department of the College of Agriculture and Life Sciences, we are using a new approach in the way these and other community-based internships are being administered. Students spend the spring semester prior to their internship in preparation. The fall semester is spent sharing reflection and evaluating the experience. In addition to providing a more robust experiential learning experience for the student, this approach is also increasing student's comfort with moving into the internship role and setting them up to have a more meaningful and positive experience. This change has also been widely supported by those hosting students participating in this approach. This expanded approach, which provides students with nearly a year focused on the internship experience can also be applied to the new approaches being explored as well as other academic programs such as study abroad.

Personal and Shared Meaning in the Phenomenologically-Informed Classroom

Neil Greenberg, University of Tennessee; Katherine Greenberg, University of Tennessee

In pursuit of enduring, even transformative, learning experiences, we will explore ways to encourage the discovery and creation of connections within and between students in the mastery of course content. Informed by existential phenomenology, the interdisciplinary seminar, "Art and Organism" utilizes graphic mind-maps, diaries, dialogues and – unexpectedly -- doodles to provide paths enabling students to explore what they self-identify as their deepest personal and professional concerns. As class unfolds, these activities reveal the intertwining of emotion and reason as well as the critical processes of individuation and socialization. We will ask practice session participants about their own experiences and insights.

In my interdisciplinary classroom I am concerned in particular with how best to create meaning that leads students from mere knowledge of course content to its realization -- the transformative learning experience (e.g., N Greenberg et al 2015).

In "Art and Organism," my interdisciplinary seminar for advanced undergraduate and graduate students, we focus on the biology of art and aesthetic experience and the discovery and creation of connections within and between individuals in relation to mastery of course content. I have presented variations on this theme and most of the material, annually updated, for about 40 years. The course, conjoining science and aesthetics, was originally titled "The Art and Science of Art and Science" in our University's interdisciplinary department. Currently I teach "Art and Organism" in my home department of Ecology and Evolutionary Biology where it is taken by advanced undergraduates and graduate students. Context includes an essential conversational safe-zone in which there are significant student experiences of other students (KH Greenberg, et al, 2019) and a "freedom to connect" (Sohn et al 2016).

Participation in the development of a collaborative book, "The Phenomenological Heart of Teaching and Learning" (KH Greenberg, et al, 2019), was instrumental in giving structure to my vaguely formed disposition for both giving a voice to my students and situating course content in ways more personally meaningful. In recent years I have also

joined them in several presentations including CHEP and in journal articles (e.g., Sohn et al 2016). My intention here is to explore how deploying principles of existential phenomenology in the classroom has affected my students and, frankly, me.

In this session, we will look at ways to move away from over-emphasis on lecture as we cultivate student engagement and try to resolve the persistent and sometimes pernicious tension between our needs for both individuation and socialization as often highlighted by the course theme conjoining science and aesthetics.

As often observed, we are paradoxically most alone and most fully ourselves in the context of our community. Indeed, this tension often energizes the overarching philosophical theme of existential phenomenology. In light of this (or some might argue in its shadow) students are invited into conversations and exercises that explore what they self-identify as deep personal and professional concerns. We will discuss how use of graphic mind-maps, diaries, dialogues and – unexpectedly -- doodles provide paths to the discovery and creation of connections.

We will then ask our practice session's participants to explore in small groups how these outcomes relate to their own teaching experiences -- or could. Participants will then share issues that arose and insights they gained with the large group.

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Greenberg, K., Brian Sohn, Neil Greenberg, Howard Pollio, Sandra Thomas, John Smith (2019) The Phenomenological Heart of Teaching and Learning: Theory, Research, and Practice in Higher Education. New York: Routledge. DOI https://doi.org/10.4324/9781351245906 eBook ISBN 9781351245906

Sohn, Brian K., Kristina Plaas, Karen Franklin, Tiffany Dellard, Brenda Murphy, Katherine H. Greenberg, Neil B. Greenberg, Howard R. Pollio, and Sandra P. Thomas (2016) Freedom to Connect: Insight into the Existential Dimension of Transformative Learning in a Graduate Seminar. J Transform Educat Vol 14(3):178-199. DOI: 10.1177/1541344616631425

Podcasting in the Classroom

Jay Proffitt, University of Lynchburg; Rachel Willis, University of Lynchburg

This session will offer digital resources, tips, and important considerations for those wishing to create or improve their own podcast assignments. Attendees, whether new or practiced podcasters, will leave with an understanding of foundational considerations for a podcast assignment, a knowledge of and confidence in their own ability to navigate the technology required, and a way to strike a balance between complex, high-quality equipment and a solution that is easy for faculty and students to use.

Podcast assignments offer significant instructional opportunities. Asking students to create a podcast supports inclusive, active, and engaging learning environments since podcasting recognizes students as co-creators of knowledge and encourages their use of various digital tools in their scholarship and coursework. A podcast allows students to converse with one another -- often the very foundation of knowledge creation -- and to demonstrate their learning through organized audio composition that reaches beyond the classroom and towards a broader audience. Noted compositionist Cynthia L Selfe agrees, and her landmark 2009 essay "The Movement of Air, the Breath of Meaning: Aurality and Multimodal Composing" makes a case for writing teachers to incorporate aural knowledge into the classroom in order to more broadly engage with student cultures and learning. Additionally, Selfe argues that academia's preference for writing has created a false dichotomy between aural and written communication, and that compositionists should take the lead in blurring that distinction. Leigh A. Jones agrees, and builds on Selfe's work in order to suggest that "podcasting offers the potential for exploring the aural mode of communication in service of the written. More specifically, podcasts offer important epistemological possibilities" (77). In other words, podcasting in

the classroom offers the opportunity to more comprehensively assess student learning in addition to making students co-creators of knowledge.

This session, with both beginning and seasoned podcasters in mind, will briefly offer digital resources, tips, and important considerations for those wishing to create or improve their own podcast assignments. As Rachel Willis shares her first-time experience designing and executing a class podcast, those who may be intimidated by the technology required for podcasting will gain confidence and access to resources that can guide them through their own assignment design.

After we look at design ideas and planning considerations for podcasting assignments, Jay Proffitt will address the technical requirements. Audio recording and editing plays a major role in podcast creation. Although students can execute a podcast assignment with a simple smartphone, just like style and format are important to high-stakes writing assignments, the quality of the recording, sound design, and vocal clarity is vital to creating an engaging complete podcast episode. We'll look at a range of recording equipment and explain how the desired podcast format can determine what quality and microphone setup is needed.

Session attendees, whether new or practiced podcasters, will leave with an understanding of foundational considerations for a podcast assignment, a knowledge of and confidence in their own ability to navigate the technology required, and a way to strike a balance between complex, high-quality equipment and a solution that is easy for faculty and students to use.

Practice What You Preach: Scaffolding the Synthesis of Research Literature

Gabriela Martorell, Virginia Wesleyan University

Within the physical, life and social sciences, one key feature of academic writing often involves the ability to synthesize research literature. This is a complex skill to master, and even good readers and writers often have difficulty doing so effectively. In this practice session, attendees will first participate in a classroom "contest" on synthesizing research literature. Then, I will discuss how I use this activity to scaffold the development of this skill in student writing first with a series of collaborative discussions, then with supported assignments, and last with independent work.

Overall, writing skills are considered to be among the most important academic needs for students (Huang, 2010). In order to learn how to write substantively, students need to learn how to identify and explain the key ideas within a body of work (Paul & Elder, 2006). However, within the physical, life, and social sciences, students must go even further. This is because within the sciences, writing research papers is a common task. And, writing research papers generally includes a literature review, which involves the synthesis of research literature. Thus, in addition to summarizing major ideas and deriving arguments on the basis of those ideas, students must learn how to integrate and synthesize key findings across multiple studies, as well as how to incorporate conflicting information (Mateos et al., 2018). This is a complex skill and is difficult for even good readers and writers to master (Mateos & Sole, 2009). Because of this, many undergraduate courses in the sciences incorporate assignments specifically designed to address the writing of research papers (Cole, Inada, Smith & Haar, 2013). Still, students struggle to become proficient at this. Fortunately, with assistance, students can and do show improvements in their ability to synthesize information (Barzilai, Zohar & Mor-Hagani, 2018). In this demonstration, a series of tasks designed to scaffold the development of this ability in undergraduate students will be demonstrated. This activity is used in a Research Methods course in which the final project is a research proposal where students must provide a literature review using at least 3 variables of their choosing. In the practice demonstration, attendees will be provided with a thesis sentence and 6 research abstracts. Attendees will be asked to synthesize a one-sentence synopsis of the major findings described in the abstracts, pick the 4 studies that best represent the provided thesis, and use the thesis and 4 sentences to compose a "research synthesis" paragraph. In the classroom, this task is presented as a contest and the group of students who composes the

best paragraph is awarded a prize. Following the demonstration, I will discuss the subsequent activities and assignments I use to continue scaffolded learning in students. The assignments become gradually more independent, and ultimately, students are asked to find articles for two predictor variables and one criterion variable of their choosing, provide one-sentence synopses of the abstracts, and then two one-paragraph syntheses. These syntheses then become the outline for the literature review for their research proposal. By using peer instruction and collaboration, active learning, competition, modeling, and scaffolding, students are more successful at writing a literature review that integrates appropriate and varied sources of research information.

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Qualitative Digital History in the Classroom

Bradley Nichols, Virginia Tech; Edward Gitre, Virginia Tech; Jessica Taylor, Virginia Tech

A symposium on the integrated use of virtual platforms and experiential methods as practiced by faculty members in the Department of History at Virginia Tech. Panelists will showcase the benefits of undergraduate participation in digital research projects that emphasize qualitative assessment over quantitative evaluation. Examples include award-winning online initiatives that familiarize students with archiving, documentary editing, and geographical information systems. Session features interactive technical demonstrations of how these programs are implemented in the classroom. Presenters will also facilitate a broader dialogue on the relationship between digital methods and traditional humanistic inquiry in higher education.

Over the past few years, it has become difficult to ignore the polemical battles being waged within academia over the value of the digital humanities. The timing here is no accident; although scholars in a variety of humanistic fields have long recommended adopting the tools of information technology and new media, only recently have the circumstances necessary for such a transition truly emerged. There can be little doubt, moreover, that digital literacy is now an educational imperative at all levels. Yet critiques of this approach continue to conflate digital methods with quantitative analysis and assume that the research limitations of the latter negate the pedagogical merits of the former.

Our proposed session seeks to illustrate the effectiveness of qualitative-oriented digital practices in the classroom. To that end, we will model a trio of computational history assignments that utilize state-of-the-art web applications, yet do not rely on data-driven tasks or outcomes. As numerous studies have shown, mass internet access has helped mold a generation of undergraduates who are more responsive to interactive multimedia instruction than the traditional lecture-coverage format. By extension, students now possess a greater willingness and ability than ever before to explore and comprehend the past through virtual platforms. A teaching strategy that employs inquiry-based, hands-on exercises to capitalize on these trends offers several distinct advantages. For one thing, it provides dynamic empirical training in the methods of professional historians while catering to a diversity of learning styles (visual, auditory,

tactile, social). At the same time, creative digital assignments invest students in the learning process by granting them the freedom to take ownership over their performance and validating them with the opportunity to contribute to the production of knowledge.

Each presenter at our session will focus on an individual project geared toward these objectives and lead an interactive tutorial that demonstrates its functionality. Brad Nichols will share his experiences as the curator of Killing Sites, a virtual tour of the Holocaust in Eastern Europe which consists of memorial exhibits designed by students using ArcGIS mapping software. Ed Gitre will discuss his role as the director of The American Soldier, an NEH-funded online crowdsourcing initiative in which participants transcribe, annotate, and index hand-written documents composed by rank-and-file service members during World War II. Jessica Taylor will round out the panel with a talk on her effort to build an audio repository, entitled Voices of Virginia, which brings together an array of oral histories on everyday life in the Commonwealth from the mid-nineteenth century onward.

By involving the audience in real-time simulations of how our students engage with these endeavors, we aim to replicate their constructive impact. In explaining why we have incorporated them into our curricula, we hope to encourage a fruitful exchange of ideas on the broader potential of qualitative digital history as an instructional modality. One could argue that the techniques outlined here are particularly suited to the specific nature of our discipline. We would contend, however, that they are applicable to the humanities as a whole.

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Brett D. Hirsch (ed.), Digital Humanities Pedagogy: Practices, Principles, and Politics (Cambridge: Open Book Publishers, 2012)

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Removing Distractions in Large Classes to Increase Engagement and Learning

John Chermak, Virginia Tech

There are numerous distractions in the modern classroom and examples include talking, cell phones, and off-task computers. Students "addiction" to their cell phones has been described and

well characterized (J. M. Twenge, 2017). The Department of Geosciences at Virginia Tech we teach "Earth Resources, Society and the Environment" large lecture courses to approximately 750 students every academic year. As distractions in the classroom continued to be an issue, a no electronics policy was encouraged in Spring 2018 and fully implemented in Fall 2018. Significant changes in student engagement and learning data were observed by using active learning pedagogies.

There are numerous distractions to engagement and learning in the modern classroom and examples include talking, cell phones, and off-task computers. Students "addiction" to their cell phones has been described and well characterized (J. M. Twenge, 2017). In the Department of Geosciences at Virginia Tech we teach "Earth Resources, Society and the Environment" large lecture courses to approximately 750 primarily non-major students every academic year. This class uses active learning pedagogies and student learning and engagement has been evaluated since 2016 using the self-reported Student Assessment of their Learning Gains survey (SALG) and student perception of teaching evaluations (SPOT). As distractions in the classroom continued to be an issue, a no electronics policy was encouraged in Spring 2018 and fully implemented in Fall 2018. Significant changes in the student engagement and student learning data has been observed as shown by SALG and SPOT evaluations.

Students self-evaluation of their learning, integrating information and skills acquired in the class were assessed using SALG surveys from 2016 through 2019 using a scale of their gains ranging from great, good, moderate, a little, to no (Seymour, et al., 2000). In assessing their understanding of climate change in 2016 as compared to 2019, 29% responded they had a great gain, 37% a good gain, 25% a moderate gain in 2016 and improved to 57% had a great gain, 26% a good gain, 4% a moderate gain in 2019.

The levels at which non-major students are building the skills of a scientist in a large class by recognizing a sound argument and appropriate use of evidence show a good/great gain of 48% and moderate gain of 31% in 2016 compared to an improvement of a good/great gain of 72% and moderate gain of 13% in 2019. The levels which students are self-evaluating their improvement of their ability to integrate information by using a critical approach to analyzing data and arguments in their daily life show a good/great gain of 48% and moderate gain of 31% in 2016 compared to another significant improvement of a good/great gain of 72% and moderate gain of 14% in 2019.

The SPOT data for the class is numerically assessed by students from 1 to 6 (1-strongly disagree to 6-strongly agree) to numerous questions. Results of the Spring/Fall 2016/17 classes to the question, Overall, the instructors teaching was effective ranged from 4.74 to 4.91 and improved in Fall 2018/Spring 2019 classes and ranged from 5.09 to 5.55. This is the question the University primarily uses when evaluating teaching performance.

Researcher Profiles: Teaching Students to Cultivate a Successful Online Presence

Amanda MacDonald, Virginia Tech; Rachel Miles, Virginia Tech

Students engaging in undergraduate research have the opportunity to learn from a mentor, often preparing them for future careers in industry or professional programs. While these students gain high-level, technical research skills, students often do not consider or create marketable deliverables they can use in the future to influence their career trajectory and curate their online identity. In this session, presenters will work with attendees on pedagogical approaches for teaching undergraduate researchers or others engaging in similar high-impact practices to synthesize their personal, professional, and academic experiences in order to develop research profiles related to career goals and objectives.

Online presence and identities are becoming a key component to scholars' success in academia. However, for undergraduate researchers or those engaging in other high-impact practices, online presence and promotion of deliverables created is not usually integrated into their training or included as part of their preparation for professional life after college. Conversely, over the past decade, professional academic researchers are typically aware of their

online presence; whether they are faculty members on the tenure-track or research staff in industry, they feel the pressure to compete with their regional, national, and international colleagues for recognition and career advancement.

Therefore, there is a part of digital and research literacy that is often not discussed in coursework and research experiences, yet is expected of students once they graduate. Areas of training in academic profiles and promotion are focused around publication and citations, utilization of impact factor for journal articles, competitive grant programs and funding cycles, and other metrics utilized for promotion. As a result, academics have begun to establish a more permanent online presence through avenues such as LinkedIn, ORCID iD, Google Scholar Profile, ResearchGate, Academia.edu, and Twitter. These topics and tools, while extremely important and increasingly more utilized, are often not discussed with students.

For students, the focus of the research goals could be slightly different, as they may be thinking more about their current course load or potential after graduation plans than their influence as a scholar to a field or how they appear professional online, beyond LinkedIn. Regardless of differing objectives and career paths, researcher profiles and online communication efforts help to increase the likelihood of getting noticed by peers, highlighting works created, to facilitate networking across regional and national borders, and to find potential collaborators. With the push for alternative academic careers, this is an excellent platform to be training students in early, as to best prepare them for a successful post-graduation plan.

For instructors preparing students for the workforce or graduate school, researcher profiles can be an essential tool for allowing students to think more broadly about who they are as researchers and where they would like to be. Developing a strong profile and online professional presence requires students to reflect on a variety of past personal, professional, and academic experiences, and synthesizing how these experiences have helped direct their vision and goals for what is next after college.

It is also likely the student may experience the lead authorship role at a local or national undergraduate research conference. However important this experience may be to the student during their college undergraduate experience, the act of preserving, highlighting, and promoting this work through online avenues is a stepping stone to securing and jump starting their professional and academic online presence. Undergraduates have achievements and skills to communicate to their potential future employers and colleagues, similar to how scholars disseminate and promote their research outputs. In this session, the presenters will cover a pedagogical approach that can be used when training undergraduates to create their own research profiles.

Rethinking Pedagogy: Activating Dialogue in the University Classroom

Joshua Streeter, James Madison University

This session will focus on the use of constructivist and embodied learning techniques within a university classroom. These strategies help move “talking” to “making meaning” together. We will dive into specific active learning techniques that can be used within a lesson to making thinking visible, engaging with multiple perspectives, and assess students’ prior knowledge or understanding of a concept. This workshop will model instructional strategies and ask participants to engage and reflect together.

Session's Guiding Questions: How do activating dialogue strategies change the power relationship between teacher and student? How can activating dialogue strategies be used as an engagement and assessment tool? How can I use activating dialogue strategies in my university classroom or own context? How might the use of activating dialogue shift the culture and climate of my classroom?

Activating Dialogue strategies use “verbal, written, and/or physical or embodied dialogue to connect students’ prior knowledge and lived experience to a larger inquiry in the curriculum” (Dawson & Lee, 2018). These strategies focus on making thinking visible, engaging with multiple perspectives, and assessing students’ prior knowledge or understanding of a concept.

During this session, the presenter will share embodied learning techniques in the university classroom by modeling selected "activating dialogue" strategies with conference participants. Together we will reflect and unpack the work, focusing in on the role of constructivism, questioning, and embodiment that the activating dialogue strategies require. After each strategy we will reflect, considering what the strategy (1) requires of a teacher, (2) requires of a student, (3) why the strategy would be an effective tool in the classroom, and (4) applications for individual contexts. The presenter will share how these techniques can be adapted to fit a variety of contexts (the presenter currently teaches a 300-person course, a 35-person course, and a 16-person course) and in a variety of university contexts (the presenter teaches these techniques to instructors across his campus to different departments). Finally, the presenter will share further resources on "activating dialogue" strategies and creative body-based learning.

This session focuses on re-framing and re-thinking how we teach and why, no matter what a specific instructor's field of study is. Participants will consider and reflect on dialogue in relation to the impact on classroom culture and climate. Use of activating dialogue strategies focus on the role of critical pedagogy (power and knowledge) and culturally responsive pedagogy (multiple perspectives based on backgrounds and experiences) within the university context. Use of constructivist techniques increases teacher self-efficacy (Lee, Cawthon, & Dawson, 2013) and student engagement (Cawthon, Dawson, and Ihorn, 2011).

Spark a Fire: Promoting Active Learning Via Peer Instruction

Gabriela Martorell, Virginia Wesleyan University

A common issue in the classroom involves challenges associated with promoting active learning, student engagement in course materials, and participation in class discussions. In this practice session, the use of online annotations and peer-to-peer instruction techniques will be presented as a means by which to accomplish these goals as well as to enhance both the student and instructor experience. Session attendees will first participate in a practice peer-to-peer instruction demonstration. Following this, classroom management and preparation will be discussed and tools to accomplish these goals within the context of a partially flipped classroom will be presented.

Faculty in higher education are tasked with teaching students critical thinking skills, applications of course materials to everyday life, and promoting student engagement. These goals are often hampered by student lack of preparation and student hesitancy to engage in substantive classroom discussion. Although students agree it is important to complete readings before class and know that their professors expect them to do so, most students rarely do. For example, research has shown that only 18 percent of students report that they frequently or always read before coming to class, and 53 percent report they rarely or never do so (Berry, Cook, Hill & Stevens, 2010). Moreover, students report that it is the faculty's responsibility to cover text material during class time and rely on faculty to tell them what content is important (Clump, Bauer & Bradley, 2004). One way in which student learning can be enhanced is via the use of online, interactive annotations. The use of annotations has been shown to significantly improve learning outcomes and result in greater compliance with instructions to read course materials prior to class time (Miller, Lukoff, King & Mazur, 2019; Subre et al., 2019). The annotations can be paired with peer-to-peer instruction, which is positively associated with learning gains in comparison to traditional lecture formats (Balta, Michinov, Balyimex & Ayaz, 2017; Smith et al., 2009). In this practice session, I will present an annotations tool using interactive online "conversations" focused around textbook readings and due prior to class. Following the annotations assignment, comments are used to plan lecture content. Problematic or interesting content is identified on the basis of student annotations, and short lectures are developed only for this information. Following the short lectures, online polling tools are used to apply the information in class. For questions in which student polling responses indicate they have not applied information correctly, the class breaks for discussion and peer-to-peer instruction. This process leads to greater compliance with course readings, more engaging discussions and enhanced learning gains.

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Specifications Grading: A Strategy for Cultivating Productive Student-Instructor Relationships

Dorothe Bach, University of Virginia; Rose Buckelew, University of Virginia

Specifications grading is an alternative and potentially more equitable grading system that provides an opportunity for instructors to architect more reflective and constructive relationships with students. Key features of specifications grading, in particular the involvement of student choice and detailed assignments and transparent evaluations, can potentially diminish conflict, reduce miscommunication, and minimize student perceptions of instructor bias. Session participants will learn the core elements of specifications grading and explore two different schemes used to deepen student learning, strengthen student-instructor relationships, and address systemic inequality. Participants will then discuss how they may use specifications grading in their own courses.

The purposes, processes, and consequences of grading have long interested higher education researchers. Conversations have focused on the meaning, validity, and efficacy of grading and the intended and unintended impacts of grades on students in terms of motivation, self-efficacy, and minority student retention. (Walvoord & Anderson). Given these challenges, it is no wonder faculty struggle to create "meaningful, moral, and manageable" grading schemes (Barre).

Specifications grading is an alternative, potentially more equitable grading system that involves the instructor specifying work requirements for each letter grade, creating detailed assignment descriptions, and clearly communicating evaluation criteria with students (Nilson 2015). Such transparency has been associated with enhanced academic success and reductions in achievement gaps (Winkelmes).

Specifications grading also provides an opportunity for instructors to architect a more reflective and constructive relationship with students. By allowing students to select their engagement and workload, it puts students in control of their learning and course grade. It thus shifts responsibility for course grades away from the instructor, minimizing conflict. Similarly, detailed and transparent assignments, rubrics, and feedbacks reduce miscommunications.

More specifically, specifications grading can work to minimize student perceptions of instructor bias and foster self-reflection. Research indicates students may interpret poor grades as being related to instructor bias (Baker & Copp). Instructors teaching courses involving sensitive or controversial topics may be particularly vulnerable to student perceptions of bias, especially when instructors' identities are related to the controversial topics. Altogether, specifications grading may be a way to address issues of student perceptions of teaching effectiveness.

This session explores two different specifications grading schemes developed by the presenters to achieve three goals: a) deepen students' learning of class content; b) ameliorate systemic inequity; and c) improve student-instructor relationships.

Presenters will share how, in sociology and criminology courses, students explore traditional grading as a system that perpetuates privilege, and discuss how specifications grading can be a more equitable approach. In these courses, grading also becomes a vehicle for proactively intercepting student bias against the instructor and course content.

In the second example, students in a course on the practice and science of contemplation discuss grading systems as social conditioning into a culture of "excellence." Choices about grades and workload and transparent feedback are occasions for nurturing relationships of mutual respect and caring.

Session Outline:

After a brief icebreaker and an introduction to specifications grading (10 min), participants will explore sample readings, discussion prompts and short reflection assignments developed by the presenters to introduce students to specifications grading. Together we will discuss how these assignments work to enhance course content, reduce bias towards the instructor, and strengthen relationships (25 min). Individually and in small groups, participants will create plans for how they may use specifications grading in their courses (15 min).

Session Objectives:

As a result of the session, participants will be able to:

- describe the core elements and functions of specifications grading
- give examples for connecting specifications grading to course content
- identify strategies within the specifications grading framework to help reduce bias and foster positive student-instructor relationships

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Storytelling as Critical Pedagogy for Transformative Learning

Kim Niewolny, Virginia Tech

This session includes a discussion and illustration of the possibility of incorporating storytelling as a form of transformative learning pedagogy in higher education to build personal, professional, and community capacity for social change. Storytelling has a long history and a number of intersections with learning in and outside of the classroom for social justice. Drawing upon the tradition of cultural community development and the principles of critical pedagogy, the session explores how storytelling is a form of critical and cultural praxis with emphasis on the role of dialogue, reflexivity, and performativity.

This session is focused on the ways in which narratives and storytelling are a form of transformative learning pedagogy in higher education to build personal, professional, and community capacity for social change based on critical forms of dialogue and performativity (Dixon, 2018). Specifically, the session will introduce participants to narratives and Story Circle methodology from a cultural praxis perspective by drawing upon the tradition of cultural community development and the principles of critical pedagogy. The session will first begin with an introduction to Roadside Theater's (2014) Story Circle methodology. Rooted in civil rights history, Story Circles are crafted as a group of people sitting in a circle telling stories or remembrances, which are led by a Story Circle facilitator. Each Story Circle

is different according to its purpose for gathering and reflective action. In this context, a story is a personal memory, a dream, a reflection, or a moment in time. As a form of critical and reflective praxis, the circle honors the authority and expertise of each story teller. Here, each person is the authority of our own experience. Another approach to storytelling is in the realm of narrative inquiry (Connelly & Clandinin, 2005). Similar to Story Circles, the definition of "narrative" means both a process and a product of story (Richmond, 2002). This includes treating stories as both a process of reflexivity through storytelling and the products of engaging and performativity with everyday knowledges constructed by personal meanings, world views, and histories.

The work of storytelling in this context is also framed by a community-university storytelling project that took place as an experiential component of a course on community development at Virginia Tech. This initiative was launched to create and share narratives as "stories" that express the diverse experiences of people working for social justice in the region, which includes the voices of community and university educators and students from across western North Carolina, southwest Virginia, and West Virginia. In many ways, the crafting and sharing of personal narratives of social change has been most important as a space to create hope, possibility, and a shared understanding of our everyday lived experiences for continued learning and community building (Niewolny & D'Adamo-Damery, 2016). It is the generative quality of the storytelling that provides "life affirming" possibilities and strategies in our learning and meaning making, which can provide hope and dignity to our spaces of learning (Freire, 1972).

Therefore, upon completion of this session, participants can expect to:

- Identify the purpose of storytelling to generate creativity, empathy, and idea-making within our university classrooms.
- Apply Story Circle methodology in their own classrooms
- Value storytelling strategies in our learning processes for critical pedagogy and transformative outcomes.

Connelly, F. M., & Clandinin, D. J. (2005). Narrative inquiry. In J. Green, G. Camilli, & P. Elmore (Eds.), Handbook of complementary methods in educational research (pp. 477-489). Washington, DC: American Educational Research Association.

Dixon, B. A. (2018). Food justice and narrative ethics: Reading stories for ethical awareness and activism. London: Bloomsbury Academic.

Freire, P. (1972). Pedagogy of the oppressed. New York: Continuum International Publishing Group.

Niewolny, K. & D'Adamo-Damery, P. (2016). Learning through story as political praxis: The role of narratives in community food work. (p. 113-132). In Sumner, J. (Ed.), Learning, food, and sustainability: Sites for resistance and change. New York: Palgrave/Macmillan.

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Strategies for Implementing Universal Design for Learning in Your Classroom

Jihoun An, Eastern Carolina University; Deborah Good, Virginia Tech; Heather Panczykowski, Eastern Carolina University; Trang Tran Eastern Carolina University; Jennifer Williams, Eastern Carolina University

Universal Design for Learning (UDL) is a framework for improving teaching and learning using scientific insights about the way people learn. Three main principles -- engagement, representation and action/expression -- describe the flexible framework for UDL that attempts to reach student learners of all types. The co-authors are from different universities, teach different types of courses, and have differently-sized classrooms. In this practice session, they will discuss the unique ways that they have implemented UDL in their individual classrooms, and provide time for participants to design a UDL practice in their current courses.

Universal Design for Learning (UDL) is a framework for providing equal opportunities for all learners. Within UDL, there are three main components that educators can use in designing their curriculum: 1. multiple means of engagement, which provides alternate means for motivating learning; 2. multiple means of action and expression,

which allows for multiple ways that students can demonstrate their learning of course content; and 3. multiple means of representation, in which course material is presented in multiple formats (Parker, 2012). The four instructors collaborated as part of a College STAR Learning Community (SLC), an initiative that seeks to infuse the principles of UDL into postsecondary classrooms and resources. The instructors collectively identified barriers to student learning, selected appropriate interventions based on the UDL framework, and implemented at least one intervention based on a principle of UDL that was included in a recent course.

This practice session will be broken up into three distinct parts, with opportunities for participants to work with presenters on ideas to integrate UDL into courses. The session outline and description of each presenter's project are below.

15 Minutes: Introduction to UDL and discussion of principles across disciplines.

25 Minutes: Participants will be divided by discipline and will work with presenters in the discipline below to brainstorm ideas on how to integrate UDL into their course(s).

Education: The UDL framework was infused into a teacher preparation course as a way to maximize students' learning of course content -- knowledge of disability and inclusive practices of teaching. Strategies implemented in this course were fostering collaboration and cooperative learning (engagement), using conceptual mapping tools and consistent use of learning management tools (representation), and activity-based learning (action/expression). Course/instructional samples will be shared with the participants.

Basic Science: UDL principles can help reduce barriers in basic science courses when we design alternatives to traditional learning materials, and provide opportunities for assignments to have real-world relevance to the students. Examples of UDL use in basic science courses as well as survey and grading results, and student artifacts from an intervention will be presented.

Health Sciences: In health sciences, students' ability to reflect has been lauded as a necessary skill set required to address clinical problems that extend beyond technical solutions. Strategic use of UDL principles provides a systematic way to engage the learner by offering choices in how they demonstrate their reflective ability. Summative rubrics will be shared that allow for creativity in assignment structure for both educators and students, and also include uniform grading processes to assess student work expressed in alternative formats.

Marketing: UDL frameworks in marketing classes can help students stay engaged and enhance learning experiences. Strategies were implemented through hands-on learning experience where students demonstrated their understanding by completing in-class assignments. Students' ability to comprehend key concepts were measured, comparing students with UDL activities, versus those without.

10 minutes: The entire session will end with a debriefing by each of the discipline sessions.

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Strategies to Support Instructional Design Decisions for Authentic Learning

Jill Stefaniak, University of Georgia; Meimei Xu, University of Georgia; Enid Truong, University of Georgia; Xigui Yang, University of Georgia

Authentic learning is a pedagogical approach that places students in real-life situations and allows them to solve real-world problems that they may not otherwise experience within the confines of a class. The purpose of this session is to provide educators with a framework to help guide their instructional design decisions for authentic learning experiences. Strategies to mitigate uncertainty and the challenges with coordinating authentic learning in situated environments will be discussed.

Instructors, regardless of their professional discipline, struggle with explaining to students the rationale behind class assignments and activities. Students struggle with understanding the relevance of certain activities when they lack experience with real-life applications. Authentic learning activities are a means of providing students with real-life experiences in a situated-learning environment. Most authentic learning opportunities occur outside of the traditional classroom and can be leveraged to promote the intended goals and outcomes of a course. Like any other type of assignment, students are more apt to become engaged in the experience if they are able to see the relevance of how it relates to their coursework.

Authentic Learning Experiences

Authentic learning is a pedagogical approach that places students in real-life situations and allows them to solve real-world problems that they may not otherwise experience within the confines of a class (Herrington, Reeves, & Oliver, 2014). Authentic learning coincides with situated learning theory in that emphasis is placed on "the notion of learning knowledge and skills in contexts that reflect the way the knowledge will be used in real life" (Collins, 1988, p. 2).

Herrington and Oliver (2000) identified the following nine essential characteristics for authentic situated learning environments that promote learner-centered instruction:

1) Provide authentic contexts that reflect the way the knowledge will be used in real life.

2) Provide authentic activities.

3) Provide access to expert performances and the modeling of processes.

4) Provide multiple roles and perspectives.

5) Support collaborative construction of knowledge.

6) Promote reflection to enable abstractions to be formed.

7) Promote articulation to enable tacit knowledge to be made explicit.

8) Provide coaching and scaffolding by the teacher at critical times.

9) Provide for authentic assessment of learning within the tasks.

When integrating authentic learning experiences within a course curriculum, instructors make assumptions that their students have the necessary foundational knowledge to carry out the tasks at hand in a situated context. Brush and Saye (2000) identified several issues that may arise during the implementation of authentic learning experiences that instructors must be cognizant of and take into consideration while planning.

The purpose of this session is to provide educators with a framework to help guide their instructional design decisions for authentic learning experiences. Strategies to mitigate uncertainty and the challenges with coordinating authentic learning in situated environments will be discussed. This interactive session will discuss the relationship between the design of authentic learning experiences and a scaffolded approach to designing authentic learning experiences. It will provide an open dialogue for audience members to discuss the impact these experiences have on learners.

Student-Centered Learning with POGIL Pedagogy

Joyce Easter, Virginia Wesleyan University

Students actively involved in the learning process often show increased knowledge acquisition and skill development than passive students. Process-oriented guided inquiry learning (POGIL) pedagogy is a student-centered approach that develops student process skills while students are actively engaged in mastering course content and interacting with each other. In a POGIL learning environment, students work in self-managed teams of three or four using specially designed

materials that develop at least one process skill and guide students through a learning cycle to construct understanding of and apply course content. This session will introduce POGIL philosophy and methodology while modeling POGIL pedagogy.

Process Oriented Guided Inquiry Learning is an instructional strategy that provides opportunities for students to develop both content and key process skills at the same time. POGIL classrooms and labs consist of small, self-managed teams working on intentionally designed materials to master concepts. This approach was developed to provide a learner centered methodology and structure that is consistent with how people learn. POGIL pedagogy was developed as a reform initiative to address the gap in student learning observed with traditional teaching methods. Cognitive sciences research (Bransford, Brown and Cocking) documents that people learn by (1) constructing their own understanding based on prior knowledge, experiences, skills, attitudes, and beliefs; (2) following a learning cycle of exploration, concept formation, and application; (3) connecting and visualizing concepts and multiple representations; (4) discussing and interacting with others; (5) reflecting on progress and assessing performance; and (6) interconnecting conceptual and procedural knowledge in large mental structures.

POGIL utilizes self-managed learning teams, guided-inquiry materials based on the learning cycle, and metacognition (Hanson). Students working in a team environment learn more, understand more, and remember more when they work together. They are also more likely to acquire essential process skills, such as critical thinking, problem solving, teamwork, and communication. (Johnson, Johnson and Smith). Real understanding and learning are achieved by actively restructuring information absorbed. A POGIL learning activity engages students and prompts them to restructure information and knowledge through guiding them through the learning cycle consisting of three stages or phases: exploration, concept invention or formation, and application (Abraham). POGIL requires students to use metacognition to develop student's ability to self-monitor, reflect on learning, and self-assess resulting in students that are in charge of their own learning. In the POGIL classroom the instructor is not the expert conveyor of knowledge, but rather is a facilitator who guides students in the process of learning, helping them to develop process skills and conceptual understanding, and to apply this understanding in solving problems. Since its implementation in the late 1990s, the effectiveness of POGIL instruction has been evaluated in a variety of courses in a wide range of institutions and disciplines. The evidence indicates that POGIL instruction produces better understanding and higher grades compared with traditional lecture methods.

In this session, participants will experience and explore a POGIL classroom, including roles and learning cycle-based activities. This session is designed for those with limited or no previous exposure to POGIL. Participants will have the opportunity to engage in POGIL activities, observe facilitation strategies firsthand, and learn about the essential elements of POGIL pedagogy.

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Student Mental Health: The Classroom Connection

Brian Lusk, Radford University; Danielle Lusk, Virginia Tech

As mental health concerns grow across college campuses, faculty are often left wondering how they can assist students who may be struggling with mental health issues. This practice session will (a) address some of the common mental health challenges and issues college students face and (b) explore instructional strategies, policies, and practices that may help address some of these challenges.

Teaching Adult Learners

Amy Johnson, East Tennessee State University

Adult students are an essential part of the diverse fabric of any higher education institution. Non-traditional learners have experiences, assets, and challenges that are distinct from traditionally aged students. This workshop will provide definitions of adult and post-traditional learners, offers an overview of adult learner experiences in the university, and suggests classroom strategies for effectively responding to adult learners' needs.

Learning Outcomes: Participants will describe the characteristics of post-traditional learners. Participants will experience, through an interactive, game-based environment, the challenges and experiences many post-traditional students face. Participants will develop tools to leverage the experiences and strengths of adult learners within the college classroom.

Session Description: In the introduction of the session, participants will reflect upon and share their experiences of working with non-traditional students. Participants will receive some information regarding the characteristics of adult or post-traditional learners.

In the heart of the session, participants will play a modified Jenga game meant to demonstrate many of the barriers adult learners face when pursuing higher education. Prompts for the game are based upon the framework for barriers to adult student success developed by Patricia Cross (1981). These barriers are categorized as dispositional, institutional, and situational. The game replicates the compounding effects difficult experiences have on the lives of adult learners.

Finally, the session concludes by exploring some pedagogical (or andragogical strategies) for teaching adult learners. These strategies include providing opportunities for adults to incorporate their life experiences, providing various aspects of choice in assignments and classroom activities, applying course content to work skills or family harmony, and developing strategies for flexibility in assignment dates.

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Brookfield, S. (1995). Becoming a Critically Reflective Teacher (Jossey Bass Higher and Adult Education). San Francisco, CA: Jossey-Bass. [ISBN: 0787901318]
Caffarella, R. S. (2001). Planning Programs for Adult Learners: A Practical Guide for Educators, Trainers, and Staff Developers, 2nd Edition. San Francisco, CA: Jossey-Bass. [ISBN: 0787952257]
Cavanah, S.R. (2016). The spark of learning: Energizing the college classroom with the science of emotion. Morgantown, WV: West Virginia University Press.
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Knowles, M., Swanson, R. A., & Holton, E. F. (2011). The Adult Learner, Seventh Edition: The definitive classic in adult education and human resource development (7th ed.). Burlington, MA: Elsevier.
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Teaching Empathy: Rationale and Tool Kit

Eric Rice, Johns Hopkins University

Individuals with empathy create the social fabric of society. They generate the willingness to collaborate, to build alliances and to live together communities. And yet, empathy is a trait and set of skills often ignored in the college classroom.

This session explores the data on the importance of empathy and the research on how it is learned. Equally important, the session offers participants an opportunity to experience teaching exercises that can be incorporated in class to teach the skills.

Empathy - the capacity to imagine and feel the perspective of others - is the basis of emotional intelligence and a skill that differentiates great leaders from average leaders, excellent social workers from average social workers, terrific teachers form average teachers and effective managers from average managers. Often ignored in instruction but critical to real success in life, empathy, for most people, is a skill that can be gained, even mastered. Yet how and when can we teach the skill in higher education? What options do we have for incorporating activities and instruction into our teaching and classroom management? What proven techniques can be adapted from teaching and other professions to teach this skill?

This session explores the research data about the importance of empathy, explores the social science data on how it is learned and involves participants in a series of short exercises that can be used in the college classroom to explore and teach the concepts related to the idea. Participants will leave the session with a toolkit of teaching ideas, a solid understanding of the importance of empathy and data about how we know it is mastered, and an opportunity to have discussed their own experience in working to incorporate the topic into class.

Teaching Ethical Reasoning as Critical Thinking: A Fallacy-Based Approach

Andrew Marx, Virginia Commonwealth University

This session will explore concepts and strategies for blending coursework covering two essential skills in general education programs: critical thinking and ethical reasoning. A great deal of critical thinking instruction focuses on analyses of arguments and the correction of flawed reasoning, and the study of argumentative fallacies can be very useful in those efforts. Argumentation looms large in ethical inquiries as well, but the tools of critical thinking are often under-utilized there. Participants in this session will explore ways to apply methods of critical thinking, particularly the diagnosis and correction of fallacies, in instruction on ethical reasoning.

This session will explore a significant area of intersection of two “first year” core curriculum skills: critical thinking and ethical reasoning. Critical thinking courses frequently cover argumentative fallacies, which I define broadly as errors in reasoning in support of claims. There are many fallacies that are directly relevant to ethical arguments, though. My experience has shown that these fallacies come into play less often in philosophy classes - the traditional setting for ethical reasoning instruction - than in composition, research writing, and other general education courses where students bring ethical concepts to bear on real-world problems with fewer disciplinary constraints.

In this session, we will explore approaches to diagnosing fallacies of ethical reasoning and strategies for revising fallacious ethical arguments. We’ll spotlight some rarely examined or hitherto unclassified - but frequently committed - ethical fallacies. While this is directed at enhancing instruction in ethical reasoning, it should be of great benefit to those teaching argumentation in other domains as well.

I will lay out a scaffolded approach to instruction on argumentative fallacies that leads students from basic comprehension to tasks that prompt application, analysis, and creative thinking with these concepts. This will include sharing exercises and encouraging attendees to work through some of them, and to generate their own ideas for similar tasks. For instance, students begin with diagnosing flawed arguments in more schematic forms before moving on to examine more complicated texts. They can then begin to think about fallacious arguments might be rehabilitated. An even more challenging task calls for students to devise original examples of “bad” arguments by applying deep comprehension of fallacies.

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Technology Tailored to All: Challenges and Best Practices

Virginia Tech Academy of Teaching Excellence

In this session, members of Virginia Tech's Academy of Teaching Excellence will share their different philosophies and approaches to utilizing technologies in the classroom. Topics will range from implementing advanced technologies to assisting with large-scale online classes. ATE members will also discuss testing to understanding how everyday technologies enhance students' qualitative experiences in classes with under twenty-five students. This panel of award-winning teachers aims to share challenges, strategies, best practices, and guiding philosophies around how technologies can assist teachers in managing increasing instructional demands and how they can contribute to meaningful classroom experiences.

Invited Presentation:

Panelists: Jeannine Eddleton (Chemistry), Gary Long (Chemistry), Joseph Merola (Chemistry), Marian Mollin (History), Alex Niemiera (School of Plant and Environmental Sciences), Greg Tew (Architecture)

Moderators: Sharon Johnson (Modern and Classical Languages and Literatures/Women's and Gender Studies), Anthony Kwame Harrison (Sociology/Africana Studies)

The Evolution of a Rigorous Portfolio Process for College Credit

Windi Turner, James Madison University; Kathy Clarke, James Madison University

Adult learners returning to higher education for undergraduate degree completion come with professional training, certifications, and other experiences that should allow them to earn college credit for their experiential learning. But the quality of their "real world" life experience needs to demonstrate the same rigor as current undergraduate coursework. This session will showcase how James Madison University has evolved the portfolio of prior learning for credit process from an informal review to a more rigorous assessment of the knowledge and skills acquired prior to or outside of enrollment in higher education.

Undeniably, the Adult Degree Program (ADP) at James Madison University (JMU) is here to stay. Institutions of higher education have attempted to create programs and services responsive to the unique needs of adults and their learning preferences for decades. As such, college faculty and administrators are challenged to think beyond traditional methods of instruction and program delivery. Like many other institutions and programs, JMU's ADP has a 40-year history of adaptation to a student population of adult learners.

One of these adaptations is the portfolio of prior learning (PLA), an assessment of knowledge and skills acquired prior to or outside of enrollment in higher education for the purpose of earning college level credit. Through a portfolio, a student makes a case by succinctly identifying, articulating, and documenting mastery of learning. PLA is an option for a student who has gained significant learning through experiences such as workplace training, volunteer service, civic activities, conferences, workshops, vocational interests, travel, and independent reading. PLA is not an option for everyone. The process entails extensive preparation, excellent academic writing skills, and the ability to meet deadlines. There is no guarantee that a portfolio submitted for credit will be approved.

This session will introduce participants to how the ADP at JMU has evolved the portfolio for credit process from an informal review to a more rigorous assessment. In previous years, adult degree-seeking students could create a portfolio showcasing their career experiences for college credits and were awarded an amount based upon the subjective view of an individual faculty member with no specified guidelines. Recently, the structure of the portfolio was changed to align the method of assessment with the standards of the Council for Adult and Experiential Learning (CAEL). The submission process has also changed to allow for a preliminary review and feedback prior to the final review. This new process now requires students to complete an online class to which they identify a single course, secure the course syllabus, and then map their experiences to the course learning outcomes. They also learn how to

connect adult learning theories to their experiential learning and how to identify supporting documentation of these experiences. After the course is completed, students may submit a portfolio for review by the appropriate academic department.

Participants in this session will also see how our credit by portfolio has evolved, including the syllabus and assignments in the required class, and examples of how students successfully earned portfolio for credit from an academic department.

The Intellectual Mixtape: Composition Revisited

Tyechia Thompson, Virginia Tech

Models the Intellectual Mixtape Project as an AudioVisual Digital Humanities module. The intellectual mixtape uses jazz and hip hop as a framework to create an audio compilation and conversation that samples literary-audio texts. The intellectual mixtape has three tracks that feature the audio texts from the syllabus, the students' voice in their own words, and an audio of the students' choice. This method of teaching and analyzing literature shifts the practice of literary analysis from top down approaches that privileges the authority of the text and instead encourages the student to converse with the text to create new knowledge.

I will share, model, and discuss the Intellectual Mixtape Project as an AudioVisual Digital Humanities module. The intellectual mixtape uses jazz and hip hop as a framework to create an audio compilation and conversation that samples literary-audio texts. The intellectual mixtape has three tracks that feature 1) the audio texts from the syllabus, 2) the students' voice in their own words, 3) and an audio of the students' choice. As a companion to each track, students write 500 words of liner notes with the title of their tracks, curation decisions, audio-effect and mixing decisions and a significant detail about the theme for your track/mixtape. Students publish the entire mixtape with original or "remixed" cover art on an online platform.

I will also discuss the methods of structuring the intellectual mixtape project through providing students with audio literary-audio texts in the syllabus, requiring students to complete and submit audio homework assignments, and teaching students the basics of audio editing. This method of teaching and analyzing literature shifts the practice of literary analysis from top down approaches that privileges the authority of the text and instead encourages the student to converse with the text to create new knowledge. The outcomes of this course have the potential to advance the impact of the humanities on students' learning through creativity, collaboration, and experiential learning.

The third part of the study will address the challenges with the Intellectual Mixtape Project. These are finding relevant audio texts and dealing with the many limitations imposed by U.S. copyright law. Some ways to address the challenges imposed by U.S. copyright law might be 1) finding loopholes in which sampling audio is recast as a form of quotation, 2) using databases of copyright free music, 3) using works from lesser known artists who will willingly license their tracks, and/or 4) obtaining funding to pay to license tracks.

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Using High-Impact Applied Learning for Information Literacy Development

Julia Waity, Wilmington University; Stephanie Crowe, Wilmington University

The connection between applied or experiential learning and information literacy education is both profound and under-explored. Based on a pilot project we did with a Sociology of Poverty course, we believe that high-impact applied learning can be used to help students gain an understanding of high-level information literacy concepts by immersing them in an experience rather than just providing skills-based training. In this session, we will describe our pilot project and facilitate a conversation around the connections between information literacy and applied learning.

Applied or experiential learning is defined at our institution as "a pedagogical model that places students in experiences requiring them to integrate theories, ideas, and skills they have learned into new contexts, thereby extending their learning." This model, based on the theory of high-impact practice, provides a different kind and often higher level of understanding by situating students within an experience.

At the same time, information literacy as a field is moving beyond skills-based training (e.g., how to use a library database) and towards situational and transformative knowledge. The publication in 2016 of the Association of College and Research Libraries' Framework for Information Literacy for Higher Education marked a shift in thinking, focusing attention on six "frames" around which information literacy understandings should center in higher education.

We believe that this more complex model of information literacy lends itself well to an applied learning framework. Beyond sitting in a classroom and learning where to click within a database, or even learning from a librarian about ways to evaluate resources, applied learning activities can help students understand information literacy concepts at a much more profound level.

We piloted connecting information literacy with applied learning in an upper-division Sociology of Poverty class, during which students engaged in a community-based photography project with low-income children in our city. We connected this project to the information literacy concept known as "Authority is Constructed and Contextual" -- in other words, the best authority for a topic is dependent on the type of information one is trying to gather. In this case, we asked students to reflect on the type of information about poverty they might best receive from their instructor or

scholarly research versus the type of information they might best learn from individuals living in low-income environments.

Our longer-term plan, working in conjunction with our campus's Office of Applied Learning, is to develop a set of learning objects (for instance, assignments or course units) that would be shared with the larger campus community, connecting information literacy to applied learning.

In this session, we will describe our pilot project and facilitate a conversation around other possible connections between information literacy and applied learning, providing an overview of the Framework for Information Literacy for Higher Education as a baseline for discussion.

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Using Informal Student Feedback to Enhance the Learning Environment

Kimberley Filer, Virginia Tech

The classroom climate is an important element for students' success; however, sometimes establishing a positive environment for learning can be a challenge. This session will focus on (1) what is a positive classroom climate, (2) what factors contribute to a positive classroom climate, and (3) a method to collect data about classroom climate.

What is Art? Energizing Persuasive Writing Through Philosophical Debate

Rachelle Kuehl, Virginia Tech; Dan Kuehl, Patrick Henry High School

As most conference attendees are keenly aware, many students are ill-prepared to write at the level required for successful college completion. In addition to generally poor writing skills, countless incoming college students cannot craft a cohesive, convincing written argument supported by evidence. In this presentation, participants will engage in a spirited debate over the age-old philosophical question: What is art? In doing so, they will learn how to use short intervals of writing to increase participation in class discussions and improve students' reasoning and writing skills. Detailed instructions for facilitating the debate format demonstrated in this session will be shared.

The quality of U.S. students' writing is not what it should be. In 2012, the National Assessment of Educational Progress (NAEP) released a report showing only 27% of both twelfth-grade and eighth-grade students scored at "proficient" level on a national writing assessment (National Center for Education Statistics). Among college-bound students taking the ACT writing exam in 2016, 40% lacked the skills necessary to succeed in a college writing course (Goldstein, 2017). In a time when advanced communication skills are necessary for an overwhelming proportion of jobs, professors feel dismayed and frustrated at students' seeming inability to draft coherent prose.

Of particular concern is students' failure to carry out effective arguments in writing, even though argument "is at the heart of critical thinking and academic discourse, the kind of writing students need to know for success in college . . . and career" (Hillocks, 2010, p. 25). Students must be able to state a claim, present relevant evidence, consider alternative viewpoints, and arrive at a sound conclusion that convinces others to adopt their viewpoint (Song &

Ferretti, 2013, pp. 67-68). Unfortunately, students often proffer a "my-side bias" (Perkins, 1985), failing to acknowledge and refute opposing stances.

In response to this problem, this presentation will equip instructors to teach a fun, engaging class session that will require students to craft a convincing argument in writing. Presentation attendees will participate in a debate over aesthetics, then receive clear instructions for recreating the debate in their own classrooms. During the debate, participants will articulate their own definition of art then vote on whether various items (e.g., a painting, a yogurt container, a garden) qualify as "art." Aesthetics was chosen as the focus of this debate because "everyone who uses the word â€˜art' in ordinary conversation has a concept of art" (Lankford, 1992, p. 4), and people are very passionate about what they consider constitutes true art. However, because the question of aesthetics has no absolute answer, and because people often differ on their opinions about art, participants must use reason and logic to convince others their position is justified. Key to the success of this debate is participants having the opportunity to process their ideas in writing before presenting them aloud. This technique brings broader participation from students who feel more comfortable sharing their ideas after articulating them in writing first (Lemov, 2015). Further, it forces students to listen and respond to the opposing viewpoint, as "incorporating counterarguments and refuting them are crucial for maximizing the extent of persuasiveness in argumentative writing" (Liu & Stapleton, 2014).

Participating in this session will equip professors to create a classroom climate welcoming of debate, use quick-writing during instruction to stimulate students' thinking and participation, and motivate students by setting a real purpose for writing (in this case, to convince others of their stance on aesthetics). Handouts and electronic links with instructions for facilitating the activity demonstrated in this session will be shared.

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What's Your Story?: Narrative-Based Design and Student Research Posters

Kelsey Hammer, Virginia Tech; Amanda McDonald, Virginia Tech

With experiential learning gaining increased attention, more opportunities are arising for students to share their work. Faculty often see the benefit of creating assignments that require students to communicate their research in a visual way. While it is easy to assume students are technically savvy and can design posters, the research poster can be a difficult task for even a seasoned academic. For this workshop, participants will be introduced to an active learning exercise grounded in narrative-based design. Attendees will be guided through the activity and leave with access to lesson materials and learning objects for future use.

With experiential learning gaining increased attention, more and more opportunities are arising for students to share their work locally, nationally, and even virtually. Faculty often see the benefit of creating assignments for students that require them to communicate their research in a more visual way. As such, the research poster is commonly assigned to undergraduate students and researchers. While it is easy to assume that today's students are technically savvy and already prepared to design posters, the research poster (and really designing any document) can be a difficult task for even a seasoned academic. Instead of expecting students to jump right into designing, it is important to provide them an avenue for considering concepts like layout, story, and audience before they ever open their laptops.

In our work with undergraduate researchers, faculty, and patrons, we have created a pedagogical process where learners work through a lesson and accompanying learning objects to describe their audience, organize their content, plan visuals, and most importantly sketch a design. This scaffolded process onboards new poster creators and strengthens the work of seasoned veterans. We have found success with this active learning exercise when teaching students to create academic posters and are in the process of extending this approach to other design projects, including data visualization and infographics.

Even if your students are not designing posters, the principles of narrative based design are endlessly useful and can be applied to other assignments and areas. Narrative-based design, like narrative-based learning, hinges on the theory that humans learn best when they can transform their experiences into stories. Once a student learns how to compose and share the story behind their experience (i.e. the story of what they learned while conducting research), the student will be able to transfer this skill into a variety of other outputs with which they may be communicating.

For this practice workshop, participants will be introduced to the structure of narrative design and its uses at Newman Library and other institutions/libraries for a myriad of assignments, disciplines, and pedagogical purposes. Attendees will then be guided through the process themselves for designing an academic poster on their work/research or something fun and personal (a pet, vacation, favorite food, etc.). Attendees will not only leave with the experience, but also with access to lesson materials and learning objects for future use.

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RESEARCH SESSIONS

A Different Kind of Class Discussion in Social Studies Education

Lloyd Rieber, University of Georgia; Todd Dinkelman, University of Georgia

This research explored the subjective perspectives held by social studies education students on core texts used in a pre-service course. The Q sorting technique found in Q methodology was used to promote disciplinary-grounded classroom discussions. A special software application was developed that afforded instant data collection and scoring. The evidence provided by the Q sort became the basis for subsequent classroom discussions. Results showed that the Q sort activity was effective in promoting class discussion. Also, three distinct student perspectives were found on the topic of post-modernism in social studies education.

The current political climate in the United States is characterized by heightened polarization and shifting, degraded political discourses. Our high schools need teachers who are prepared to foster active and positive civic engagement among their students (Kahne & Bowyer, 2017). Teacher education programs need innovative models for how to engage students with diverse views on topics within social studies education.

This research addresses this challenge in a unique way by integrating Q methodology into preservice social studies teacher education. Q methodology is a research methodology used in social science disciplines to investigate subjectivities about controversial social topics. Central to Q methodology is the Q sort, a special sorting activity found to effectively draw out a person's subjectivity on a given topic (Brown, 1993).

This project explores the use of Q methodology as a tool for pedagogical practice against the backdrop of an emerging interest in core practices in teacher education (Ball & Forzani, 2009; Grossman, 2018). This research investigates the extent to which an innovative, instructional application of Q methodology facilitated preservice teacher engagement with a particular aspect of disciplinary-grounded inquiry crucial to exploration of controversial public issues. An original software application -- free and available to all teachers -- has been developed and was used for this project as a way to foster consideration, then reasoned discussion, about controversial issues in social studies practice and research.

Social studies education scholarship has only begun to explore core practices in teacher education (e.g. Fogo, 2014, 2018; van Hover, 2018). Yet even at this early point in the field, core practices have been linked to the disciplined inquiry view of social studies (Fallace, 2017), and pitched as a productive frame for future research in social studies teacher education (Crocco & Livingston, 2017). Q sort pedagogy fills out the conceptual framework supporting this inquiry as an especially powerful way of bringing these bodies of literature together to explore and teach about students' subjectivities and stances with respect to topics prone to controversy and diverse perspectives.

Two research questions guided this research study:

1. What experiences do preservice social studies teachers have with Q sort pedagogy as a means to deepen their understanding and exploration of arguments about social studies teaching and learning?

2. What affordances and constraints does Q sort pedagogy offer in facilitating discussion-based seminars in preservice social studies teacher education?

The results of this study provided many insights about the use of the Q sort pedagogy in social studies teacher education. We have a better understanding about Q methodology's potential as a viable pedagogical tool for teachers to use when exploring subjective topics. Q sort pedagogy offers a promising approach to modeling for pre-service teacher inquiry and discussion strategies that they can take into their future social studies classrooms.

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A Study of Metacognitive Learning Strategies in Beginning Design Students

Matthew Powers, Clemson University; Sallie Hambright-Belue, Clemson University

Design learning is a lasting change to an individual's thinking and behavior that occurs when a person engages in problem-based learning within design studios. This study explores how beginning design students use metacognitive strategies to regulate the design learning process. Research questions include: how do design learners use metacognitive strategies to regulate their learning on studio projects? And, how does the use of metacognitive strategies change over time? The study uses two methods including the Metacognition Awareness Inventory and focus group interviews. Educators interested in metacognition and self-regulation will find value in the study's findings and discussion.

Design learning is a lasting change to an individual's thinking and behavior that occurs when a person engages in problem-based learning within design studios.[1] In design studios, learners use the process of design to address one or more design problems. Within this pedagogic context, design learners must employ learning strategies to remain actively engaged in the design learning process. Numerous researchers suggest that metacognition and the use of metacognitive strategies are critical for effective problem solving.[2] This study explores how design students acquire and use metacognitive learning strategies to help them regulate the design learning process and its central feature, the studio project.

Researchers often situate metacognitive learning strategies within the context of self-regulated learning.[3] Self-regulated learning (SRL) refers to the learning that occurs when an individual participates metacognitively, motivationally, and behaviorally in his or her own learning process.[4] In beginning design, the development of metacognition, SRL, and the use of learning strategies reflects what a student knows (and does not know) about the relationship between designing and learning. In this way, the awareness and use of strategies is a strong predictor of metacognition and SRL, which is itself a predictor of academic achievement.[5] This study looks at how beginning design students use metacognitive learning strategies on studio projects and how strategy-use changes over time.

Two primary research questions guide the study. First, how do design learners use metacognitive strategies to regulate their learning and performance on studio projects? Second, how does metacognition and the use of metacognitive strategies change over time? To answer these questions, the study uses two methods. The Metacognition Awareness Inventory (MAI) is used as the primary instrument for collecting data because it is recognized as a valid and reliable instrument for the study of metacognition in a variety of disciplines.6 The MAI was given to over 200 architecture and landscape architecture students at different points in time over two years. Additionally, focus group interviews with select respondents were used to supplement the MAI results and to probe deeper into strategy acquisition and development over time.

The study's findings were surprising and largely unexpected when compared to past studies using the MAI. For example, design students regularly reported decreases in the use of metacognitive strategies over time. Findings such as this example begin to suggest that the acquisition, use, and development of metacognition may vary greatly by discipline. Furthermore, the study's findings uncover other issues that while unique to design learning are likely to challenge how educators and researchers in other subject areas view the relationship between metacognition and pedagogy. As such, scholars and educators interested in metacognition and self-regulation will find value in the study's findings and subsequent discussion.

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An Exploration of How Games Impact Learner Self-Concept and Attitudes

Tiffiny Shockley, Queens University

In a 15-week semester, an exploratory research method was employed to capture qualitative data from students in a 200-level writing intensive undergraduate research methods course. Using backwards course design, all game and instructional activities were created with the end goal of student's mastering key concepts needed to develop a final research project. The results of this project are meant to inform pedagogical approaches that help to address student's perceived deficiencies associated with tasks or concepts presented in an undergraduate research methods course.

Teaching an undergraduate research methods course comes with unique challenges associated with learner self-concept and learner perceptions of the course content which impacts attitudes towards the course and course material. This project was prompted by experiences with previous undergraduate research methods courses taught in hopes of addressing the challenges associated with teaching a health research methods course to undergraduate students. This project is unique in that it focuses on the development of pedagogical practices using games in an undergraduate health research methods course specifically. The research question that this research aimed to address was: How does the use of games in a research methods course impact learner attitudes and learner self-concept?

In a 15-week semester, an exploratory research method was employed to capture qualitative data from students in a 200-level writing intensive undergraduate research methods course. Using backwards course design, all game and instructional activities were created with the end goal of students' mastering key concepts needed to develop a final research project using standard research methods in an undergraduate healthcare research methods course. Using this pretext, students wrote reflections before and after participating in the games and after the completion of exams. Data collected from reflection papers were used for addressing the research question.

This research project has a foundation rooted in several models. The first is Keller's (1987) ARCS model of motivation. The ARCS model can be applied to create relevant instruction focused on significant learning goals such as foundational knowledge and the application of information. The latter is the bottom layer of Bloom's taxonomy, which supports the locus of the intervention method which uses games to foster engagement and build foundational concept learning. Furthermore, the bottom layer of Bloom's taxonomy (1956) asserts that new skills must be practiced prior to mastery taking hold. During this project, students could provide game questions and other information to be included in the development of the games. This was done in hopes of addressing students' perceived deficiencies associated with tasks or concepts presented throughout the course. In addition, researchers Gareau & Guo (2009) asserted that games can help to improve student's confidence and promote learning engagement and overall satisfaction with course content therefore potentially impacting learner self-concept. The concept of andragogy as developed by Malcolm Knowles (1975) was also critical in the development of this project. Knowles posits that adults have a developed self-concept and are responsible for their own learning and endeavor to have partnerships with instructors in the learning process. Games, learner-centered activities, and incorporation of learner input align with these aspects of his theory. More recent research by Siko & Barbour (2014) suggests that having students participate in the development of games promotes learner achievement which may have an impact on learner self-concept.

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Adaptive Concept Inventory for Advancing Instruction in Electrical Engineering

Alejandro Espera, Virginia Tech; Jenith Banluta, Ateneo de Davao University; Nicole Pitterson, Virginia Tech; Rene Alexander Soto Perez, Purdue University

This research session presents a preliminary investigation into designing a concept inventory to assess incorrect prior knowledge in fundamental electric circuit concepts. Pedagogical innovations should align with instruments used for assessing learning abstract concepts. Our pilot data shows that, while instruction is important, there is a critical concern when instructors themselves develop misconceptions that can impact how students learn. Thus, there is a need to develop an adaptable instrument to pinpoint errors in understanding core engineering concepts among instructors and students. This work has implications for educators, curriculum designers, and researchers who seek to improve student learning of difficult concepts.

Introduction

Several assessment instruments have been designed in the past to check student's understanding of basic concepts (Evans et al., 2002; Pinarbaşi, Canpolat, Bayrakçeken, & Geban, 2006). Although core concepts do not necessarily change in time, innovations in accessing, capturing, and assessing mental models of the learners are needed to guarantee that pedagogical approaches align with the learners' current understanding (Bernhard & Carstensen, 2003; Carstensen & Bernhard, 2009; Zacharia, 2007). Moreover, early detection of errors in knowledge among students allows the instructors to be dynamic and proactive in strategizing instruction (Espera & Pitterson, 2019; N. Pitterson & Streveler, 2016). However, instructors presume that their own mental models are error-free. These presumptions need systematic validation to ensure that misconceptions do not propagate from learner to learner (National Research Council, 2000).

The purpose of this pilot research is to develop an adaptive concept inventory that can be used to examine prior knowledge and errors associated with it in the field of electrical engineering. This adaptive instrument is intended to continuously inform instructional approaches by methodically checking prior knowledge for acceptability, offering mutual benefit for both instructors and students as participants of the learning process (Villanueva, Brown, Pitterson, Hurwitz, & Sitomer, 2017).

Methods

We have developed a 20-item concept inventory to assess understanding in electrical circuits operating in transient DC state and steady AC state. These areas of knowledge are determined to be core concepts of electrical engineering across the undergraduate years. The concept test was tested by administering it via Qualtrics to senior undergraduate students and instructors in the electrical and electronics engineering departments at XXXX University, Philippines.

Results and Discussion

The testing of the instrument produced a substantial number of responses in proportion to the total population of students and faculty in these departments. All items were assigned equal weights for scoring. The extracted initial data were analyzed in terms of demographic data vs. score. Preliminary findings suggest that potential misconceptions are found in both faculty and undergraduate students in the said department. Both teaching faculty and students show weakness in concepts on the first-order time constant interaction and behavioral aspects of electrical devices in an AC electrical system. They demonstrate fair knowhow in capacitor and inductor behavior operating in AC or DC sources, and energy storage and delivery processes in DC electrical systems. To further substantiate the preliminary findings, we will conduct semi-structured interviews with the faculty and students who signed up for the next phase of this study. We then intend to look deeper into the perceptions of faculty and students on how they understand, learn, and apply their knowledge in electric circuits, mainly to verify their concept test performance. These perceptions will be used to further improve the design of the instrument, particularly in the use of technical and syntactical language to communicate with the learners' mental models and habits of mind (N. P. Pitterson, Perova-Mello, & Streveler, 2018), and advancing instructional methods through the use of data produced from this adaptive instrument (Huband, 2008).

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Amplifying Students Voices in the Classroom

Homero Murzi, Virginia Tech

Developing effective learning environments not only means to provide students with different experiences that will help them feel included and have a positive experience. Obtaining autonomy of the learning process is also really important for students. In order to own their learning, students also need to be engaged and motivated in the course. One way to engage them and help them obtain autonomy is by providing them an opportunity to have a say in the course. By having the opportunity to provide continuous feedback, students are more engaged and their overall performance is better.

Students are more inclined to be engaged if they are actively involved in course decision. Contemporary generations have demonstrated their need to be in environments where they can continuously receive and provide feedback. Having a voice in decision-making processes becomes really important for them. In this study, I evaluated the impact that providing feedback in a first-year engineering course had in students' perceptions of teaching and their general engagement with the course. An experiment was conducted with a section of 28 students in the control group and a section of 34 students in the experimental group. In the experimental group, students were motivated to provide weekly feedback about the course. Changes to the course on both sections were made based on the feedback.

Several data sources were used to measure the impact of the pedagogical intervention. For example, grades between the two sections were compared and inferential statistics were conducted. In addition, qualitative and quantitative data from the end-of-semester survey was used to also compare both courses.

Results suggest that students in the experimental group had a better performance in the course in general. They were able to perform better in every assignment in the class even when the materials and the lectures were the same for both groups. The experimental group also demonstrated a better perception of the course at the end of the semester quantitatively where most responses obtained a better score than the control group. In addition, open-ended comments from the experimental group praised the experience and the instructor and reinforced how motivated they were with the course. Anecdotally, the instructor has been teaching this course for many years and the experimental group has been the most engaged group of students he has had so far in this course.

In this presentation, I will share my main results and promote a discussion regarding strategies to amplify the students' voices in the classroom by providing a continuous feedback culture. Implications for policy and practice will also be discussed.

Analysis of a Course-Based Undergraduate Research Experience (CURE) in Genetics

Deborah Good, Virginia Tech; Angela Anderson, Virginia Tech

The use of Course-Based Undergraduate Research Experiences (CUREs) is a well-documented practice to provide authentic undergraduate research experiences. We will describe a genetics/genomics-based CURE that was linked to an ongoing large lecture course, such that while a small number of students (16) participated in bench and in silico research projects, up to~220 students in the concurrent large lecture course were exposed to the authentic research completed by their peers. We will present results from surveys on genetics/genomics knowledge gain for the entire large lecture course and on direct outcomes for students in the CURE.

As early as 1998, the Boyer Commission stated that "everyone at a university should be a discoverer, a learner" (Boyer Commission, 1998). Ten years later, Kuh described undergraduate research as a high-impact practice (Kuh, 2008). Yet with student numbers growing, and research budgets shrinking, how can we provide this type of experiential learning to all who want it? The use of Course-Based Undergraduate Research Experiences (CUREs) is a well-documented way to provide authentic research experiences to larger groups of students, compared to the "apprentice

model" which is based on single mentor-mentee undergraduate research projects (Wei & Woodin, 2011). As new CUREs are developed, it is important to both assess, and disseminate them so that they can be implemented.

Linking undergraduate research to courses can enhance coursework learning and/or bring research data into the classroom (Walkington, 2015). Therefore, we implemented and assessed a genetics/genomics CURE in 2019 that linked the curriculum of a large-lecture required discipline-specific course in the major to a smaller bench-research based CURE. In doing so, we brought the peer-generated research from the CURE directly into the large lecture course, exposing over 200 students per semester to authentic peer-generated results that could be evaluated in tandem with material learned in the large lecture classroom.

Student human subject volunteers were solicited from the large lecture course, and after consent, two bio-specimens, in the form of spit samples (one for laboratory processing and the other for 23andMeÂ® personalized DNA tests) were obtained. Student volunteers also took a pre- and post-surveys providing demographic, ancestry, and health information. Sixteen (16) undergraduates enrolled in the CURE and participated in the bench and in silico analyses of genomic and phenotype data from the students in the large lecture class. Each student selected a different gene to analyze and a different hypothesis to test. Students in the CURE also completed Human Subjects training, learned to purify genomic DNA from saliva samples, learned to do PCR-based genotyping on genomic DNA, and learned how to use in silico statistical analyses to analyze raw data obtained from volunteer's 23andMe® kits. The students completed a literature review on their gene of interest, a lab report of their research, a final paper on their findings, and each prepared a poster for presentation to the ~220 students in the spring large lecture course.

In addition to student artifacts collected during the course, two research papers have been submitted to undergraduate research journals by individual student participants. The course instructors will present data showing the effectiveness and reach of the CURE through a pre-post survey given in the large lecture course, which tested both genetics/genomics knowledge, and perceptions of genetic testing (Haga et al., 2013; Houfek, Soltis-Vaughan, Atwood, Reiser, & Schaefer, 2015; Jallinola & Aro, 1999). They will also present results from an exit survey of CURE participants on outcomes of participation. Outcomes of the CURE and lessons learned, as well as transferability of this CURE to other disciplines will be discussed.

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Blended Peer Mentoring: Benefits and Challenges for Peer Mentors

Amanda Rockinson-Szapkiw, University of Memphis; Jillian Wendt, University of the District of Columbia

The multi-site case study presented examines how and in what ways peer mentors' participation in a blended peer mentoring program, both training and mentoring peers, across two HBCUs

influenced their beliefs, interests, skills, and behaviors. Evidence from the semi-structured interviews, focus groups, and surveys demonstrated that mentors' experienced growth in self-efficacy, career interest, skills, and intent to persist. Salient themes that emerged included, 1) recognition, 2) functioning as a mentor, 3) developing other's orientation, 4) engaging in a sisterhood, and 5) developing competencies, Challenges were also experienced. The findings as well as the program development will be discussed in depth.

A disparity exists between the number of men and women who engage in science, technology, engineering, and math (STEM) degrees (National Science Foundation, 2019). Women remain underrepresented in STEM degrees, with women who are an ethnic or racial minority being even less represented (NSF, 2019). Lack of representation of White and minority women in STEM degrees and careers has been attributed to myriad reasons, however, research supports that a so-called "confidence gap", resulting from poor self-efficacy (Hill, et al., 2010).

Consequently, growing interest in improving self-efficacy of women to broaden participation have emerged, and engagement in mentoring relationships have been identified as central to the development of self-efficacy and, ultimately, persistence (Carlone & Johnson, 2007;). Therefore, the purpose of this study was to examine how and to what extent graduate-level minority women mentors' participation in a blended peer mentoring experience at two Historically Black Universities (HBCUs) influenced their STEM beliefs, interests, skills, and behaviors. The current study was grounded in Tinto's (1993; 2017) Institutional Departure Model and Social Cultural Career Theory (SCCT; Lent, Brown, & Hackett, 1994), which is grounded in Bandura's (2006) self-efficacy framework.

A multi-site case study approach was used to investigate these questions as the researchers desired to explore "how" or "why" questions within a real-world context across two cases or institutions (Yin, 2014). The six peer mentors were minority women enrolled in a STEM graduate programs. Data were collected from the mentors via a survey prior to participation in the program as well as in the final week of the program. The survey consisted of open-ended questions and a self-efficacy, STEM career interest (STEM-CIS; Kier, Blanchard, Osborne, & Albertt, 2014), and mentoring skills (PAMI; Cohen, 2003) measurements. Data was collected from interviews and focus groups also.

Descriptive statistics were calculated for the quantitative data collected from the surveys pre- to post-program. Increases were found. Coding cycles were then used to analyze the qualitative data. Analysis within the first cycle was open and inductive (Patton, 2002). Significant words, phrases, and passages were highlighted within the semi-structured interviews and open-ended survey questions. The researchers then used descriptive coding (Miles et al., 2014) to label each significant word, theme, and passage, which resulted in 32 codes. Within the second cycle, the codes were aggregated into 15 categories. Then, a deductive pattern coding process (Creswell, 2013) was used to merge the 15 categories into 6 broad themes.

The mentors believed that participation in the program increased their STEM self-efficacy from pre-training to post-training, which in turn, strengthened their mentorship skills and STEM career interest (per descriptive statistics). The thematic analysis of the data sources revealed that specific elements of the peer mentoring experience influenced the mentor's beliefs, interests, skills, and behaviors, including the following 5 themes: 1) recognition, 2) functioning as a mentor, 3) developing an other's orientation, 4) engaging in a sisterhood, and 5) developing competencies, which will all be discussed in depth during the presentation. The mentors also identified the sixth theme of challenges, including time-management, scheduling conflicts, etc.

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Decreasing Gender Disparity in Construction Management Higher Education Through Summer

Saeed Rokooei, Mississippi State University; George Ford, Mississippi State University

This paper briefly presents a study conducted in the Building Construction Science program at Mississippi State University. The main goal of this study was to explore the perceptions of female students on various factors before and after participating in a construction summer camp and compare those with their male fellows. A quantitative research method was used to form and conduct the study. Results indicate putting female high school students in a real - and interesting- construction environment can increase their interests in construction and choosing that as their major and career.

This study addresses the gender disparity in construction education and explores construction summer camp impacts on male and female students' perceptions. As a male-dominant area, construction management and engineering programs have been always affected by the low number of female students. Gender disparity in engineering and construction higher education programs has been a constant focal point for educators and administrators to investigate, analyze, and propose activities, plans, and programs in order to improve female students' enrollment rates. According to 2018 ASEE Profiles of Engineering and Engineering Technology Colleges report, female students obtained 21.9 % of bachelor's degrees, 26.7% of master's degrees and 23.6% of doctoral degrees in 2018. This shows a slim growth from 2017 in three levels as well as the ascending trend of growth in all levels for more than a decade. However, there is a wide range of percentages for different engineering programs. Civil engineering - including its concentrations such as construction engineering - has the fourth place in bachelor's degrees awarded among engineering disciplines after mechanical, computer, and electrical engineering. However, the percentage of civil engineering bachelor's degrees awarded to women among all engineering disciplines falls down to the 11th place. A similar situation exists in master's and Ph.D. programs. Another issue that exacerbates the gender disparity is the percentage of female professionals in the industry. Although the female enrolment rate in engineering has reached to about 22%, the female professional body represents only 13% of the whole community. This ratio is even lower in civil/ construction area. While female students' retainage in construction programs is not significantly different from their male counterparts', entering construction programs is a determinant. Research shows factors such as the lack of previous related experience, lack of excitement in the content or presentation of the course, and teaching methods affect female students' perceptions which results in a low percentage of female students in construction. One effective way to help pass this hurdle is having a construction summer camp and putting female students in a mockup environment in which they encounter real and varied aspects of the construction field through a "doing and learning" process. For the first time, the Building Construction Science (BCS) program at Mississippi State University hosted a one-week summer camp with the collaboration of the Mississippi Construction Education Foundation in June 2019. Participants were introduced basics of construction main subjects and given simple instructions on different building elements and then asked to build tiny cabins. This study reports on different steps of the construction process and illustrates the outcomes of a summer camp exit survey and similarities and differences between female and male students' perceptions. Results also indicate that there was a significant difference between Pre and Post situations in choosing construction as the college major as well as choosing the BCS program in the female student group.

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Design Creativity and Project-Based Learning in Higher Education

Larry McCalla, University of Georgia

A mixed methods research design was used to explore how the creative design ability of undergraduate student designers developed over the course of a 15-week semester. Surveys, design journal entries, and interviews were used to gather data from the 25 student participants as they identified, designed, and delivered the individual projects that focused their work in the course. Several contextual factors characterized the development of students' design creativity, and the most prominent were (a) tool exploration, (b) prototyping, (d) community, (d) motivation, and (e) creative agency. Research methodology, findings, and recommendations for future course design and research will be presented.

"A mixed methods research design was used to explore how the creative design ability of undergraduate student designers was shaped over the course of a 15-week semester. An extensive review of the creativity and design literature generated a coding scheme that was integrated into an activity system analysis (Engeström, 2014; Jonassen, 2002) of the project-based learning course in this study. Surveys, design journal entries, and interviews gathered data from the 25 student participants as they conducted course work. A pre/post survey (Blizzard et al., 2015) was used to measure changes in participants' design thinking traits during the semester.

This research identified five prominent contextual factors that characterized the development of students' design creativity, which were the following: (a) tool exploration, (b) prototyping, (d) community, (d) motivation, and (e) creative agency. These factors were reciprocal with each other as they expanded, and a sequential timing was found in the establishment of participant motivation and the growth of the course community.

Journal and interview data suggested granting participants a high degree of autonomy in their course work facilitated their motivation and engagement. Without strong motivation, it is doubtful participants would have engaged the varied design ambiguities of project work as extensively and persistently as they did. It appeared that establishing motivation early in the course was a key to the other gains they experienced as a result of their sustained efforts.

Once participants settled on project topics, the remaining four factors emerged as a cluster of actions and affect. Tool exploration involved participants identifying design tools and making choices about which ones to use and how to use them. This action was closely bound with prototyping action, in which participants made their abstract design ideas concrete to share them with peers and the course instructor. The presenting and sharing actions involved with tool exploration and prototyping were regular in-class occurrences and facilitated growth of the course community, which emerged as one of the most influential factors that shaped participants' design creativity. The course community emerged as a design tool that participants used to iterate and improve their design ideas. In this way, participants' design methodologies expanded from individual to collective orientations as a result of their course experience.

Creative agency (Karwowski & Beghetto, 2018; Royalty, Oishi, & Roth, 2014) was the affective outcome participants reported most frequently and was also linked with the most prominent actions (i.e., tool exploration, prototyping, and community interactions) found in course activity. Several participants explained that in addition to feeling more creative as individuals, they appreciated creativity in others because they used peer and instructor feedback to improve their own design ideas. In this way, participants' development of creative agency expanded from individual to collective orientations. A set of practical guidelines for project-based instruction and suggestions for the most productive future research will be also be presented.

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Developing a Mentorship Program for Graduate Students Involved in REUs/REEUs

Caitlin Cridland, Virginia Tech

This presentation discusses graduate mentorship training within a summer STEM undergraduate research program (an REEU) at a public research university. We found that graduate students were largely responsible for the day-to-day mentoring and training of undergraduate researchers within a lab, even though most graduate students had received little to no formal mentorship training. To address this need, we developed a structured mentorship training program for graduate students involved with our REEU. Here, we will present how the mentorship training program was designed and implemented, the findings from its inaugural year, and applications of this program in other undergraduate research settings.

Mentoring promotes successful student outcomes and is a major contributor to scientist identity development. STEM graduate students are often part of mentoring triads, serving as mentees to their faculty advisors and as mentors to undergraduate researchers within the lab. A structured mentorship program for graduate students involved in a summer REEU was implemented, aimed at addressing graduate students' desire for formal mentorship training. This program was born as a result of two years of data collection from faculty, graduate students and undergraduates involved in a summer REEU program. Faculty identified potential graduate student mentors, who were then contacted and invited to participate. Prior to the start of the REEU, graduate students attended a half-day orientation and workshop. In these events, graduate students were introduced to the mentorship program, program structure and professional development topics addressed throughout the summer program. The professional development discussed with graduate students included mentor expectations, fostering mentoring relationships, scientific authorship, and developing effective communication skills. Throughout the summer, we provided weekly discussion points, reflection prompts, and professional development activities to engage graduate students in formal mentorship training. Here, we will present how the program was designed and implemented, the findings from its inaugural year, and applications of this program in other undergraduate research settings.

Over three summers, we examined the trickle-down effect of mentoring from faculty mentor to graduate student to undergraduate researcher in a summer STEM undergraduate research program (an REEU) at a large, public research university. We focused on: the role of faculty mentors and graduate students as valves in trickle-down mentoring, and the reliance on ad-hoc mentoring within the triads. This case study looked to address the need to teach and train faculty and graduate students on how to mentor effectively as part of their professional development using a qualitative lens. The data was collected from 16 faculty using Qualtrics before the 10-week summer research program began and at its conclusion. Data from 12 graduate students were also collected after the program ended using Qualtrics. Data from 16 undergraduate researchers were collected through individual semi-structured interviews in a pre/post manner similar to that of faculty. A quasi-experimental research design was employed, using the population that participated in the REEU (Privitera and Ahlgrim-Delzell, 2018). Another strength of concurrently collecting data was to identify potential solutions and resources participants suggested (Creswell and Clark, 2007). The qualitative data provided more opportunities for participants to respond and share their experiences, perceptions, and thoughts on mentoring. Institutional review board approval was obtained, and informed consent was obtained for each participant (e.g. faculty mentor, graduate student, and undergraduate researcher) before the summer research program began. We found that the majority of faculty taking on undergraduate researchers participated in open mentoring triads, leaving the day-to-day tasks to graduate students. Although faculty communicated with graduate students about the lab hosting an undergraduate researcher, graduate students were given little to no mentorship training. We also found that trickle-down mentoring and an ad-hoc mentoring approach were prevalent within triads.

Do You CQ?: How Cultural Intelligence Can Inform Instruction Design

Andrew Milacci, Liberty University; David Towles, Liberty University; Fred Milacci, Liberty University

In our increasingly globalized world, study abroad offers a way for students to improve language skills while growing in cultural intelligence (CQ). Despite the growing body of research about travel and CQ change, participant perceptions of their own CQ growth has received less attention. Thus, we implemented a mixed-methods study in which we administered the CQ Scale (CQS) to three study-abroad cohorts (n=46) and conducted semi-structured interviews of students (n=16) and host families (n=13) using a transcendental phenomenological approach. This presentation will highlight how participant descriptions of CQ growth can inform instructional design in diverse learning contexts.

Literature Review: The immense value of CQ is widely accepted (Harper 2018), especially since it understands cultural intelligence as a "framework of multiple loci of intelligence [that goes] beyond mere cognitive abilities" (Cultural Intelligence Center). While an individual's CQ may grow in myriad contexts, research has shown that travel consistently has a transformative effect on travelers of all types (Haygood, 2016; Goldberd & Coufal, 2009; Krohn Ramón, 2013; Kjelgren, Hole, & Johnson, 2012). Given the growing importance of cultural intelligence (Harper, 2018), in particular in today's highly competitive job market (Livermore & Van Dyne, 2015), few studies have given voice to students to speak for themselves about what they thought were the catalysts for their increased cultural awareness.

Methodology: Our study seeks to understand how participants describe and perceive their own CQ growth experience. To measure participants' CQ growth, we administered the internationally normed CQS (Harper, 2018) at the beginning and end of the two-month study abroad trip to Guatemala across three cohorts of summer travelers, one cohort per year. We analyzed the responses to uncover areas of growth, trends, and other phenomena descriptively, as we were not interested in statistical significance of any variable. Then, we used the data to select participants to interview; concomitantly, this data informed our interviews with those participants. In total, we conducted 16 semi-structured interviews, across two cohorts/years (Magnusson & Marecek, 2015), that were recorded, transcribed, and analyzed using a transcendental phenomenological approach (Moustakas, 1994). For each year's cohort, we continued interviewing until attaining data saturation (Patton 2015). Finally, we conducted semi-structured interviews with the Guatemalan native families that hosted our study-abroad students.

Analysis and Findings: Our findings show that most participants experience at least some incremental growth of CQ. The interview data, however, offers a more complete picture of the participant experience: a student's perception of her own language proficiency factors into CQ growth. As Krashen's (1982) affective filter sheds light on how student anxiety might limit second language acquisition, students who have a low self-perception of proficiency tend to over-monitor their own language use, which then leads to decreasing interaction with the local culture. Nevertheless, students also demonstrate a desire to, and do, overcome negative perceptions of proficiency, which often results in growth in CQ. Other findings include a shift from extrinsic to intrinsic motivations for engaging other cultures, as well as using more humanizing, rather than stereotyping, language when describing the native Guatemalan population.

Conclusions/Discussion: Where many studies are unable to show a lasting change in CQ after studying abroad, our study not only bears out that students on this trip tend to exhibit culturally intelligent behavior and perspectives after returning home, but also that their CQ growth is related to their perceived linguistic growth. Thus, foreign language teachers and Directors of Study Abroad programs alike, should directly address, and dispel, feelings of inadequacy that could hinder students from engaging others in culturally diverse settings. In fact, teachers in general would benefit from understanding the core principles of cultural intelligence.

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Examining Creativity Across Disciplines: A Qualitative Analysis

Tinukwa Boulder, Pennsylvania State University; Kristen McAuley, Pennsylvania State University; Ahmed Yousof, American Public University System

This session aims to highlight common themes of 'creativity' across disciplines and describe ways in which our respondents apply creativity in their unique pedagogies. Attendees will leave the session with a defined vision of creativity, an understanding of similarities in creativity across disciplines, and a renewed drive to bring creativity to their own pedagogical practices.

Creativity is an abstract concept. Richardson, Henriksen and the deep-play research group (2018) examined creativity from multiple perspectives, "neuroscience to design perspectives or cultural dynamics, as well as social and educational contexts that support creativity" (p. 432). They found a lack of consensus in the definition of creativity and an unwillingness to propose a singular definition of the construct. For this session, the presenters will review the data collected from faculty members across a diverse set of academic disciplines to determine definitions of creativity, application of creativity in the classroom, and assessment of creativity in teaching and learning.

What is creativity? Through a content analysis, the presenters identified common themes in the definitions of the concept in a variety of academic disciplines. In previous research, creativity was typically associated with common terms such as authenticity, originality, and applicability (Richardson et al., 2018). Through our research, we've seen that most respondents tend to struggle to define the term, but there is some commonality in their definitions. Many respondents state that creativity is tied to ideas around being original, taking risks, innovating, and accepting failure. Plucker argued that creativity is "transdisciplinary" and essential for progress and growth in any field" (Root-Bernstein and Root-Bernstein (1999) in Richardson et al., 2018, p. 434). The challenge for educators is determining how to foster creativity in the classroom? Through our study, we seek to understand ways that creativity is fostered across disciplines and identify any common themes and pedagogical applications.

Respondents gave examples as to how they are creative in their teaching and student learning activities. Reasons for being creative in the classroom focus on student attention and engagement. Some difficulties with creativity lie in getting students to "buy-into" creative assignments. Many respondents noted that assessment is also difficult and many, therefore, rely on objective measurements, such as rubrics.

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From Chaos to Personal Transformation: Lived Experiences of Ungraded Students

Katherine Greenberg, University of Tennessee; Brian Sohn Carson Newman University; Lauren Moret, Independent Researcher

Our presentation focuses on the teaching and learning experiences of students and teacher in an ungraded Masters of Educational Psychology course. We will share findings from a study of the lived experiences of the participants in this synchronous, online course taught without grades, but with continuous self-reflection writings, online conversations with the instructor, and small group "unassigned" projects. We will offer an overview of research related to the pros and cons of grading in higher education and our recommendations regarding ungraded courses.

Purpose/Objectives of Study

The purpose of this study is to extend our research on phenomenological approaches to teaching and learning in higher education (Greenberg, Sohn, Greenberg, Pollio, Thomas, & Smith, 2019) to online courses. We focus on a synchronous, online Master's graduate course that was "ungraded" (Flaherty, 2019) yet included continuous self-reflection, autonomous small groups with "unassigned" projects, and development of a collaborative learning community. As phenomenologists, we seek to know what it was like for participants to experience such a course.

Review of Literature

Our research on lived experiences as related to alternatives to traditional grades draws on a growing body of research in two fields: contemplative education (Owen-Smith, 2018) and transformative learning (Taylor, Cranton, & Associates, 2012), which emphasize the importance of reflection. We agree with Owen-Smith that the primary goal of learning is to deepen "attention and insight" and to reflect "on the experiential" (pp. 1-2). Indeed, reflection enables one to enrich personal awareness (Haidt, 2012).

Additional research on the pros and cons of grading in higher education supports the need for more in-depth studies to determine what is happening as teachers and students experiment with approaches to ungrading. Schinske and Tanner (2017) completed an extensive review of literature highlighting the problems with grading. They discuss many facets of grading and conclude that grading may distract instructors from innovating their practice to deepen learning (para. 32). But a gap exists in the literature related to higher education. We seek to know more about how a phenomenological approach that eschews traditional grades and encourages contemplation influences the meanings of reflection for participants.

Methodology

Using Merleau-Ponty (1945/1962) as a guide, we found support for our research findings and developed a phenomenological approach to looking at the teaching and learning going on within this online Master's course environment. We used the phenomenological principles of: cultivating a phenomenological attitude, describing personal experience, adopting an egalitarian stance, being open to transcending course content, existential phenomenological principles (Greenberg et al., 2019) to recognize, understand, and make sense of the lived experiences of students and instructor. Participants were recruited from students enrolled in a required graduate course as part of an Educational Psychology Master's program.

Data Analysis

We utilized a phenomenological approach developed at The University of Tennessee, Knoxville (Sohn et al., 2017) to determine what stood out to students and their teacher as they engaged in written self-reflections immediately after each large group session and at the conclusion of the course. This allowed us to observe changes as the course progressed. This research approach allowed us to see changes over time as they overcame the initial culture shock of upgrading.

Results

We are in the process of analyzing data and do not yet have results to share. By the time the annual meeting commences, we will share findings of the lived experiences of student and instructor participants.

Conclusion

We hope this research used alongside that of other researchers and practitioners, will challenge norms of grading and encourage meaningful outlets for self-reflection.

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In-Person, Embedded, & Online: Designing a Pedagogically-Based Undergraduate Research Program

Amanda MacDonald, Virginia Tech; Anne M. Brown, Virginia Tech

High impact practices like undergraduate research and CUREs are excellent experiences for student learning and workforce development. Students from all fields can engage in research, albeit training and approach is varied. In 2014, library faculty at Virginia Tech, piloted the Advanced Research Skills Program (ARS) to help faculty mentors and lab leaders train their students in research literacy. Programmatic challenges were identified and approaches to excite students to enroll needed to be developed. In this session, the presenters will cover three pedagogical approaches (teaching in-person, online, hybrid) for training and tracking undergraduates in research literacy and outlooks for the future.

High impact practices like undergraduate research have received increasing attention at universities across the country. While undergraduate research looks different across disciplines, students from all fields are engaging in research experiences. However, the types of training students receive to prepare them for conducting research is varied. In 2014, library faculty at Virginia Tech, piloted the Advanced Research Skills Program (ARS) to help faculty mentors and lab leaders train their students for presenting at undergraduate research symposium. ARS was initially designed as an in-person workshop series. 22 students completed the pilot ARS program, with the number of students completing ARS slowly, but steadily, rising in 2015 (46 completed), 2016 (53 completed), and 2017 (56 completed). ARS quickly became one of the most successful library co-curricular programs. However, once a new course entered the curriculum, the completion numbers of ARS significantly dropped (10 completed) by spring 2018.

An interesting dilemma arose - while the initial response might be that the program is no longer needed based on 2018 completion, faculty were receiving more requests to provide instruction on skills covered in the program and more students than ever were applying to present at the university-wide research symposium and requesting workshops and trainings. New ways and enticements to excite students to enroll in this beneficial program needed to be developed synergistically with campus partners involved in the conversation. Training in research practices is of interest to all students, and with the university wanting more students to engage in undergraduate research and course-embedded undergraduate research experiences (CUREs), training options, backed in pedagogical best practices is essential.

A need and opportunity had been identified to support research literacy, and three decisions were made that have elevated success of ARS and provided pedagogically backed ramps for engaging in research literacy by students and faculty. First, the content from the workshops needed to be accessible to all students regardless of their schedules and type of undergraduate research experience. This meant the program needed to be reconsidered from being offered just in-person to embedded within labs as formal training, courses like First Year Experience seminars, and online as a co-curricular workshop series. Second, if students are completing ARS training outside of labs or courses, then there needs to be an incentive for them. Lastly, for the training opportunities to be successful with high student enrollment, faculty buy-in needed to be obtained.

In this session, the presenters will cover three pedagogical approaches (teaching in-person, online, hybrid) for preparing students to engage in undergraduate research and be trained in research literacy. Creating programming that students will participate in is challenging; however, initial results show changes made to ARS have been wildly successful, yielding a 79.6% increase in completion rates. Attendees will explore pedagogical approaches alongside curricular content for incentivizing participation and training students via departmental and university-wide programming and materials that are meaningful for students and sustainable for faculty. All content covered in this session are openly accessible, making the framework and program a model for other universities.

Interdisciplinary Large-Scale Assessment: A Balancing Act

James Dubinsky, Virginia Tech; Steve Matuszak, Virginia Tech; Jane Wemhoener, Virginia Tech; Serena Frost, Virginia Tech

Our presentation focuses on the results of a pilot study that assessed the communication skills (both oral and written) of an entire graduating class of seniors at a large research university's school of business. Our interdisciplinary team of researchers will discuss the study's methodology, data analysis, and results, which are helping us shape a four-to-five-year longitudinal study. In so doing, we will make a case for how our work could serve as a model that brings to bear equal emphases, regarding accountability, for students, faculty, and the organizations that hire our graduates.

Recently LinkedIn and Monster analyzed nearly 1 million job listings. Their results offer statistical evidence to document the high value employers place upon communication and analytical skills (Umoh, 2018). This evidence echoes findings from similar surveys conducted over the past two decades (Jones & Abraham, 2009; Stevens, 2005), as well as those in a recently published article in the Journal of Education for Business (Lim, Y.-M., Lee, T. H., Yap, C. S., and Ling, C. C., 2016).

Despite this premium placed on oral and written communication skills, employers frequently claim that students graduating from business schools are not competent communicators. All of these students enter college with widely differing communication skills. A solution often adopted by business schools to address communication competency is a single course (which often focuses either on writing or oral communication skills, not both). However, this "one-size-fits-all," single course approach struggles to address the variability of skills among students. Further, developing competence is not only about learning basic skills but also about practicing those skills with progressive, expert feedback. Standalone courses struggle to offer sufficient practice. As a result, students' communication skills are often not improved.

Developing communication and analytical skills employers desire is a complex process requiring a systematic approach. Our presentation will focus on the first steps being taken by a school of business at a large, rural, research university. These steps involved putting together a small team of faculty with communication expertise and conducting a pilot project that assessed the communication skills (both oral and written) of an entire graduating class of seniors.

We place our work within a broader historical and disciplinary record of scholarship dedicated to large-scale assessment, beginning with some of the earliest researchers (Diederich, 1974), and taking into account work on portfolio assessment in the 1990s (Popham, 1999; White, 1994) that led to the development of what has become known as a "flexible and organic approach" (Broad, et al., 2008; Debelius, 2016). This approach has several goals, not the least of which is to focus on writing-to-demonstrate-disciplinary knowledge, as well as general writing competencies associated with business school graduates.

Our interdisciplinary team of researchers will discuss the study's methodology, data analysis, and results, which are helping us shape a four-to-five-year longitudinal study. In so doing, we will make a case for how our work could serve as a model that brings to bear equal emphases, regarding accountability, for students, faculty, and the organizations that hire our graduates."

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Motivation and Engagement in a Veterinary Clinical Skills Course

Najla Mouchrek, Virginia Tech

Developmental challenges in emerging adulthood call for a process of empowerment that supports college students in building capacities toward adult life. This study is part of a doctoral dissertation, which proposed an innovative model of empowerment in the transition to adulthood. A survey investigated empowering experiences in college among Virginia Tech students (N= 255). The findings support the theoretical model, confirming the salience and interdependence of the empowerment constructs. Qualitative findings offered insights about the role of mentors and community in relation to empowerment. Preliminary evidence suggests relevant connections among empowerment constructs and definition of life goals and career identity.

During the college years, students navigate the complex transition from adolescence to adulthood, and prepare to define their pathways in life, assume adult roles and commitments, and develop an active and meaningful integration into society. Key developmental processes in this period require empowerment and abilities for self-directed decision-making (Arnett, 2014; Baxter-Magolda, 2015; Schwartz et al, 2005). Promoting empowerment is essential and has significant benefits for young people, including healthy identity experimentation, gains in confidence, critical

awareness, self-efficacy and self-esteem (Chinman & Linney, 1998; Cargo et al, 2003; Jennings et al, 2006; Zimmerman, 1995). Higher Education should provide opportunities for students to empower themselves and develop the competencies, attitudes, and maturity to make a successful transition to adulthood.

This empirical study was developed as part of a doctoral dissertation (Mouchrek, 2019) and followed a process of theory construction, which proposed that Empowerment in the Transition to Adulthood is a multidimensional construct formed by an interplay of both internal and external dimensions (personal agency, sense of purpose, mentoring, and engagement in community). The goals of the study were: (a) measure and establish relationships between constructs of the theoretical model of empowerment for college students; (b) identify and characterize empowering experiences lived by them.

Data collection consisted of an online survey administered to 255 undergraduate students from a comprehensive land-grant research university in the United States (Virginia Tech), in the Fall of 2017. Data analysis consisted of both quantitative and qualitative. The four interplaying facets in the theoretical model of empowerment generated the main constructs in the instrument. Two other constructs (life goals and career identity status) were included for exploratory analysis.

The findings supported the theoretical model through a structural equation modeling that confirmed the salience and interdependence of the four main empowerment constructs, and the link between empowering experiences and these catalysts. There were high positive correlations between personal agency and sense of purpose ($r = .67$), sense of purpose and community ideals (.60). Significant association were found between personal agency and community ideals (.45), pay/status orientation and foreclosure in career identity (.33), career identity achievement and sense of purpose (.28).

Additionally, qualitative findings about the role of mentors and community offer insight about their connections with empowerment. Mentors influence personal development for college students mainly through support, inspiration, and challenge; while communities influence their development by offering support, belonging, exposure to new experiences, and opportunities to learn skills. The findings also suggest that empowerment processes may influence the way emerging adults deal with definition of life goals and with the career exploration process.

Universities have great potential to constitute positive environments for students' growth and empowerment. It matters to capture students' lived experiences during these years and understand what makes an empowering experience in formal and informal learning settings in college.

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Motivation and Engagement in a Veterinary Clinical Skills Course

Meghan Byrnes, Virginia Tech; Sachiel Mondesir, Virginia Tech

The acquisition and mastery of clinical skills are essential components of veterinary medical education. Clinical skill proficiency allows veterinarians to be productive and effective in their chosen career. Efforts to improve clinical skill teaching must be made in order to create more uniform educational standards such as those utilized in human medical education. In this study, we utilized the MUSIC® Model of Motivation and an engagement questionnaire to determine the relationship between motivation and engagement in a veterinary clinical skills course. Using a mixed-method approach, we identified implementable strategies to improve student motivation and engagement within this course.

The acquisition and mastery of clinical skills are vital components of veterinary medical education, as set forth by the Association of American Veterinary Medical Colleges (AAVMC, 2018). The AAVMC describes clinical skill proficiency as a core competency that enables veterinarians to be confident and productive immediately upon graduating from a veterinary college. Efforts should be made to improve teaching and assessing clinical skills in order to create more uniform educational standards such as those utilized in human medical education (Rosch et al., 2014).

Studies show that the relationship between motivation and engagement can have a positive impact on learning outcomes (Robinson et al., 2017; Schwinger & Stiensmeier-Pelster, 2012; Wolters, 2003) and so we sought to determine the relationship between motivational perceptions and engagement within a veterinary clinical skills course. Knowing this information allows instructors to implement strategies that could improve student perceptions and engagement with the goal of improving learning outcomes.

METHOD

Participants: Forty-seven students from a second-year veterinary class volunteered to take part in this study.

Data Collection: Data collection consisted of a Qualtrics questionnaire and two observation periods. The study was approved by the Institutional Review Board of the authors' institution.

MUSIC® Model of Academic Motivation Inventory. The MUSIC Inventory (Jones, 2017) included 26 items, with four to six items pertaining to each factor. All items were on a six-point Likert-scale ranging from 1 (Strongly Disagree) to 6 (Strongly Agree).

Engagement Questionnaire. The 17-item engagement questionnaire included items relating to emotional, cognitive, and behavioral aspects of engagement and was adapted from Hart, Stewart, & Jimerson (2011).

ANALYSIS

We computed Pearson's correlation coefficients using SPSS (version 24) and analyzed observation data utilizing an approach based on grounded theory (Glaser & Strauss, 1967; Strauss & Corbin, 1998).

Results and Discussion: Table 1 provides descriptive statistics and Table 2 includes correlations amongst MUSIC and engagement. In general, many of the relationships amongst the measured variables were moderate or strong, indicating that instructors could utilize these findings to implement specific strategies that could improve student engagement within a similar course. We determined that the relationship that emotional and cognitive engagement share with success (with success being the lowest-rated MUSIC factor) offers an opportunity for implementing strategies that can improve success perceptions in order to improve student engagement. Similarly, improving interest perceptions could improve emotional engagement in the course. Additionally, behavioral engagement correlated highest with usefulness, so if it appeared that students were not behaviorally engaging during the teaching sessions, efforts could be made to improve behavioral engagement by implementing strategies to improve the usefulness factor from the MUSIC model.

Discussion: In this study, we established that there is a relationship between motivation and engagement when teaching clinical skills to veterinary students. We were able to identify the components of the MUSIC model that

could be improved in order to enhance certain levels of engagement. In the full paper, we offer guidelines that could be used to improve student engagement in this course and clinical skill courses at other veterinary colleges.

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Participatory Design Workshops for More Student-Centered Course Development

Jeff Joiner, Virginia Tech; Najla Mouchrek, Virginia Tech

"Design Thinking in the Classroom: Applied Design Processes to Enhance Course Development and Student Engagement," was a series of participatory workshops co-developed by faculty in the Center for Excellence in Teaching and Learning, the School of Visual Arts and the Human Centered Design Ph.D. program at Virginia Tech. The workshops engaged teams of faculty and students in a series of collaborative, design-based exercises focused on the phases of Discovery, Interpretation, Ideation, Experimentation and Evolution to gain insights into questions such as "How might we design classes to be more engaging and student-centered?"

"Design Thinking in the Classroom: Applied Design Processes to Enhance Course Development and Student Engagement," was a two-part collaborative workshop in 2018 co-developed by the Center for Excellence in Teaching and Learning, the School of Visual Arts and the Human Centered Design Ph.D. program at Virginia Tech. Working with faculty and students from a variety of disciplines, the workshops introduced participants to design thinking, an integrative and collaborative approach with a solution-focused mindset, which tackles ill-defined systemic problems by applying a systemic and human centered approach, focusing on synthesis, and engaging in continuous evaluation and reflection (Buchanan,1992; Cassim, 2013; Owen, 2005).

The design process has been studied by many researchers over the last several decades as a springboard to innovation for companies and their clients. In Phase 1, Discovery, designers work to understand the challenge(s) at hand and perform research to gather information and inspiration. Phase 2, Interpretation, involves searching for meaning and creating stories to define challenges and opportunities. In Phase 3, Ideation, designers explore possibilities, generate and refine ideas to address the challenge. In Phase 4, Experimentation, some of these ideas evolve to be tested as prototypes and pilot applications. In Phase 5, Evolution, designers evaluate the applications, track learning and impact, and move forward or reiterate (RCS&IDEO, 2012).

This design process has also been used in K-12 and higher education (Davis et al, 1997; Morris & Warman, 2014) in different capacities, but to our knowledge has not been tested as a method for creating the courses themselves. Furthermore, we found that course design is traditionally created solely by faculty without much, if any, direct input from students. As empathy is a key component of design thinking, we recognized an opportunity to uncover insights

into how course design might be evolved by inviting students to collaborate directly with faculty, and formulated our main research question: "How can we use design methods as tools to engage faculty and students together to reshape how faculty approach curriculum development, thereby improving student engagement?"

To kick off the workshop, we engaged the participants in a discussion focused on defining particular challenges, such as:

- How might we design classes to be more engaging / student-centered?
- How might we create a culture of collaboration in the classroom?
- How might we organize course content to help students build relevance within and across courses?

In teams of 4, participants engaged in ideation sessions, generated ideas and proposed solutions. The workshops also included discussions on ways to incorporate design mindsets and methods to enhance existing innovative learning experiences.

Preliminary results from discussions and surveys show that the methods used were productive and enjoyed by participants, who appreciated the opportunity to work together on creative activities that promote collaboration, reflection, and applied problem solving.

In summer 2019, based on the knowledge gained, we collaborated with Dr. Elham Morshedzadeh, assistant professor of Industrial Design to create "Design Methods for Student Learning", a new Faculty Learning Community sponsored by the Center for Excellence in Teaching and Learning at Virginia Tech.

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Predicting Distance Doctoral Persistence: A Model of Integration and Agency

Amanda Rockinson-Szapkiw, University of Memphis

This correlational study examined the associations among the predictor variables of distance doctoral students' agency (e.g., self-regulation, self-direction, self-efficacy) and integration with the criterion variable of persistence. A nonprobability convenience sampling method was used to elicit the participation of students enrolled in online Doctorate of Education and Doctorate of Philosophy in Education programs learners across three private and public universities. In Fall 2018, students completed a survey. Their enrollment data for were then collected for proceeding enrollment as a measure of persistence. Data analyzed using a logistical regression analysis demonstrated that agency and integration predicted persistence.

Distance doctoral persistence is a learner's progression toward the completion of his or her distance education doctoral degree, as evidenced by enrollment from semester-to-semester in courses, despite challenges (Bair, 1999, p. 8; Pascarella & Terenzini, 2005). Distance, doctoral persistence is an ongoing interest of higher education institutions and a focus of research, given that doctoral persistence rates, residential and distance, hover around 50% (Cassuto, 2013; Council of Graduate Schools, 2008; Ivankova & Stick, 2007).

For decades, theories and theoretical frameworks have been developed and tested to explain the complex factors associated with persistence of learners across modalities and at all levels. Foundational to most persistence research is Tinto's student integration model (1975, 1993). Tinto's model was initially developed for residential undergraduate students, and later expanded for doctoral learners (1993). Tinto's may be the most cited, widely used, and expanded upon models of student persistence (Kember, 1989; Simpson, 2003), as they have also been applied and adapted to better understand distance education learner and doctoral learner persistence (Holmes & Rockinson-Szapkiw, 2019; Rovai, 2003; Rockinson-Szpakiw, Spaulding, & Spaulding, 2016; Wao & Onwuegbuzie, 2011; Wyman, 2012).

Rovai (2003) synthesized traditional persistence theories with the empirical distance education literature to develop a persistence model for online, adult learner persistence. He purported that online learners' persistence can be understood as an amalgamation of factors identified by traditional theories (e.g., Tinto, 1975, 1987, 1993) in combination with the needs and skills required for online learning (Rowntree, 1995; Cole, 2000; Workman & Stenard, 1996) and pedagogy which supports metacognitive learning strategies such as self-regulation and self-directedness (Grow, 1996). Rovai's composite persistence model, with consideration of doctoral persistence literature, does however provide a fertile ground for the development and testing of an explanatory model for understanding distance, doctoral persistence, including integration and human agency.

A nonprobability convenience sampling method was used to elicit the participation of students enrolled in online Doctorate of Education and Doctorate of Philosophy in Education programs learners across three private and public universities. In Fall 2018, students completed a survey. Their enrollment data for were then collected for proceeding enrollment as a measure of persistence. Data analyzed using a logistical regression analysis.

Results of the logistic regression analysis demonstrated that the entire model containing all the variables significantly predicted whether or not distance doctoral students would persist, Ï‡2 = (6, N =116) = 392.440, p>.001. According to Cox and Snell (1989) R Square and Nagelkerke R Square, respectively, the model accounted for between 54.9% and 78.3% of the variation in online non-traditional learner persistence. The model correctly classified 94% of the cases.

Short Bursts: Quick Pedagogy for In-Class Team-Skill Development

Eli Jamison, Virginia Tech; Kimberly Carlson, Virginia Tech; Linda Tegarden, Virginia Tech

The purpose of this study was to test if it is possible to increase positive outcomes in student skill development and satisfaction by providing several short exercises delivered throughout a semester specifically designed using a team-based learning (TBL) approach to develop team-based skills.

Many classes within business majors rely on team projects to prepare students for their future careers where most of them will work in teams. However, few faculty members can afford to spend much, if any, time teaching their students teamwork skills when "teamwork skills" fall outside the course curriculum. Relatedly, students often report struggling in team projects and report negative experiences from working in teams, such as poor communication and uneven workloads across team members. This is important because critical team skills have been found to have positive effects on team performance (2001).

The purpose of this study was to test if it is possible to increase positive outcomes in student skill development and satisfaction by providing several short exercises delivered throughout a semester specifically designed using a team-based learning (TBL) approach to develop team-based skills. The value of TBL in promoting student performance and engagement is well documented (Carson & Mennenga, 2019; Huang & Lin, 2017; Jamil et al., 2012; Heidi A Mennenga, 2013). For this study, we surveyed participants in sixteen sections of a capstone business course with seven participating faculty. This management course is highly coordinated, meaning a shared curriculum, schedule, and exams across all sections. Course faculty typically teach students from all business majors, and instructors typically spend minimal time teaching students team skills. In Spring 2019, four of the sixteen sections (25%) required six short (ten minutes or less) assignments designed to encourage positive team behaviors (e.g., developing a Team Contract, additional Peer evaluations, Individual and Team Self-Assessments, etc.). The targeted class exercises were created based on concepts in the five-part model presented by Patrick Lencioni in The Five Dysfunctions of a Team (2006):

absence of trust, fear of conflict, lack of commitment, Avoidance of accountability, and inattention to results. The remaining twelve sections had no specific intervention and students in all sections completed a survey at the end of the semester that was adapted (with permission) from Heidi Mennenga's Team-Based Learning Student Assessment Instrument (TBL-SAI) (2010) at the end of the semester.

The data from our research will help faculty across disciplines better understand if intentional, yet minimal, efforts to help students develop team-based skills are helpful in enhancing team project skills and experiences, or whether more intensive skills development activities (e.g., a semester-long class) are necessary for improvement. Preliminary results indicate that treatment groups had greater positive impact with their team experience than the control groups in team-based concepts of trust, conflict, accountability, and satisfaction when compared to non-treatment groups.

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Teaching Methods Course for Engineering TAs

Hui Ma, University of Virginia; Gianluca Guadagni, University of Virginia; Lindsay Wheeler, University of Virginia

Undergraduate Teaching Assistants (UTAs) and Graduate Teaching Assistants (GTAs) are used to supporting students in active learning classrooms in the school of engineering at our institution. We developed one-credit hour teaching methods courses for these UTAs and GTAs to learn methods for interacting with students during class. The courses engage UTAs and GTAs in understanding both theoretical and practical aspects of teaching, and it will potentially influence thousands of undergraduate students each semester through the improved instructional practice of these TAs.

Abstract

We will discuss an ongoing project of developing and implementing a teaching methods course for undergraduate teaching assistants (UTAs) and graduate teaching assistants (GTAs).

Introduction

The applied math program at our institution serves about 1600 undergraduate students each semester. Every semester there are about 20 to 25 graduate teaching assistants and 40 undergraduate teaching assistants that are hired to support students in our active-learning classrooms.

The use of UTAs and GTAs has been shown to be a powerful tool in supporting students in active learning environments, particularly for females and minorities (e.g., Chapin et al., 2014; Gardner & Jones, 2011). However, most UTAs and GTAs have little or no teaching experience and need support in learning how to teach (e.g., French &

Russell, 2002; Sharpe, 2000). The lack of experience and confidence in teaching impacts thousands of students taking these challenging mathematics courses.

Purpose of study

Given the potential importance and the increasing demand of TAs, we developed two 1-credit teaching courses, one for UTAs and one for GTAs, to help support instructional practices in the classroom and improve student learning and retention of diverse students in engineering. The first pilot course was taught in fall 2017. Currently, the third iteration is taking place.

The ongoing study seeks to understand the impact of the Teaching Methods course on the GTAs and UTAs and the students they teach.

Data collection and Analysis

Data sources included pre- and post-surveys for both UTAs/GTAs and students who volunteered to participate in the study. Course assignments, in particular TAs' reflections on teaching, were included as a second data source to triangulate qualitative survey data related to the impact of the Teaching Methods course.

Results and Conclusions

TAs' confidence in their ability to create a safe learning environment for students significantly improved across the semester, as did their confidence in being able to engage students in learning.

It's worth noting that this is a pilot study with a small sample of TAs and students. Due to the limited time that GTAs and UTAs have with students during office hours and/or during class, we had difficulties gathering data. We also had a few challenges related to the logistics of the project such as enrolling UTA and GTA students in the course and advertising the course, finding a balance between the course workload/relevant topics and students' other responsibilities beyond the TA role and buy-in with the faculty not involved in the project.

Understanding International Students' Barriers when Attending College

Homero Murzi, Virginia Tech; Maia Greene-Havas, Virginia Tech; Johnny Woods, Virginia Tech

International students represent a growing population in higher education in the United States. They are important not only because they bring financial benefits to the economy, but also because they enrich academic programs by bringing their unique perspectives. However, international students face several barriers when attending college in a different country for the first time. Furthermore, the lack of context in their college experience minimizes several learning opportunities during their academic experience. In this research presentation, we provide results from our research on understanding the barriers that international students face.

The international student population in the United States is a very important sector in higher education. This population has been growing considerably in the last decades, having a financial impact on universities across the country (Downey et al., 2006; Kwon, 2009; Wang, 2008). According to Wang (2008) in 2004 international students brought over 13 billion dollars to the US economy. Furthermore, they are important because of their diverse perspectives (Kwon, 2009). According to Kwon, international students bring unique contributions to a culturally diverse society by providing a variety of insights coming from their early academic and life experiences in their home countries. Thus, international students not only are beneficial to the country for being economic drivers, but also because of the enrichment they bring (Adams, Atman, Nakamura, Kalonji, & Denton, 2002; Kwon, 2009).

However, international students face at least three major issues when coming to the US to enroll in academic programs: (i) engaging in a new social and academic environment (Burdett & Crossman, 2012; Wang, 2008), (ii) using English as a second language and in academic settings (Burdett & Crossman, 2012; Watkins & Green, 2003), and (iii) experiencing "culture shock" relating to American culture and academic culture of higher education institutions

(Downey et al., 2006; Wang, 2008). Although extensive research has been conducted on international students (Gu, Schweisfurth, & Day, 2010; Ladd & Ruby Jr, 1999; Poyrazli & Lopez, 2007; Reinters, Beausaert, Grohnert, Niemantsverdriet, & Kommers, 2012; Rose-Redwood, 2010; Sherry, Thomas, & Chui, 2010; Wang, 2008), there is a gap in the literature about first-year students and recommendations on how to better provide support for them.

The purpose of this research proposal is to understand the barriers international students face in their first year in college in order to develop pedagogical interventions and support systems to help them overcome these challenges.

We conducted semi-structured interview with 22 first-year students from multiple majors at a research university. Data were analyzed using thematic analysis techniques. In this proposal we aspire to present our results in terms of the recurring themes found in our data. Results suggest that international first-year students perceive their experience in College in the U.S. in terms of having and understanding sources of support, developing meaningful relationships, interactions with faculty members, understanding orientation processes, navigating the university, and finding mentors.

We provide implications for the development of learning environments, pedagogical practices, and implications for policy and administrators.

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POSTER SESSIONS

A Campus Partnership to Foster STEM Transfer Student Success

Noah Gibson, Salisbury University; Annie Foster Ahmed, The Universities at Shady Grove

Community college to university transfer programs are an increasingly popular pathway for bachelor degree attainment. This option has increased accessibility to traditionally underrepresented populations and nontraditional students. Furthermore, this pathway is increasing rapidly in concert with the need to train individuals within science, technology, engineering, and mathematics (STEM) fields. This project utilized a collaboration between the university learning center and a STEM faculty member to assess academic skills and focus on improving these skills to increase success in first-semester transfer students. This approach provides evidence of an improvement in academic skills of transfer students to increase success.

As the number of students transferring from community colleges to four-year institutions in STEM fields continue to increase, a greater need to understand and support transfer student success has emerged. In order to address this need, our university learning center partnered with faculty to assess and improve academic skills during the first semester following transfer from a community college to the university. Students' skills and growth were assessed using the Learning Assessment and Study Skill Inventory (LASSI), taken at the beginning and end of the semester. The learning center and faculty addressed time management, study strategies, STEM writing, career pathways, and anxiety and test preparation of individual students where weaknesses were observed. Our collaboration allowed faculty to have the awareness of individual student needs and the ability to focus on these needs during in-class work, lab activities, grading written work, and exam reviews. The faculty could refer the students for assistance in improving certain skills by visiting the learning center for writing assistance and academic coaching. Furthermore, by having the learning center administer the LASSI and giving students their scores, this allowed students to be more aware of the services provided by the learning center and a knowledge of their own needs.

This research addressed pre-test strengths and weakness and improvements seen in the post-test. These data indicate that incoming transfer students are deficient (below 50th percentile) or need improvement (50th-75th percentiles) in all ten assessment categories of the LASSI. However, in seven of the ten categories students overall showed significant improvements (p

Collaborations such as this during the first semester following transfer allows both faculty and the college learning center staff to assess academic skills and address issues. Additionally, this collaboration appears to improve academic skills based on the LASSI pre- and post-tests, which should contribute to greater success in future coursework. While this approach is advantageous to students after they have transferred, these academic skills should also be assessed and monitored during the first two years at the community college. This would allow for earlier interventions and increased awareness of strengths and weaknesses of academic skills. Further collaboration is necessary between the community college learning center, university learning center, as well as faculty at both institutions.

We encourage college learning centers to collaborate with STEM programs and faculty to address academic skills at both the community college and university that ease the stresses of transfer. This will create a proactive approach to student retention and success, and therefore reduce the need for remediation by improving academic skills and performance. This type of collaboration is relevant to any institution involved in the transfer process and may contribute to increases in retention and graduation rates.

An Active Learning Approach for Two Different Teaching Contexts

Diana Franco Duran, Virginia Tech; David Gutiérrez Serrano, Universidad Santo Tomas

The traditional teaching method does not foster a meaningful learning atmosphere that helps students to acquire the competencies required by the industry. This study proposes an instructional approach for one of the contents of a Construction Management class with the purpose of being applied in two different teaching contexts (an American and a Colombian Civil Engineering Program). From the discussion of the lessons learned in the design process of this instruction, the

proposal seeks to help instructors to successfully adapt course content to different contexts and industry expectations when using active learning as a teaching strategy for their courses.

Higher education pedagogy should guarantee that students will gain the knowledge and skills they need as future professionals. Unfortunately, engineering students are not being prepared for the workplace environment. What they learn in class, most of the time is not used by them on the job site [1]. Currently, teaching has been reduced to the transmission of information. This approach does not foster a meaningful learning atmosphere that helps students to acquire the competencies required by the industry.

The construction industry demands professionals with not only technical knowledge but also with soft skills that allow them to tackle unpredictable real-world scenarios, which will not be given in the classroom [2], [3]. These soft skills are not only demanded by the construction industry but also by other professional fields. Recently, the World Economic Forum (WEF) published the list of skills required to perform most jobs by 2022. Some of these abilities are analytical thinking, active learning, critical thinking, problem-solving, and leadership [4].

Furthermore, engineering should be understood from a local perspective. The diversity in the economic, social, and cultural conditions of each location brings different challenges and opportunities to the construction industry, and hence to the academia. Among the higher-educational institutions around the world, there are significant differences in terms of infrastructure, technology, furniture, human talent, and learning resources availability that influence the teaching-learning ecosystem of a class.

Regardless of the context, students must be globally competent, so they can be prepared to face the evolving challenges of the place where they work. A flexible instructional approach benefits the teaching-learning environment when having different local contexts to teach the same course. In this regard, active learning promotes an environment in which engineering students can develop/strength soft skills and apply technical knowledge to multiple and different scenarios.

Based on the lessons learned from the application of active learning in a Construction Management (CM) course taught at Virginia Tech, this study proposes an instructional approach for one of the contents of the CM class with the purpose of being applied in two different teaching contexts (an American and a Colombian Civil Engineering Program). This proposal seeks that future engineers gain the knowledge and capabilities they need for their workplace context.

Engineers are required to be self-directed learners during their entire professional life. In the field of civil engineering, knowledge changes at a rapid pace. Thus, industry expectations are constantly evolving. Contemporary pedagogy helps to narrow the breach between education, industry, and local contexts. This study will discuss the learning gained from the development of the proposed instruction. These lessons learned will help instructors to successfully adapt course content to different contexts and industry expectations when using active learning as a teaching strategy for their higher education courses.

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An Exploratory Analysis of Student-Made Online Supplemental Instruction Material on Learning Outcomes in Organic Chemistry I

Irene Song, James Madison University; Shane Chambers, James Madison University; Nicholas Valle, James Madison University; Mary Tam, James Madison University; Scott Lewis, James Madison University

Supplemental instruction is known to decrease drop, failure, and withdrawal rates in traditionally challenging courses such as biology and chemistry. However, there is a disparity in student access to traditional on-campus supplemental instruction programs such as tutoring centers and TA-facilitated review sessions. To date, there are limited data describing the effects of student-made online supplemental instruction (OSI) on grades and other learning outcomes, and fewer still addressing how online options for supplemental instruction mitigate accessibility rifts that exist between students. We explored the effects of a novel model of student-made OSI on learning outcomes in the form.

Purpose: Supplemental instruction is known to decrease drop, failure, and withdrawal rates in traditionally challenging courses such as biology and chemistry. However, there is a disparity in student access to traditional on-campus supplemental instruction programs such as tutoring centers and TA-facilitated review sessions. To date, there are limited data describing the effects of student-made online supplemental instruction (OSI) on grades and other learning outcomes, and fewer still addressing how online options for supplemental instruction mitigate accessibility rifts that exist between students. We explore the effects of a novel model of student-made OSI on learning outcomes in the form of grades.

Methods: OSI content was hosted on the centralized learning management system, Canvas, for students enrolled in the spring semester of Organic Chemistry I at James Madison University. Usage metrics were collected from 78 consenting students using Canvas Course Analytics in the form of resource-related clicks and student grades. Based on total resource clicks, students were deemed as either “High Users” or “Non-Users” if they had more or less clicks than the median number of clicks for the group, respectively. The average course grades were explored between these two groups, and the correlation between total clicks and final course grade was also explored for all students.

Results: We saw that individuals deemed “high users” had a higher average final grade of 57.7 ±15.6%, whereas the “lower users” finished with an average final grade of 53.8±18.9%. In addition to this, we also found a significant positive correlation between total resource clicks vs. final grade ($p = 0.044$, $r = 0.23$).

Conclusions: Our exploratory analysis revealed a significant relationship between resource use and final grade, indicating that student-made OSI may be correlated to an increase in final course grade. It should be noted, however, that our results are limited by a small sample size that is only representative of organic chemistry students taught by a single instructor. Currently, we are analyzing similar data on four cohorts of fall semester Organic Chemistry I students using improved data collection methods that will allow us to also investigate time spent viewing each resource in addition to the number of resource clicks. The exploratory analysis presented here gives invaluable insight into the efficacy of this novel resource that may be an accessible way to promote student success in challenging courses.

An Interactive System for Teaching Problem Solving in Engineering Mechanics

Arinjoy Basak, Virginia Tech

We are developing an interactive online system for solving problems in introductory engineering mechanics courses for an undergraduate degree program. Our system provides a feedback-based, exploratory environment for students to work on different problem instances and variations to explore key concepts of mathematical problem solving through developing equations for a target solution. We present the current implementation of our system and discuss the different features for problem solving, feedback, and tracking of student activity and progress. Our system leverages the Khan Academy framework for creating online exercises, and we extend the OpenDSA eTextbook system to this content domain.

Online tutoring systems have enhanced learning experiences for students in a number of different subjects. Particularly, these systems provide a framework for questions both with static and dynamically generated content, evaluating recorded answers, and providing feedback to the students based on their activities. There also exist popular frameworks that target teaching sophisticated concepts in specific fields, such as computer science, that cannot be ordinarily captured in traditional systems.

We look at teaching and practicing problem-solving skills in an introductory course in engineering mechanics at the undergraduate level, which presents unique challenges. We need frameworks to model example problems and generate problem instances such that varied questions provide students with multiple opportunities to practice. The system interface must provide flexibility in allowing students to choose different equations to evaluate unknown quantities based on given parameters, while connecting intermediate solutions for multistep problems, as well as provide room for solving multiple equations simultaneously. Finally, we want to automatically evaluate these solutions for correctness, which would depend on the current target solution for the chosen perspective of the current problem. The system checks if the system of equations is fully determined or not, and accordingly provides feedback to the student about how to proceed on their next attempt. Alternatively, some students may take alternative routes to solve a problem, which would need to be tracked in the system as well.

The system we propose and present in our poster captures all of the aspects described above. We provide an interactive interface for a given problem setting which is described using the prose of the question, together with multiple parameters. We adapt an existing framework for writing online exercises to make a single problem setting dynamic, in that the problems are created with the option to dynamically generate certain parameter values subject to constraints, and the target unknowns to be computed for a specific problem instance is also chosen dynamically at the time of loading the problem. The interface for the family of exercises allows students to choose from a bank of equations to evaluate the values of unknown variables, and connect the multiple intermediate solutions using existing equations or by building new equations using them to find target solutions. For given equations, the students are also asked to choose the unknowns to evaluate as either final or intermediate solutions. The answers and the sets of equations are evaluated together in the background to check if the system is overdetermined or underdetermined, and dimensions of quantities among other things. Students are given feedback on the unknowns and parameters chosen, the correctness of their answer, and the sets of equations chosen to solve the problem. The end goal is to allow students to learn how to use mathematical techniques to effectively solve the given problem scenario, and develop ways to approach such problems.

An Introduction to Counseling Theory and Technique for Educators

Jessica Peacock, Shenandoah University

Students today increasingly experience mental health concerns. While it is not the role of collegiate educators to provide counseling to students, it is helpful to have basic knowledge of theory and techniques commonly used within mental health treatment. This practice session will introduce attendees to cognitive behavioral theory and provide interactive practice of techniques that can be used to identify and challenge irrational thought patterns. Attendees will also have opportunity to learn and practice coping skills, including deep breathing and progressive muscle relaxation, and the session will conclude with discussion of best practices for referring students for further treatment.

Students today increasingly experience mental health concerns, and in particular high levels of anxiety. However, while trends indicate greater use of counseling services on collegiate campuses, barriers to student help-seeking still exist including stigma, embarrassment, and lack of adequate resources. While it is not the role of collegiate educators to provide counseling or psychotherapy to students, it is helpful to have basic knowledge of theory and techniques commonly used within mental health treatment, so that instructors can better understand the difficulties students face and assist them in developing coping skills and support networks in order to improve academic and overall wellness. This practice session will introduce attendees to cognitive behavioral theory and provide interactive practice of

techniques that can be used to identify and challenge the irrational thought patterns that might provoke students' anxiety, particularly in an academic setting, and help students improve their mental toughness. Attendees will also have opportunity to learn and practice skills to address state anxiety, including deep breathing and progressive muscle relaxation, and the session will conclude with discussion of best practices for referring students for further treatment.

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AHRM's Year of Study: Inclusive Communities for Diverse Consumers

Eunju Hwang, Virginia Tech; Kathleen Parrott, Virginia Tech; Erin Hopkins, Virginia Tech; Doris Kincade, Virginia Tech; Patti Fisher, Virginia Tech

The main purpose of this project was to enhance students' awareness and understanding of diversity among consumers in homes, communities, and workplaces, which elaborated upon a unifying value of the Department of Apparel, Housing and Resource Management (AHRM) at Virginia Tech. The project was built on the department's two previous successful experiences with the "Year of Study" concept. For students' diversity education, we organized public lectures with invited speakers, in class projects, and gallery exhibits. In the presentation, we will share students' reflection on diversity, class project samples, and lessons learned.

The main purpose of this project was to enhance students' awareness and understanding of diversity among consumers in homes, communities, and workplaces, which elaborated upon a unifying value of the Department of Apparel, Housing and Resource Management (AHRM) at Virginia Tech. The project was particularly focused on increasing awareness of the needs of diverse consumers, including people living with a disability, and people from diverse cultural experiences, socioeconomic status, age, and health and illness conditions. Most of the students graduating with majors in AHRM will work with large and diverse populations of consumers in delivering products and/or services across multiple media outlets and with varied marketing strategies. The activities of the project were designed to support and strengthen the AHRM Diversity Plan and to align with the College of Liberal Arts and Human Sciences (CLAHS) and Virginia Tech's (VT) Strategic Plans. Specific activities were utilized to integrate diversity issues into course content and assignments for courses across all five majors in the department (i.e., Consumer Studies, Family and Consumer Sciences, Fashion Merchandising and Design, Residential Environments and Design, and Property Management). The project was built on the AHRM Department's two previous successful experiences with the "Year of Study" concept that integrated departmental activities around a theme (Beamish, Kincade, & Anong, 2012). A steering committee was organized with a faculty member from each major within the department. This encouraged a balanced and more inclusive approach to all aspects of the project.

The project was implemented in three phases: 1) developing a learning module for students on diversity; 2) training of diversity for students through activities both in class and beyond class; 3) evaluating students' openness to diversity. In the first phase of the project, the authors applied for a grant and reviewed each program area's curriculum and selected classes most appropriate for diversity training. For students' diversity training, we organized five public lectures with invited speakers, eight class projects, and one gallery exhibit of student work. The topics of invited lectures were related to consumer lifestyles, retail and shopping experiences, life-span friendly environments, debt

among low-income older adults, and multicultural kitchen design. For assessment, students submitted a short reflection on multiculturalism after each guest lecture. Examples of class project topics included multicultural kitchen design, color preferences in various cultures, sustainable and inclusive design building assessment, cultural influence on retail and product mix, special-needs consumers, and economic well-being of low-income older adults. We also surveyed students to measure openness to diversity. The project was introduced to the department and students with a kickoff symposium, hosted by the department in the beginning of Fall 2018, and concluded with the showcase gallery exhibit in Spring 2019. In the CHEP presentation, we will share students' reflection on diversity, class project samples, and lessons learned.

Beamish, J., Kincade, D., & Anong, S. (2012) Diversity among consumers: A year of study. Global creativity and innovation: Developing capacities for sustainable futures, International Federation for Home Economics XXII World Congress, p. 138.

AMAP for Success: Vet Med Remediation of At-risk Students

Shane Ryan, Virginia Wesleyan University

At the VT College of Veterinary Medicine an innovative approach to remediation has been developed and implemented using faculty members as mentors to guide students through a structured semester of remediation activities and reflection. The Academic Mentorship Accountability Plan (AMAP) program requires all Doctor of Veterinary Medicine (DVM) students who have been identified as at-risk of failure to identify a faculty mentor and meet with the individual at least three times over the period of a semester. A template document guides the student through four phases of mentorship with their mentor: 1) Reflect, 2) Plan, 3) Learn, and 4) Evaluate/Apply.

At the Virginia-Maryland College of Veterinary Medicine (CVM), an innovative approach to remediation has been developed and implemented using faculty members as mentors to guide students through a structured semester of remediation activities and reflection. The Academic Mentorship Accountability Plan (AMAP) requires all Doctor of Veterinary Medicine (DVM) students who have been identified as at-risk of failure to identify a faculty mentor and meet with the individual at least three times over the period of a semester. A template document guides the student through four phases of mentorship with their mentor:

1) REFLECT: The student must write a reflection on where they currently are at this phase of their training, who they are as a person, and why they want to be a veterinarian;
2) PLAN: The student and mentor will draft short term and long-term goals for improvement, and brainstorm remediation activities that may help them meet those goals;
3) LEARN: The student must then log each activity completed throughout the semester that helps them meet their goals, and reflect on the outcomes of those activities; and
4) EVALUATE/APPLY: The student and mentor will meet to evaluate the progress of remediation, activities completed, and outcomes of those activities. The remediation plan may be modified at this time to accommodate new insights or realized deficiencies.

A primary goal of the AMAP program is for experienced faculty educators to help individual students both diagnose deficits and engage in targeted remediation activities. The AMAP program was based on the book Remediation of the Struggling Medical Learner (Guerrasio, 2013) and this book is recommended to faculty mentors as a resource. An additional resource is offered to faculty mentors in the form of a concise job-aid that includes example activities broken down by deficit domains, such as: 1) critical thinking and problem solving, 2) time management and organization, and 3) interpersonal skills/professionalism. Example activities include university support services such as counseling center program activities, tutoring resources, or external activities such as taking a Coursera™ course, reading a self-development book, or watching a specific TED talk to be discussed with the mentor.

The AMAP program has been formally adopted by the CVM Academic Standards Committee and is currently being piloted for the duration of one-year, after which time the program will be summatively evaluated based on student participation and attrition data. This poster will outline the theoretical framework and inspirations for the process, as well as the context in which the program was born.

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Applying Motivation Theories to Faculty Development to Encourage Sustained Engagement

Mariah Rudd, Virginia Tech Carilion School of Medicine; Shari Whicker, Virginia Tech Carilion School of Medicine

Engagement in faculty development efforts is consistently challenging. Needs assessments are valuable, but fall short in identifying what motivates faculty to engage in their own professional development. Tailoring faculty development to individuals' motivation can encourage persistence and productivity. Ignoring it, however, could contribute to burnout. Authors critically reviewed their faculty development from the lens of motivation theory and identified ways to creatively amend their professional development to leverage prosocial and intrinsic motivation of faculty.

Background: Medical educators provide programs, workshops, and events to develop faculty, yet engagement in these efforts is consistently challenging. While needs assessments help us understand the content and preferences of faculty, medical educators still struggle to understand what motivates faculty to engage in their own professional development. Tailoring faculty development to individual's motivation can encourage persistence in professional development efforts and productivity in desired outcomes.

Methods: When developing faculty development activities, we often forget to account for faculty motivation. Thus, authors critically reviewed their faculty development efforts from the lens of motivation theory, specifically self-determination theory (SDT) (2) and prosocial motivation (3). Through self-evaluation of each institution's own professional development programs, authors sought to identify ways to leverage prosocial and intrinsic motivation of faculty in their offerings. Authors connected each of their faculty development opportunities to SDT and prosocial motivational concepts and discussed opportunities to revise approaches based on their findings.

Results: Authors created a table outlining their own faculty development programs, top reasons why their faculty choose to participate, and top reasons who faculty choose to drop out or not participate. As a group, authors mapped each of the reasons to SDT or prosocial motivators. Collectively authors then identified ways to modify each faculty development program to leverage the principles of SDT and prosocial motivation to appeal to more faculty. This ranged from connecting faculty to beneficiaries of their efforts, emphasizing collective or group goals, or relying on transformational or deeply inspiring leaders who connect faculty goals with institutional priorities. For intrinsic motivation, this included maximizing autonomy (or volition of faculty), relatedness (including relevance), and competence (or promoting faculty's self-efficacy in the professional development).

Discussion: Through an enhanced understanding of SDT and prosocial motivation concepts, authors were able to identify ways to enhance their faculty development programs to appeal to their faculty. Authors were able to successfully map their faculty development activities to SDT and prosocial motivators allowing them to begin thinking about the constructs of prosocial and intrinsic motivation as they continuously revise their offerings. This exercise allowed authors to think creatively about molding faculty development to align with the prosocial and intrinsic motivation of their faculty. Authors hope that this exercise can serve as a model for others to help enhance their own faculty development offerings.

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2. Ryan RM, Deci EL. Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. Am Psych. 2000; 55(1):68-78.

Assessing the Extent and Domains in Which Students Worry

Jade Kline, Virginia Tech

I would like to do a poster presentation related to an assessment instrument that measures the construct of worry with college students. I am currently completing research and developing an instrument for a class that measure the concept of worry. I would like to present a poster which informs the audience of the instrument I developed, present relevant literature, then discuss the findings from the instrument after administering the instrument to college students.

In today's society, students have multiple things they stress and worry about. Additionally, there is a rise of anxiety and depression among students over the past few years. Being aware of the extent and the domains in which students worry is beneficial to student affairs practitioners as well as Higher Education staff. Assessing the construct of worry among students can all inform professionals on ways to support student success and develop intentional programs to lessen the amount students worry. When conducting my literature review for this poster presentation, I am going to focus on analyzing the Student Worry Scale (SWS) which is a questionnaire that was developed to measure the construct of worry among college students. This questionnaire focuses on 6 different domains which contribute to worry among students: financial-related concerns, significant others' well-being, social adequacy concerns, academic concerns, and general anxiety symptoms. One area of focus is with academic concerns. If academic advisors were aware of trends in worry related to academic concerns, these staff could develop interventions with could lessen academic worry. Decreasing the amount of academic worry could result in higher grades and academic student success. In my poster presentation, I plan on defining the construct of worry, addressing how worry can be measured/assessed, as well as the practical implication for higher education institutions and staff.

Authoring Mechanisms as a Refinement of Automated Feedback Systems

Jesse Harden, Virginia Tech

Automated feedback is a powerful tool that can enhance student learning of programming and aid faculty in assessing instruction. However, instructional practices for developing effective automated feedback still need improvement. Pedal is an automated feedback system that requires instructors to code the patterns for which automated feedback will be given; coding these patterns can be complex and time-consuming. This poster describes authoring mechanisms to simplify the description of patterns so that more time can be put towards feedback design and analysis.

Automated feedback is a powerful tool that can enhance student learning of programming and aid faculty in assessing instruction. However, instructional practices for developing effective automated feedback still need improvement. Pedal is an automated feedback system that provides instructors with the tools to analyze student work. Pedal uses several models of feedback, including Misconception-Driven Feedback (MDF). MDF identifies misconceptions by analyzing mistakes in student code. When paired with instructional design, MDF can measure instructional effectiveness through analysis of the frequency of misconception occurrences. Pedal requires patterns to apply models such as MDF in automated feedback; coding these patterns can be complex and time-consuming. This poster describes Pedal, MDF and the proposed authoring mechanisms used to simplify development of mistake patterns. The goal of this work is to enable more effective and efficient creation of feedback, which in turn allows more thought to be put towards feedback design and analysis.

Luke Gusukuma, Austin Cory Bart, Dennis Kafura, and Jeremy Ernst. 2018. Misconception-Driven Feedback: Results from an Experimental Study. In Proceedings of the 2018 ACM Conference on International

Computing Education Research (ICER '18). ACM, New York, NY, USA, 160-168. DOI: https://doi.org/10.1145/3230977.323100

Luke Gusukuma, Austin Cory Bart, Dennis Kafura, Jeremy Ernst, and Katherine Cennamo. 2018. Instructional Design + Knowledge Components: A Systematic Method for Refining Instruction. In Proceedings of the 49th ACM Technical Symposium on Computer Science Education (SIGCSE '18). ACM, New York, NY, USA, 338-343. DOI: https://doi.org/10.1145/3159450.3159478

Benefits and Challenges of Working on Videos with Community Partners

West Bowers, Radford University

Pairing students with community partners to create video projects can be a challenge to any instructor. However, the rewards of this kind of partnership can far outweigh the challenges to all parties involved with careful planning and consistent communication. Students need experiences like this to prepare them for life after college and many community organizations can also benefit from the experience by developing video content for free. Understanding how to make the best of this relationship is imperative to creating content and experiences that all parties can be proud of.

One of the best ways to get students to understand how video projects work in the real world is to assign projects that function as exactly as they do in the professional environment. Not only do students push for better quality in order to please a real client, they learn more about the skills beyond production that are required in the field. From effectively communicating with clients to managing their expectations, video students must enter the professional work with organizational and communication skills to complement their abilities to produce quality video projects. As more and more productions are made with smaller crews, production professionals must take on multiple roles that reach beyond technical skills in order to keep clients happy and recruit new clients. Setting up projects that take on community partners as clients helps students gain experience with navigating the client/producer relationship, better preparing them to face the challenges involved and reap the benefits of that relationship.

Over several semesters of working with a variety of community partners in conjunction with production courses, the challenges of pairing students with clients have become more easily navigable, while the benefits have become more numerous. Instructors can do a great deal to facilitate to this process from carefully selecting clients that will work well with students to following up with clients after the project to improve upon future attempts. Clearly articulating expectations to students early on and consistently checking in on the students' progress can alleviate a lot of the anxiety students may feel when taking on a challenge like this. The results of each project depend on many factors, but this kind of real-world experience is valuable to the students in gaining experience working with clients from the community and building their confidence as they transition to the professional world.

BYOD Experience for Internet in Economics Teaching

Tetiana Pryhorovska, Ivano-Frankivsk National Technical University of Oil and Gas; Olena Kornuta, Ivano-Frankivsk National Technical University of Oil and Gas; Yulia Kornuta, Ivano-Frankivsk National Technical University of Oil and Gas

Despite the fact of BYOD for "computer"-subjects is well-tested in educational institutions, much discussed in publications, sometimes it is terra-incognita for developing states (like Ukraine, for instance). This work summarizes up the experience on BYOD strategy usage for the "Internet in Economics" (IFNTUOG, Ukraine). The main problem we faced with was the problem of rational selection, synthesis and analysis of information received from students within their preparation to lectures in order to find and process relevant information. The main challenge within BYOD strategy usage was necessity to re-build educational process by focusing on students' skills in working with information.

Introduction

Despite the fact that the BYOD strategy for "computer"-subjects is well-tested at schools and universities, much discussed in publications, it is sometimes terra-incognita for higher education of developing states (like Ukraine, for instance). The problem is that BYOD application needs essential changes in networks, software and computers. This work summarizes the experience of BYOD usage for teaching the subject "Internet in Economics", developed at the Ivano-Frankivsk National Technical University of Oil and Gas (Ukraine). The course covers the follow topics: means of Online Communication (including advertising in social media, blogging, etc.); cloud technology and teamwork on shared documents; SMM, Internet advertising efficiency and web-site content analyze; Internet Shopping; e-commerce classes: B2B, B2C, G2C; online payment systems and systems of Internet-trading. Due to this discipline content and specifics, it needs advanced methods in its teaching.

Data Analysis/Results

The authors use Google polls, LearningApps.org, Quizlet.com knowledge control through Plickers by QR code reading from student cards, G-Suite for Education (Gmail, Classroom, Drive, Vault, Docs, Sheets, Forms, Slides, Sites, Hangouts, etc.) to provide student with the BYOD-strategy. In general, within this subject teaching we refocused theoretical material presentation from lectures to student's self-preparation. This approach is non-traditional for post-USSR universities, but increases students' motivation, improve their skills on project work and prioritization of information, etc. From the student's point of view, BYOD brings many advantages, including comfort when working with your own device and with the familiar technology, responsibility for the result of training and cooperation in projects.

However, perhaps the greatest benefit for students is that they can learn at their own pace by accessing content outside the classroom on their own devices, when and where it suits them. The main problem we faced with was the problem of rational selection, synthesis and analysis of information received from students within their preparation to classes in order to find and process relevant information. During lessons, a teacher directs students to the Internet resources and organizes their search and research activities, taking notes of the materials studied and discussing them with classmates, creation of multimedia presentations, projects, etc.; this was the main challenge within BYOD strategy usage was necessity to re-build educational process by focusing on students' skills in working with information.

Conclusions

The best observed result of BYOD strategy is motivation of students to prepare for lectures by finding and processing relevant information. The BYOD's approach involves various technical, psychological, methodological, and pedagogical aspects. Unfortunately, in Ukraine universities, unlike foreign ones, BYOD technologies have not yet been widely adopted. Nevertheless, summing up, we can conclude that the BYOD strategy is promising; but the success of its implementation depends on the willingness of both the teacher and students, the university administration to use mobile devices for education.

Gillies, C. (2016). To BYOD or not to BYOD: factors affecting academic acceptance of student mobile devices in the classroom. Research in Learning Technology, 24.

CodeBud: An Intelligent Developer Assistant Based on User's Coding Behavior

Rifat Sabbir Mansur, Virginia Tech; Ayaan Mehdi Kazerouni, Virginia Tech; Clifford Alan Shaffer, Virginia Tech

In the post-CS2 Data Structures and Algorithms courses, many junior programmers fail to complete projects on time. Many students neglect writing sufficient test-cases, using proper debugging techniques, and following proper time management. Therefore, we plan to i) analyze time-management, testing, and debugging behaviors of the students to distinguish better coding practice from worse, and ii) develop an automatic assistant/tutor, CodeBud, in the form of an intervention to suggest better practices to the students to help with their coding progress. The

innovation proposed will directly impact the pedagogical approach of teaching testing, debugging, and time-management practices to CS students.

The teaching of computer programming consists of several skills, such as designing, implementation, testing, and debugging. In the elementary level undergraduate courses in computer programming, instructors often thoroughly teach theoretical concepts and algorithms. Therefore, junior programmers often spend their most effort into designing and implementation of the code for their projects. However, they often have to learn themselves about other skills, such as writing better test-cases and debugging effectively, which are also essential parts of programming. Studies [1] have found that the practice of testing and debugging directly helps novice programmers increase their confidence and understanding of their code. Researchers [2] also found that systematic debugging technique helps students in diagnosing and removing bugs. Especially for larger projects, testing and debugging skills help novice programmer manage their project and thus perform better. Finally, poor time management and procrastination lead to many students' failure to complete one or more projects timely. Due to the large size of the class and the extent of the assignments, it is often very difficult for instructors to provide adequate feedback about the coding behavior to each student. Therefore, an automatic feedback system is needed from the earlier stage of the project development to help junior programmers better learn the skills of computer programming. Very recently, there have been some researches about helping students in some of these skills, such as procrastination interventions for successful time management [3]. As the prior study on debugging behavior [4] suggests, there are different techniques among different students. However, there is no unified system to help students with writing proper test-cases, debugging, and practicing proper time-management while completing large assignments.

Our proposal addresses these problems by introducing an automated intelligent assistant aimed at the junior-level programmers. We plan to use the developer-events of all the students from their local Eclipse environment [5] from the previous years. With millions of fine-grained events, we plan to analyze the incremental coding behavior (testing, debugging, and time-management) of each student programmer. Researchers [6] have found that procrastination has a negative relationship with performance. Therefore, our system would keep track of the progress made by the student and detect procrastination before it becomes too critical. By making students aware of their progress status, our system would be able to help them overcome procrastination and perform better.

Our poster will contain the following main sections:

Problem Statement: Describes the problem we are trying to solve and our research questions, namely: How do we distinguish better coding behavior from worse? How does automated feedback affect the performance of the students?

Data Collection: A brief description of our study context and data collection procedure: an Eclipse plugin that collects incremental project development captured using Git histories.

Preliminary Findings: A description of findings, analyzing different coding behaviors and their relationships with project outcomes.

Implications and Future Work: Describes the implications of our findings and plans for future work. Namely, we will discuss methods for automatically identifying students with bad coding behavior and intervening them appropriately.

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[2] R. Chmiel and M. C. Loui, "Debugging: From Novice to Expert," in Proceedings of the 35th SIGCSE Technical Symposium on Computer Science Education, New York, NY, USA, 2004, pp. 17-21.
[3] J. Martin, S. H. Edwards, and C. A. Shaffer, "The Effects of Procrastination Interventions on Programming Project Success," in Proceedings of the Eleventh Annual International Conference on International Computing Education Research, New York, NY, USA, 2015, pp. 3-11.
[4] L. Murphy, G. Lewandowski, R. McCauley, B. Simon, L. Thomas, and C. Zander, "Debugging: The Good, the Bad, and the Quirky - a Qualitative Analysis of Novices' Strategies," in Proceedings of the 39th SIGCSE Technical Symposium on Computer Science Education, New York, NY, USA, 2008, pp. 163-167.

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[6] N. Michinov, S. Brunot, O. Le Bohec, J. Juhel, and M. Delaval, "Procrastination, participation, and performance in online learning environments," Comput. Educ., vol. 56, no. 1, pp. 243-252, Jan. 2011.

Community-Based Learning Approach in Entry-Level Chemistry Courses

January Haile, Centre College, Lindsay Everett, Centre College

Chemistry students complete a project that engages the students with young learners at a local school. Student groups interact with the children to gain insight to questions the children have about science. To complete the project, students visit the school again and present the answers to at least one question. To assess of the effect of the project, students, voluntarily, complete the adapted DES and the CLASS. The goal of the project is to gain insight types of pedagogy that can engage a diverse set of students in entry level STEM courses.

In recent years, there has been a significant decline in the number of undergraduate students pursuing degrees in science, technology, engineering, and math (STEM) fields. Many studies have investigated this issue as it pertains to the representation of women and minority groups in STEM; specifically, the likelihood of underrepresented groups continuing in their pursuit of such degrees is much less than that of students without these characteristics (Griffith, 2010). However, there is evidence to suggest that participation in general is waning. A decreasing portion of undergraduate students who enter college to pursue a STEM education will actually graduate with such a degree (Higher Education Research Institute, 2017). One group of researchers explores the psychological differences among individuals that may predict persistence in undergraduate science programs, such as inherent self-worth or intrinsic motivators (Shedlosky-Shoemaker & Fautch, 2015). Similar discrepancies have been observed within the chemistry department at Centre College.

Since the issue seems to lie in traits relative to each student, in this study, the student experience is altered to positively interact with those psychological tendencies. Perhaps students feel disrespected in the classroom, insignificant as a member of the department, or uncertain of the future application of their work. We hypothesize that implementing a community-based learning (CBL) approach in general chemistry courses will not only tangibly engage students in the material, but it will also reveal its real-world relevance and promote a sense of unity and collaboration in the classroom. The development of mastery of one specific idea may foster future interest in the course content.

Student attitudes toward engagement in the classroom and the efficacy of the newly implemented assignment will be evaluated using an adapted Diversity Engagement Survey (DES), which has been used to measure diversity and inclusion in academic medicine (Person, 2015). Previous studies have shown that the instrument is a reliable and valid instrument for measuring diversity and inclusion. The instrument measures eight inclusion factors: common purpose, trust, appreciation of individual attributes, a sense of belonging, access to opportunity, equitable reward and recognition, cultural competence, and respect. These factors are considered to have an effect on students' sense of inclusion and engagement.

Additionally, the Colorado Learning Attitudes about Science Survey (CLASS), will be used to specifically evaluate the effect of the CBL assignment on students' beliefs regarding the study of chemistry (Barbera, Perkins, Adams, & Wieman, 2008). Both the DES and the CLASS will be administered at the end of the term to measure attitudes concerning diversity and inclusion in the classroom and the effect of the CBL activity. In addition to surveys, persistence will also be measured longitudinally by tracking which students enroll in General Chemistry II the following semester.

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Community–Centered Participatory Research and Practice in Design Pedagogy

Elham Morshedzadeh, Virginia Tech

Each individual can be described by the communities that they belong to, and the importance of Community-Centered Participatory Research has become more recognized in the field of design. Within Industrial Design (ID) specifically, interdisciplinary collaborations between university programs, community members and technology professionals can provide a unique opportunity for ID students to have first-hand access to the real needs of a community. As a result, the correlations between research and solutions are richer and more tangible in the design process for all involved.

Human-centered research has been a core element in design pedagogy for many years. But lately, by recognizing the importance of the communities involved, the practice of Human- and User-Centered Design is shifting more towards Community-Centered. The fact that every individual is being defined by different communities that he/she identifies with is undeniable and this makes it vital for the researchers to understand, empathize, and prioritize those communities and their meanings to users during the design process.

With focusing on community's identifications in problem finding and solving, three aspects need to be considered: 1) Large complex, sociotechnical systems, 2) The need for understanding (empathy), and 3) Cultural sensitivity (Norman 2019). The last factor can be more impactful and important if the targeted subjects are from countries with distinctive and locally rich cultures. It is important to mention that the needs identification and problem solving within communities cannot happen without community participation. It is vital that researchers/designers are in collaboration with updated and available technology and sociology professionals during the design research process.

In this Community-Centered Participatory Research and Practice proposal for Industrial Design students, we created the necessary basis for the access to this connected web of community and professionals through different partnerships. This type of setting makes it possible for students to get more involved with the community. For example, one of these platforms is TEAM (Technology-Education-Advocacy-Medicine) Malawi which is a transdisciplinary, collaborative team of academic and healthcare professionals (https://team.cired.vt.edu/).

Various project topics and needs have been brought to our Industrial Design students and we have made it our goal to e provide these students with access to community members and professionals. These stakeholders have been paired with students and faculty from different disciplines as a team, which provides the industrial design students with a variety of different resources, both Internal(academic) and External (community resources and professionals) which fulfills the original goal for conducting community-centered participatory research and design.

In this program, the students get to experience the impact of the research within the community relations and the true meaning of inclusivity on the designs and solutions that they provide. For example, working on a "Neonatal harness for vital sign monitoring in Malawi" would not be possible without access to these internal and external resources. In comparing the theses of senior ID students in the Spring 2017 cohort to the Spring 2018 seniors, the impacts and correlations between the research findings and final design choices were more distinctive and obvious in the students

working with Community-Centered Participatory Research and Design method and resources, compared to the ones working within the traditional pedagogy.

In conclusion, the need for a shift from individuals to communities in research and usability in design education should be recognized and more widely adopted. Creating the connections between Industrial Design students and more External and Internal resources in Community-Centered Participatory Research and Design would have lasting impact on their educational experience.

https://jnd.org/community-based-human-centered-design/
https://team.cired.vt.edu/

Acknowledgement: I would like to thank colleagues and students involved in the project mentioned in the proposal. Neonatal Vital Monitoring Project: John Bird (Cardinal Mechatronics), Lauren Cashman, Judy Chen (Medical Students -Virginia Tech Carilion School of Medicine) John Harris, Amber-Baden Lopez (Industrial Design Students), Emilie Baker, Shiva Challa, Colleen McDonald, Caitlin Steen, Kristen Merrifield (Biological system Engineering and Mechanical Engineering students)

Creatical Thinking: What AI Cannot Do That Students Can Do

Lee Pierson, Thinking Skills Institute

There is a widespread belief that advances in Artificial Intelligence (AI) will bring with them serious dislocations in the job market. It is also widely thought that colleges and universities will fail to address this situation satisfactorily.

A key step towards solving this problem would be to teach college students Creatical Thinking: how to override the faulty mental "programming" that both makes bad critical thinking and breaks good creative thinking. This is exactly what AI programs cannot do, so students learning Creatical Thinking will gain a crucial "AI-proof" skill.

In this session, we will investigate Creatical Thinking with exercises.

There is today a widespread belief that advances in Artificial Intelligence (AI) will bring serious dislocations into the job market for those not properly prepared. It is also widely thought that colleges and universities will fail to address this situation satisfactorily. Here is what a Forbes Online article had to say about this issue, drawing upon the results of a recent survey:

"The major conclusion of the Gallup/Northeastern survey is

- Perhaps most surprisingly, most of the adults in all three countries would not look to higher education for the additional skills and training they would require in response to AI adoption. A majority of the public in all three countries believes large businesses and government are not 'doing enough to address the need for career-long learning and training.'"

"Only 3% in the United States, 10% in the U.K., and 12% in Canada 'strongly agree' that universities in their countries are preparing graduates for success in the current workforce. And if their skills become outdated, then strong majorities in all three countries would prefer to be educated by an employer rather than by a university, according to the Gallup/Northeastern survey."

https://www.forbes.com/sites/gilpress/2019/07/15/is-ai-going-to-be-a-jobs-killer-new-reports-about-the-future-of-work/#6c882221afb2

I suggest that a key step toward solving the problem of making higher education more relevant to these problems posed by AI would be: teaching Creatical Thinking in the college classroom.

Creatical Thinking is: intentionally bringing to mind the right knowledge for getting your thinking back on track toward its goal, when what comes to mind automatically (or by "just trying harder") has left it stuck, confused, wandering, or sidetracked. It's what to do when you don't know what to do. Why "creatical"? Because it involves overriding the faulty mental "programming" that both makes bad critical thinking and breaks good creative thinking. (Note that the skill of overriding bad "programming" is exactly what AI programs cannot do for themselves. They can modify themselves, e.g. by neural net "deep learning," but they do so only in accordance with their own programming; they cannot go beyond the automatic to override it.)

The key skill of Creatical Thinking is introspection on the thought process: identifying what to think about next to keep your thinking moving towards its goal. This skill enables its possessor to go beyond what comes to mind automatically and thereby reliably sustain independent thought, something that many of today's students cannot reliably do. Introspection on thinking is arguably the most important cognitive skill not explicitly taught in school at any level.

In this session we will look more closely at the key Creatical skill of introspection and how instruction in it can be integrated into college classes, especially (but not limited to) courses in composition, rhetoric, and logic.

Design Principles for Online Art Education Courses Using Procedural Scaffolding

Jeeyoung Chun, Virginia Tech, Kihyun Nam, University of Georgia; Kizito Mukuni, Virginia Tech

This study aims to investigate design principles for the development of online art education courses using scaffolding strategies in order to facilitate cognitive processes. Scaffolding strategies are utilized for designing online courses to lead to more engagement and prompt cognitive conflict. In particular, procedural scaffolding has been adapted to provide students with materials, resources, and instruments for the accomplishment of the learning task. Suggested design principles can be applied for online education courses for college level art education students. Through design principles, instructional designers and instructors can develop online art education courses that enhance students' cognitive process.

Introduction

Scaffolding refers to "a form of assistance provided to a learner by a more capable teacher or peer that help[s] them perform a task that would normally not be possible to accomplish by working independently" (Mcloughlin & Marshall, 2000, p. 1). Scaffolding has a positive impact on cognitive processes. Scaffolding can guide students to progress to the level of cognitive presence expected in the course objectives (Gašević et al., 2015). It also prompts a cognitive conflict that should provoke a conceptual discussion (Nussbaum et al., 2009) and reduces the complexity of the task, while simultaneously increasing student understanding (Hicks & Doolittle, 2008).

Despite the importance of scaffolding for cognitive processes, little previous research has examined scaffolding strategies that enhance cognitive processes in online education (e.g. An & Cao, 2014; Choi et al., 2005; Sharma & Hannafin, 2004). In addition, no previous research has related to the use of scaffolding strategies for the enhancement of college students' cognitive processes in art education. To overcome this gap, in this study, design principles will be presented to develop online art education courses in higher education.

Literature review

Procedural scaffolding highlights how to use the characteristics of a learning circumstance to assist students in navigating their surroundings (Hill et al., 2005). This scaffolding feature lessens the students' cognitive burden by offering step-by-step instruction and guides their attention to crucial aspects of the activity (Lee & Hannafin, 2016). Procedural scaffolding involves providing the supplies, resources, and instruments needed for accomplishing the work (Amerian & Mehri, 2014). For instance, Huang et al. (2012) investigated the effects of using procedural scaffoldings in facilitating learning outcomes and group dialogue levels in a paper-plus-smartphone cooperative learning setting. All learners in this study used smartphone cameras to evaluate new information. Learners in the experimental group

using procedural scaffoldings attained better results in group study, dialogue levels, and personal learning than did participants in the control group.

Methodology

To present design principles for the development of online art education courses using scaffolding strategies in order to enhance students' cognitive processes, an intensive literature review will be conducted. The review of literature will include related theories, the features of procedural scaffolding, and the existing principles related to procedural scaffolding. The findings of this literature review will be the foundation for the development of design principles.

Results

Based on the results of the literature review, synthesized design principles will be described. The presented design principles will include step-by-step instructions for conducting procedural scaffolding strategies in online art education courses for college students. Also, specific guidelines will be presented for instructional designers and instructors in order to apply design principles to the development of online art education courses.

Discussion and Conclusion

This study will present the design principles for the development of online art education courses using procedural scaffolding strategies in order to enhance college students' cognitive processes. Through these design principles, instructional designers and instructors will be able to develop online art education courses that aid students' cognitive processes.

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Designing Interactive Lecture Experiences Through Formative Assessment and Classroom Technology

Vincent De Freitas, Top Hat; Sara Lenhart, Christopher Newport University

Learn how to rethink the 'sage on stage' approach to lecturing by incorporating real-time feedback through classroom technology (Top Hat).

Key themes: motivating attendance, maintaining motivation, data-driven decision making.

Top Hat will be used in this presentation and free access to the platform will be enabled for this session. Participants can engage with the presenter using their personal devices (iOS or Android) or through the browser on a laptop.

In this presentation, I will explore gaps in the traditional lecture format and identify areas where we often lose students in the learning journey. This presentation is chunked into three stages with three key objectives.

The first third of the presentation looks at attendance through the lens of expectancy-value theory. Although faculty are consistently split on whether or not make attendance a graded part of students' overall mark, a strong correlation has been established between attendance and student success. Expectancy-value theory can help us to understand what effective attendance policies look like, and provide a framework that helps instructors create value that drives students to attend class.

To explore these ideas, I use Top Hat to interact with the audience and leverage their responses to challenge existing ideas around attendance policies and connect to larger ideas around motivation.

Next, I look at motivation and attempt to debunk the unfortunately common idea that students (and others) only have an 8-second attention span. Instead, I identify and model best practices for maintaining motivation. These best practices include lecture chunking, repurposing devices to limit distractions, creating moments for student interaction, and leveraging classroom technology for real-time feedback. In this exploration, I shine a light on three different types of active learning interactions: comprehension checks, holistic check-ins, and low-stakes participation activities that help promote inclusion within the learning environment.

The final third explores ideas around effective grading practices, closing the loop on student generated data and how to ultimately leverage real-time insights (graded or ungraded) to drive improvements in both student performance and iterative course design.

When looking at grading, I ask whether the common syllabus accurately reflects where we want students to spend the majority of their time. By shifting more points to formative assessment from summative assessment, we provide an incentive for students to focus on working through their failures towards success. By measuring often through formative assessment, we create a rich data set for understanding where the gaps exist, both in student understanding and in course design.

Pending acceptance and logistics, this presentation may also provide practical examples of course design by Sara Talley Lenhart, a senior lecturer at Christopher Newport University. Sara may also join as a co-presenter, pending logistics and acceptance for the event.

Designing Program Learning Outcomes: A Grand to Granular Perspective

Brandon Moore, Liberty University

Writing Program Learning Outcomes (PLOs) can be challenging for both the novice and seasoned alike. In light of this, the session will begin with a foundational description of the purpose and function of PLOs. Building on this groundwork will be a discussion of the standard structure of PLOs and an examination of learning outcome taxonomy. Then we'll delve into the more technical and linguistic nuances of PLO wording. Lastly, we will consider PLOs within their larger academic context. Participants will also have opportunities throughout the session to practice the concepts discussed.

The completion of an academic degree involves significant investment of resources such as time, finances, and energy. By formally assigning Program Learning Outcomes (PLO) to a degree program though, the accountability to stakeholders can be strengthened. PLOs, in part, can more clearly identify expected outcomes for graduates of the program, as well as the means for assessing the measure of success in achieving those outcomes. However, writing

PLOs in a manner that effectively promotes the identification and assessment of outcomes, conforms to industry standards, and strategically accounts for a number of other academic factors, requires that thoughtful understanding and judgement be applied to their development.

Conference presentations and professional literature describing best practices in writing program learning outcomes will often address components considered vital to the wording of PLOs. Unfortunately, though, what is overlooked or excluded is often a number of broader academic factors that provide the curricular context in which PLO development ought to be considered. This author's experience of having reviewed hundreds of PLOs to be approved for scores of programs across several academic disciplines has fostered a number of insights on designing quality PLOs, as well as issues to look out for.

For the purposes of this presentation, instruction on understanding and writing PLOs will be provided. This will include an introduction of the fundamental purpose of PLOs, then a discussion of the more technical linguistic structuring of PLO statements, and finally guidance will be offered regarding broader academic contexts that may consideration.

Development of a Blended Faculty Orientation Program

Courtney Vengrin, Iowa State University; Lisa Gestrine, Iowa State University

Veterinary Medicine (VM) in higher education is a unique environment where many educators find themselves in a classroom with a lack of pedagogical training. Often these individuals come to the world of education as a secondary career path, after working in a clinical practice for several years. It is exceedingly rare that veterinary medical faculty entering the classroom have any formal training on educational practices, curriculum development, or pedagogy. Developing services to support teaching and engage faculty as leaders in the classroom is critical to both faculty and student success.

Veterinary Medical Education (VME) is a unique environment where many educators find themselves in a classroom with a lack of pedagogical training, and often these individuals come to higher education as a secondary career path, after working in a clinical practice for several years (Haden et al., 2010; Silva-Fletcher & May, 2018). It is exceedingly rare that VM faculty entering the classroom have any educational training. Developing services to support teaching and engage faculty as leaders in the classroom is critical to both faculty and student success (Silva-Fletcher & May, 2018; Warman, Pritchard, & Baillie, 2015).

Having a faculty development program that addresses one of the major concerns for incoming faculty can help lower faculty attrition which provides a cost-savings for the institution (Hubbell, 2008; Lowenstein, Fernandez, & Crane, 2007). The cost of faculty turnover is significant, often costing the college over $100,000 to replace a faculty member, however providing faculty with supports and training resources has been shown as a critical component of retention (Furr, 2018; Schloss, Flanagan, Culler, & Wright, 2009; Warman et al., 2015). A robust faculty development program that has marked benefits and accomplishments by the participants will be attractive to potential new faculty being hired to the college. Faculty development programs have marked benefits for increasing student learning and these programs also serve to increase faculty ability to achieve promotion and tenure (Nilson, 2010; San Miguel, 2018). Research indicates that teaching and research productivity go hand in hand and through faculty development that supports the scholarship of teaching and learning, teaching practice and scholarly work can both increase, thus leading to a more robust tenure packet for faculty (Marsh & Hattie, 2002).

The New Educators eXperience and Training (NEXT) program is designed to help with recruitment and retention with new faculty at the College. Many choose academia for intellectual and scientific challenge and stimulation, the lifestyle academics offers, and interest in teaching. Our goal is to include basic trainings about basic educational concepts and provide support for faculty who are in their first years of teaching. The new faculty training program will provide faculty with the book “Teaching at its Best” by Linda Nilson, an internationally recognized scholar in the area of teaching and learning and faculty development. This text will provide new faculty with the resources for

developing their teaching practice and be used as a foundation for the online component of the new faculty training, with modules created in Canvas Catalog. Given that new faculty start at a variety of times throughout the academic year, the utilization of Canvas Catalog allows this training program to be self-paced, permitting faculty to begin at any point in the year and complete it as they are able. Expected time for completion is one calendar year. Participating faculty will be able to create content for their courses and have the content reviewed by educational specialists."

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E-portfolios + LMS + SLO rubrics = Programmatic Assessment

Robin Takacs, Virginia Wesleyan University

Electronic Portfolios can lead to greater student engagement and also allow reflection on student learning by systematically developing e-portfolios over the course of the student's academic career. At Virginia Wesleyan University, we have integrated key, course level assignments, graded by the instructor based on rubrics to evaluate student learning outcomes in our Learning Management System (Blackboard), and posted as an artifact by the student into our electronic portfolio platform. These course artifacts can then be evaluated by outside assessors to perform program level assessments for academic departments to evaluate their successes and areas of improvement.

Research has revealed the benefits of Electronic Portfolios as a high-impact practice by the American Association of Colleges and Universities (AAC&U). Benefits include increased student engagement by developing a dynamic 3-D resume for job search and graduate school applications. Students upload and display actual examples of their papers, projects, photos, and digital presentations in the E-portfolio. By uploading the artifact into Portfolium.com through the Learning Management System (LMS), the artifact is also simultaneously uploaded in two places, Portfolium.com and Blackboard. Through the LMS, the artifact can be accessed by the course instructor for evaluation, feedback and

grading at the course level, based on course objectives and instructor rubrics. The course instructor then can post evaluation comments, feedback and assign grades through the LMS Grade Center. By simultaneously posting the student artifact in BOTH the LMS and Portfolium (our electronic portfolio platform), VWU can then access these artifacts and select course artifacts to be evaluated by outside assessors, other than the course instructor.

At Virginia Wesleyan University, graduate and undergraduate students can upload key course level assignments as artifacts either through our Learning Management System (Blackboard) or directly into the Portfolium.com platform. VWU can then access these artifacts through the Administrative features of the Portfolium.com platform to be evaluated by outside assessors, other than the course instructor. The assignments are linked to specific Student Learning Outcomes (SLO) rubrics that are contained in the E-Portfolio platform to perform program level assessments for academic departments. The ease of this process to allow for programmatic assessment and the ease of the flow and timing of programmatic assessment allows for individual assessors to perform their evaluations on their own time. Department Chairs and Deans can then review results to norm the evaluation data and analyze the results to reveal successes and areas of improvement. At VWU, we are currently evaluating SLO's for our undergraduate Education Program assessment and are in the beginning stages of using this process to assess our Graduate-level Masters of Business Administration program. This new assessment effort has resulted in a mix of outcomes. While the conceptual approach to this assessment technique is quite clear and evident, minor intricacies such as technological capabilities, faculty time and attention, norming, sampling techniques and other assessment issues have provided some challenges. This research poster will present the successes of this assessment practice as well as the lessons learned from this endeavor. We plan to offer some solutions for overcoming some of the challenges based on our experiences with this assessment practice. As we continue to work with and learn about using e-portfolios as part of the assessment process, we hope to bring a new level of programmatic assessment to the entire campus community, that can be useful to a variety of disciplines.

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Evaluating the Effectiveness of Iteration Visualizations

Molly Domino, Virginia Tech

Virginia Tech's Introduction to Computational Thinking course is designed for non-majors to learn key concepts in computer science. In an effort to support student reports of struggling with iteration, interactive visualizations have been developed and research on their effectiveness is currently under review. While the preliminary data was promising, we are currently conducting interviews with students under IRB to better understand the shorter-term gains in student learning. We will be recording these interviews and formally analyzing responses. This poster will present our findings from this analysis and better define the common pitfalls students are experiencing when learning iteration.

As our culture becomes more reliant on computers, there is an increasing need for students of all disciplines to have an understanding of computer science. Virginia Tech's "Introduction to Computational Thinking" offers students outside the major a course in the fundamentals of computer science.

However, these fundamentals can be a challenging subject for novice programmers as they are frequently abstract and require a specific skill set when evaluating a problem. This is not exclusive to Virginia Tech either; several studies

have been conducted at other institutions to examine what topics students struggle with most. One of the most commonly cited topics is iteration.

In an effort to improve understanding of iteration in "Introduction to Computational Thinking", interactive visualizations have been developed. These visualizations take two forms. First, interactive demonstrations where blocks of code are highlighted to show how the computer moves from one command to the next. Second, exercises where students are given similar examples and asked to explain what is happening. Initial research into the effectiveness of these visualizations is currently under review. In this work, students were surveyed on the last day of class. 48% of students reported these materials to be helpful but 29% of students reported 'not recalling' the visualizations (Chon, 2019). Similarly, while students performed well on post-tests immediately after the content was introduced, subsequent post-tests measured a decline in comprehension (Chon, 2019).

It is the goal of this research to better understand the nature of these short-term learning gains. We are currently preparing to conduct interviews with students under IRB in an effort to gain further insight into how to improve how we teach iteration and the tools we use to do so. Interviews will take place in the coming week, and responses will be formally analyzed. This poster will present the results of our analysis and hopefully offer insight into the near-term effectiveness of these visualizations for students.

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Faculty-Led Professional Development: Meeting Faculty Where They Are

Breana Bayraktar, Northern Virginia Community College

Leading faculty professional development is a tricky proposition, especially when working with very limited resources. Over the past year, our institution began the process of building a new model of what faculty development would look like. Faculty representatives from each of our campuses came together to plan college-wide activities for all faculty, to offer monthly in-depth sessions for new faculty, and to facilitate a variety of campus-specific activities. This presentation will discuss the successes and failures of a group of faculty who took on the task of kicking off a new model of college-wide professional development.

In 2018 our institution began a long-planned process of re-establishing a Center for Excellence in Teaching & Learning, starting with building a new model of what faculty development would look like. Faculty representatives from each of our campuses came together to plan college-wide activities for all faculty, to offer monthly in-depth sessions for new faculty, and to facilitate a variety of campus-specific activities. The goal of this session is to share how we re-imagined faculty professional development as a grassroots model. Using these experiences, we hope to provide a blueprint for engaging faculty in professional development that meets them where they are, and which meets the need for professional development that respects and works with each individual's local context. Attendees will

hear from faculty who were involved in the re-design process about what worked for college-wide and campus-focused initiatives to encourage faculty participation in professional development. Attendees will leave with an array of ideas, from small and focused to broad, to address professional development needs for themselves and their campuses. Faculty need to be engaged in their own development, and that looks different for each individual. Additionally, we are all being asked to do more with less, and this session addresses faculty-initiated development as a way to meet the need for professional development in local contexts.

Thinking about how we develop professionally is of vital importance to our growth as teachers, scholars, and colleagues. Presenters will speak not only about their experience at a large and diverse institution, but will incorporate best practices in faculty development from current research. This session focuses on professional growth not just from the perspective of the planners, but also from the faculty's perspective. The session addresses who faculty are life-long learners, with a focus on how faculty can balance competing roles as instructors, scholars, members of professional communities, and members of their college/campus community.

Fostering Student Engagement in Online Methodology Courses

Sarah Marrs, Virginia Commonwealth University; Michael Forder, Virginia Commonwealth University

With the growing presence of distance learning in higher education, understanding ways to make these courses meaningful and effective for students in critical. One of the greatest challenges of online education is engagement. This practice session focuses on enhancing student engagement in online methodology courses, which present their own unique challenges even in face-to-face settings. Examples of how to improve student engagement in these types of courses will be presented based on experiences in a required biostatistics course for a doctoral program in Health Related Sciences.

Online instruction has become increasingly more prominent in higher education (Dixson, 2010; Tallent-Runnels, Thomas, Lan, Cooper, Ahern, Shaw, & Liu, 2006); entire degree programs are offered almost completely online or following a hybrid model that blends face-to-face and online learning. Student engagement in online courses is difficult to facilitate (Henrie, Halverson, & Graham, 2015); this is particularly true for methodology courses, such as statistics, which present their own unique challenges to fostering student engagement and motivation even in traditional face-to-face settings.

Most degree programs require at least one methodology course. For advanced degree programs, such as doctoral programs, these courses are often rigorous and rather intimidating to students. When taught face-to-face, instructors are able to regularly engage with students, gauging their mastery of the material, as well as keep students engaged with the material and with each other as they progress through the course. In an online setting, it can be especially challenging to foster meaningful engagement of students with the material itself, let alone with their peers and the instructor. In doctoral programs, mastery of concepts covered in methodology courses is critical for enabling students to complete research projects throughout their careers, beginning with their dissertations. Thus, it is important that instructors find creative ways of engaging students in these courses to ensure they have the skills needed to be successful researchers upon graduation.

This practice session will focus on how to meaningfully engage students with methodology courses based on experiences from a biostatics course. This hybrid course is required for students completing a doctorate in Health Related Sciences at a large, urban, mid-Atlantic university and is taught during students' first semester. Students in the program come to campus for in-person sessions the first and last week of each semester and complete the rest of their courses online, synchronously; offering opportunities for synchronous learning in online courses has been shown to increase student engagement (e.g., McBrien, Jones, & Cheng, 2009). Using the course's online site, meaningful engagement with the material, with peers, and with the instructor have been incorporated into the course. Examples of how to build these components in to online methodology courses will be discussed, including demonstrations of using different online tools for fostering more meaningful discussions around less than exciting topics, such as checking the assumptions of a t-test or how to choose follow-up procedures for an analysis of variance (ANVOA).

Students' perceptions of these course enhancements will also be presented. The session will conclude with an open discussion of how audience members might be able to apply these or similar activities in their own courses, potential barriers of integrating these activities, and strategies for overcoming identified barriers.

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Identifying Common Themes in Health Professions Education Academy Mission Statements

Mariah Rudd, Virginia Tech Carilion School of Medicine; Shari Whicker, Virginia Tech Carilion School of Medicine

In the evolving landscape of health professions education (HPE), academies throughout the nation work to offer enhanced faculty development and education opportunities that lead to optimized patient care and provider wellbeing. HPE academies have been growing over the last decade yet there is no consistent model or mission available for those looking to develop one at their own institution. Using a survey of national academies, authors sought to identify common mission themes and how academies can be leveraged to enhance continuing professional development. The data collected will help to inform the professional development missions of academies throughout the country.

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Impact of Assignment Structure on Student Perceptions of Online Courses

Savanna Love, Randolph-Macon College

As online courses become more common in higher education, it is becoming increasingly important for instructors to understand the impact course design can have on students' attitude and success in a course. The current study considers the impact of assignment structure on student perceptions of course workload in a graduate online Educational Psychology course. Students completed an online survey to indicate their experiences in the course and their perceptions of the workload. The findings from this study will further the discussions on effective course design, instructional strategies for online courses and student perceptions of online courses.

As online courses become more common in higher education, it is becoming increasingly important for instructors to understand the impact course design can have on students' attitude and success in a course (Swan & James, 2017). One of the challenges instructors face is maintaining a high level of rigor while also considering the importance of promoting collaboration, building social presence, and creating course engagement (Baldwin, 2019). When courses are moved 100% online, students can often feel overwhelmed by the amount of time it takes to complete their

coursework (Varre, 2014). Even if the number of hours spent on an online course per week is equivalent to a face-to-face class, working in isolation on assignments can often feel much different than meeting as a group for 3-4 hours per week. One of the ways in which instructors can manage student perceptions of online courses is to ensure clear course structure and expectations as well as intuitive navigation to all necessary assignments and materials (Jaggars & Xu, 2013). Research has also demonstrated the importance of integrating assignments into course content and making them clear and consistent with course contents. The number of assignments has also been found to impact student perceptions of workload and course manageability (Soffer, Kahan & Livne, 2016).

The current study will consider the impact of assignment structure on student perceptions of course workload in a graduate level online Educational Psychology course. Previous course feedback indicated that students felt that the course was extremely, and sometimes unreasonably, rigorous. Therefore, the instructor modified the structure of weekly assignments for the Fall 2019 semester based on student feedback and research on online course design in an effort to see how the structure might impact student perceptions moving forward. Each week, students will complete a critical thinking discussion in which they interact with a small group of their peers to discuss major points from the readings. This is a modification from whole-group discussion in previous semesters. Additionally, students will complete an interactive video quiz in which students review the instructor's weekly video, answer questions and complete activities to engage with the material that week. This is a modification from multiple separate assignments in previous semesters. Participants include 22 graduate level students (3 male) pursuing a Master's in Education with varying experience taking online courses. At the completion of the semester, students will complete an online survey to indicate their experiences in the online course and their perceptions of the workload. Responses will be considered in conjunction with course evaluation responses as well as overall course performance and participation. A detailed comparison of assignment modifications from previous semesters will also be provided. The findings from this study will further the discussions on effective course design, instructional strategies for online courses and student perceptions of online courses. The findings will also be relevant to a broad audience including online instructors, instructional deniers, LMS organizations and administrators.

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Incorporating Virtual Reality Technology into a Veterinary Clinical Skills Laboratory

Jessie Juarez, Iowa State University

Clinical skills laboratories (CSL) are utilized at many veterinary schools across the country to provide an environment where veterinary students can learn and practice clinical veterinary skills in a low risk environment. In an effort to further meet the needs of students to learn clinical veterinary skills, virtual reality (VR) equipment was purchased and is being utilized at Iowa State University College of Veterinary Medicine CSL. Through the use of VR technology, students are able to experience settings and situations that they may not otherwise be exposed to during veterinary school.

In an effort to improve pedagogy in a veterinary clinical skills laboratory (CSL), the use of virtual reality technology is being investigated and implemented to enhance veterinary medical education. Clinical skills laboratories are found in most veterinary schools across the United States to provide an area for students to perform hands-on clinical skills that are needed to be successful in veterinary school and in practice. Use of high fidelity and low fidelity models and

simulators can be found at Iowa State University College of Veterinary Medicine to train veterinary students on clinical skills needed in veterinary medicine.

Significant challenges exist in providing a similar experience to all students, especially during their clinical year (fourth year) of veterinary school. Time constraints, geographical location and biosecurity concerns and safety concerns are several reasons that veterinary students may not be exposed to the same learning opportunities. With the use of 360-degree camera, images and video are recorded and edited to use in the CSL to bring virtual reality veterinary medicine to students. Eight virtual reality headsets and eight Android cell phones were purchased to be utilized by students in the CSL at Iowa State University College of Veterinary Medicine. Multiple learning opportunities have been identified for VR technology to improve and enhance the delivery of teaching clinical skills to veterinary students. Several areas under consideration for use of VR technology include: necropsy (autopsy) of animals, evaluation of swine farms with VR to eliminate biosecurity risk of bringing people onto a farm as well as safety orientations with students prior to starting a new clinical rotation.

When students are exposed to a new situation for the first time, biosecurity as well as safety concerns are present. For example, working in a swine barn comes with many safety and biosecurity concerns, as animals can be dangerous to work around and if a student is not careful, they could unintentionally bring in diseases that can be fatal to the pigs and devastating to the economy. If a physical exam of a fractious animal can be recorded, students can be immersed in the physical exam in a VR headset without being at physical risk for harm. VR also provides potential training opportunities in areas where students may need to have a better understanding of animal behavior and how that is exhibited in a veterinary environment (such as a horse undergoing anesthesia in an induction stall). Without proper knowledge and understanding of potential issues that could arise in a dangerous situation, students could be placed in a high-risk situation. The use of VR can help to mitigate risk of veterinary students while still providing useful and relevant experience. Furthermore, the low-risk environment of VR allows students to experience situations and learn in a safe environment. A student may not be confident enough or willing to work with bulls that can be aggressive, however, through the use of VR, the physical exam and medical findings can be relayed to the student through virtual reality technology.

Instructional Strategies to Successfully Engage and Prepare First Generation Students

Amina Brown, University of the District of Columbia

Each year, first generation college students enter institutions of higher learning in pursuit of the opportunity to participate in the workforce in ways, and at points, often unprecedented in their families' histories. Set upon a path to change the trajectory of their whole families, the accomplishment of many first-generation college students is often reduced to being the first to be accepted into college, but completion of college often remains elusive. For example, in the District of Columbia, although most public high schools boast 100% college acceptance rates, only 6% of students who are accepted into college actually finish. So, regardless of the types of institutions--first generation college students confront many challenges--largely academic--which impedes their ability to finish. Students, especially those who graduate from urban high schools significantly struggle with accessing and mastering college level content. This session entitled,

“Instructional Strategies to Successfully Engage and Prepare First Generation College Students” will equip college instructors with the tools needed to build and implement classroom level assessments to determine student skill levels. Moreover, this session will allow instructors to learn to progress monitor student performance focusing on improved academic achievement for those most ill-prepared for the rigors of college teaching and learning. “Instructional Strategies to Successfully Engage and Prepare First Generation College Students” will further offer participants pedagogically sound techniques and resources that pull from the K12 learning continuum, informed by state and national standards, offer best practices in scaffolding using Bloom's Taxonomy and DOK, and demonstrate how to leverage various learning modalities to engage and build confidence in students otherwise overwhelmed by the pace and expectations of college level work. Participants will come away with understanding the psyche of first-generation

college students, as well as with an understanding of common trends in academic skill gaps and ways to most effectively manage the pressure of first generational college attendance, and its often-poor academic preparedness.

Presenter Information: As a former District of Columbia Public Charter School, School Director/Chief Academic Officer, and a Turnaround Principal, especially, Amina Brown is familiar with the challenges that at-risk, neglected and abandon youth, confront daily. First hand encounters with children orphaned by AIDS, drug addiction, and stories of struggle through extreme poverty--often under a pervasive and unremitting threat of lethal violence serve as reminders of why a commitment to strong instructional practice, expectations of high academic achievement, and a robust school environment that works to provide adequate social and emotional development is the best way to ensure that all students are poised to not only survive, but to compete and succeed in an ever-changing 21st century. Ms. Brown believes, strongly, that innovative schools must work to develop conscientious programmatic, pedagogical, social and emotional infrastructures that are a clear departure from traditional, and usually long failing archetypes. Ms. Brown has had several roles in her professional journey that have required that she "rebrand," educational and school-based programming, making them responsive to the needs of the students long underserved by traditional and archaic models. Ms. Brown has worked as a Turnaround Instructional Leader for the District of Columbia's oldest elementary school, the National Senior Director of In-School Programs for the Network for Teaching Entrepreneurship, the Lead Instructional Performance Coach (for the District's CMO/School District Turnaround Partnership) and have had several roles with District of Columbia Public Schools, including Lead Curriculum Writer, and Director of Reading Intervention (secondary). These roles required Ms. Brown to work to understand the needs of student constituencies, especially vulnerable student constituencies, further designing, implementing, managing, and assessing creative yet responsible ways to reconcile best practices in teaching and learning with improve ways to engage students. Ms. Brown's work leading innovative in-school models at both the elementary and secondary level, provided the foundation for serving as the Founding School Director for Goodwill Industries' Goodwill Excel Center. The Goodwill Excel Center is the first high school on the East Coast to provide severely over-aged, and under credited students the opportunity to earn a high school diploma rather than a GED. Ms. Brown gravitates fastest, and hardest to turnaround and start-up settings because they both provide opportunities to "get it right," and prove to be ripest for innovations in education. Whether it is a new school entirely, or a new way to engage or reengage students within a school model, Ms. Brown is committed to the principle and practice of innovation beginning at the top (District level) with equity among school performance expectations serving as the impetus for advances in educational experiences.

Instructor Feedback on the Impact of an Online Course Review

Marjorie Bazluki, University of Wisconsin - La Crosse

Online degree programs in higher education have risen dramatically in recent years. This increase is shifting the learning environment from the traditional classroom to distance learning to online learning. With the increase in online course offerings, the need for ensuring that the same high-quality standards set in traditionally taught courses are also set in traditionally taught courses are also set in online courses.

This session highlights a case study that explored the impact a quality assurance course review had on instructors at University of Wisconsin - La Crosse (UWL).

Addressing the need for high-quality, online education courses, UWL recently revised its own in-house course review guidelines so that online courses are held to the same high academic expectations and standards as face-to-face courses. Due to the importance of a quality assurance component incorporated into the course development process, UWL's Instructional Design team offers any faculty who teach online the opportunity to have their course reviewed prior to the start of the course.

In this session, the online course review process will be discussed in relation to the survey results highlighting the impact a quality assurance course review had on instructors at University of Wisconsin - La Crosse (UWL).

Instructor Immediacy: How Nonverbal Communication Fosters a Positive Classroom

Brandi Quesenberry, Virginia Tech; Emil McCaul, Virginia Tech; Morgan Cline, Virginia Tech

Instructor immediacy is best explained as the perception of closeness created through the strategic use of specific communication behaviors. The use of immediacy techniques positively impacts students' experiences in the classroom by increasing their motivation, enhancing their perceptions of learning, as well as creating higher levels of satisfaction with the instructor and the course material. This poster will highlight specific examples of how verbal and nonverbal communication techniques can be utilized by both novice and experienced teachers to increase instructor immediacy in small and large classes across the disciplines.

Immediacy is a concept that measures one's familiarity with, or perceived closeness to, another individual created through nonverbal communication (Frymier, n.d.). Immediacy can also be created through verbal communication, though it is more often associated with nonverbal actions related to physical proximity, body language, tone of voice and facial expressions (Andersen, 1979). Positive examples of these nonverbal behaviors are recognized for their ability to build immediacy between individuals-especially within the setting of a teacher-student relationship. The formal term used to identify teacher-student immediacy is "instructor immediacy," and it will be the focus of this poster.

There are several benefits to instructor immediacy fostered by positive nonverbal behaviors; research confirms that students stand to benefit from this type of open, inviting behavior in five specific areas. The first area of recognized benefit is an invigorated learning experience for students; both cognitive and affective learning increase. The second recognized area of benefit is that it leads students to feel more supported. This increases students' confidence and sureness in themselves as instructors express confirmation to students' questions or inquiries. The third recognized area of benefit is that it increases the students' perception of the instructor's credibility. Two components in particular contribute to this perceived credibility, which are "character (i.e. being trustworthy)" and "caring (i.e., having another's best interest at heart)" (McCroskey & Teven, 1999). The fourth recognized area of benefit to instructor immediacy is that it increases students' threshold for work, meaning it enables students to take on or accomplish more work when prompted by the instructor. Finally, instructor immediacy behaviors have a "positive impact across all cultures" (Zhang, Oetzel, Gao, Wilcox, & Takai, 2007).

Instructor immediacy techniques can be used for small and large classrooms. A small classroom setting may be intimidating for some students because of the pressure to interact, whereas a large classroom setting may leave students with the impression that they do not have to interact whatsoever. In a smaller setting, using names, proximity techniques and making time for genuine conversation can ease students' nerves and increase willingness to contribute. In larger settings, using friendly nonverbal techniques such as smiling, including encouraging quotes in PowerPoints, and use of inviting and friendly language can help create a sense of community and welcoming for a larger setting.

Finally, out of class communications, such as online correspondence through email and Learning Management Systems, as well as office hour interactions can also help to create or reinforce perceptions of instructor immediacy. One on one time with students can help them feel important to the instructor and the overall success of the course. Through the use of immediacy behaviors, instructors can create higher levels of learning and course satisfaction.

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McCroskey, J. C., & Teven, J.J. (1999). Goodwill: A reexamination of the construct and its measurement. Communication Monographs, 66, 90-103. DOI: 10.1080/0363779909376464.

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Leadership Behaviors and Experiences of HBCU Agricultural Environmental Science Undergraduates

Quintin Robinson, Virginia Tech

The researchers utilized survey research to describe agricultural education experiences and describe leadership styles and behaviors of Tennessee State University students. Findings of an integrated researcher-developed demographic/experiences instrument and an online version of Avolio and Bass' (2004) Multifactor Leadership Questionnaire (MLQ) will be shared. In brief, TSU agriculture students were more Transactional than Transformational in their leadership style. Implications of findings will be shared as well as additional research questions that need to be answered to establish more connections between leadership experiences and leadership behaviors among students at historically black institutions.

Industry demands graduates with leadership skills, and research even suggests that these skills may ease school to work transitions (Payne, 2018). There is much diversity in conceptualizations of leadership, but there is little leadership research at universities celebrated for diversity. One of the goals of the College of Agriculture at Tennessee State University is to graduate future leaders who can excel in a global society. How do students conceptualize leadership at TSU? Should TSU recruit students with certain leadership education experiences? What types of leadership education will help the institution reach its goals? The transactional-transformational leadership model serves as the Theoretical Framework for this study, and has been highlighted as one of the most important frameworks for assessing leadership capabilities and activities. In fact, Giddens (2018) noted that the transformational leadership style in this model is "characterized by the ability to stimulate, inspire, and motivate followers" (p. 117). This study used the MLQ by Avolio and Bass (2004) to describe the Transformational, Transactional, and Laissez-faire leadership styles and behaviors of HBCU students. A researcher-developed Leadership Experiences Questionnaire (LEQ) was used to identify experiences in the College of Agriculture and the larger university that may or may not have had an impact on leadership style. Tennessee State University agriculture students were much more transactional in their leadership style, meaning as a leader they are more focused on results and conforming to organizational norms where they provide leadership. They scored especially well in the subscale of rewards achievements. A primary recommendation of this study is for those in the College of Agriculture and the university to work harder to develop more transformational leadership behaviors in students.

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Avolio, B. J. and B. M. Bass. 2004. Multifactor Leadership Questionnaire. Manual and sampler set. (3rd ed.). Redwood City, CA: Mind Garden.

Giddens, J. 2018. Transformational leadership: What every nursing dean should know. Journal of Professional Nursing, 34 (2), 117-121.

Moore, L. and R. Rudd. 2006. Leadership style s of current extension leaders. Journal of Agriculture Education, 47(1).

Payne, A. 2018. Assessing post-secondary education graduates' soft skills, job search and employment outcomes. Unpublished master's thesis. University of Guelph.

Leveraging Critical Friendship to Navigate Doctoral Student Role Transitions

Amanda Burbage, Eastern Virginia Medical School; Kristen Gregory, East Carolina University

Doctoral students experience a series of role transitions during their programs: professional to student, student to graduate, graduate to professional. We conducted a collaborative self-study with critical friendship to investigate the influence a critical friendship had on our mindsets during these transitions. We used constant comparative analysis of journal entries and recorded discussions to identify themes and subthemes. Self-study with critical friendship methodology created a deep sense of belonging and continuity between dialogues not present in program-embedded supervisor and group-based peer support. Themes for each transition and implications for higher education programming and assessment will be discussed.

Doctoral students experience a series of role transitions: professional to student, student to graduate, graduate to working professional (Callary et al., 2012; Foot et al., 2014). Cohort-based programs, writing groups, peer mentoring, and supportive supervisory relationships are effective doctoral student support strategies (Bhandari, 2013). Yet, support rarely includes self-regulated learning and self-reflection, a critical tool for successful role transitions (Murdock, 2013).

We conducted a collaborative self-study with critical friendship to investigate the following question: What influence does a critical friendship have on doctoral students' mindsets during role transitions? Collaborative self-study combines aspects of peer mentoring with self-reflection where participants reflect, critique, and reframe practice (Loughran & Northfield, 1996). Critical friends question each other's practice, leading to a deeper individual reflection (Schuck & Segal, 2002).

Anna (pseudonym), a first-year higher education doctoral student, and Katherine (pseudonym), a last-year literacy education doctoral student, participated in this study. We collected 30 shared journal entries (over 26,000 words), and ten recorded and transcribed discussions (320 minutes). We conducted a constant comparative analysis, individually and collaboratively coded the data for initial and focused codes, and identified themes for each transition.

Professional to Student

Transitioning from fast-paced work environments to deliberative student environments intensified feelings of inadequacy. Anna challenged Katherine's mindset of do it all, which led to a shift to do what I can. As a result, Katherine restructured her priorities by enacting a goal-oriented mindset. Katherine helped Anna unpack her feeling of inadequacy after receiving critical feedback in area of self-perceived expertise. Anna gained a better understanding of the emotional toll of a doctoral program and approached future assignments with humility. Further, the quality of personal relationships was negatively impacted by internal pressure to progress on tasks. Critical friendship conversations solidified the importance of prioritizing supportive relationships.

Student to Graduate

We identified the importance of goal-setting to build expertise and boost confidence. Committing to goals with a critical friend added another layer of accountability that positively impacted performance. Katherine shared, "[critical friendship] raised that level of accountability that I haven't had throughout this whole program… beyond what peers and my advisor can do… someone who won't judge me, understands what is happening, but will also say 'pull yourself up by the bootstraps'." Leveraging the space which valued goal setting enabled us to focus on learning from, rather than dwelling on, missed goals.

Graduate to Professional

Having multiple career path options, we each felt uncertain about next steps in pursuing opportunities. We freely explored this paradox of choice within the critical friendship, without pressure to make decisions, and relied on continuity of the conversation to revisit important themes. Ultimately, Katherine sought a tenure-track faculty position while Anna pursued administrative positions.

Self-study with critical friendship methodology created a deep sense of belonging and continuity between dialogues not present in program-embedded supervisor and group-based peer support. University leaders can encourage this cost-neutral approach to supporting doctoral students and identifying gaps in curriculum or services.

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Callary, B., Werthner, P., & Trudel, P. (2012). The lived experience of a doctoral student: The process of learning and becoming. The Qualitative Report, 17(43), 1-20.

Foot, R., Crowe, A. R., Tollafield, K. A., & Allan, C. E. (2014). Exploring doctoral student identity development using a self-study approach. Teaching and Learning Inquiry, 2(1), 103-118.

Loughran, J., & Northfield, J. (1996). Opening the classroom door: Teacher, researcher, learner. London: Falmer Press.

Murdock, J. L., Stipanovic, N., & Lucas, K. (2013). Fostering connections between graduate students and strengthening professional identity through co-mentoring. British Journal of Guidance & Counselling, 41(5), 487-503. doi:10.1080/03069885.2012.756972

Schuck, S., & Segal, G. (2002). Learning about our teaching from our graduates, learning about our learning with critical friends. In J. Loughran, & T. Russell (Eds.), Improving teacher education practices through self-study (pp. 88-101). London: Routledge Falmer.

Life Histories as a Pedagogical Tool to Explore Identity

Suchitra Samanta, Virginia Tech

I assign a semester-long project in my Asian American Experience course where students explore their life-stories. Where most students claim a Eurocentric education in high school, this project fits with course material, such as autobiographical essays, scholarly articles, and films which address this minority's continuing sense of invisibility. Students critically assess course material, in the context of what they discover of family histories. In a final paper they also comment and reflect on their hybrid identities as Asian Americans.

A majority of students in my Asian American Experience course (2000 level) at Virginia Tech are diversely Asian, while some few are biracial, including black/Asian. This largest minority student body on campus explicitly professes its invisibility, and to 'feeling foreign'. A semester-long class assignment requires students to research and reflect upon their transnational, intergenerational histories in a 'life history' paper. I have found this assignment to be a productive learning experience about Asian American identity.

A first set of readings offer guidelines and possible contexts for this assignment. In an anthology of autobiographical essays, we read about, for e.g., a Chinese woman wanting to get out of Chinatown, of wanting to be white; a Pakistani American woman on parental pressures to agree to an arranged marriage; a gay Chinese American student confronting his father's Confucian, patriarchal norms. About two weeks in I provide a general rubric for the paper. Students begin the process with a 2-page essay exploring themes of interest to them (so, not a chronological 'history'), such as gendered differences in parental expectations (including non-cisgender identities); religious constraints and expectations; educational pressures to perform to an "Asian" stereotype; experiences of racism and discrimination; what it means to retain, or lose, a mother tongue. This first set of in-class oral presentations gets students thinking about questions they will explore in more detail, research (talk with family), and focus on in their longer paper, due on the last day of class.

Two-thirds of the way into the semester students read another set of shorter, autobiographical pieces addressing experiences of racism, or generational and cultural differences between a parental, immigrant generation, and Asians born in the U.S. Finally, students read a memoir, which offers the perspective of an American Chinese adoptee's complex experience of searching for, and finding her birth parents.

Besides the texts, above, I also use a text to offer a sociological perspective, on, for e.g., the different 'contexts of exit' to, and trajectories within, the U.S. for diverse Asians; discriminatory immigration laws, and racist violence; Asian American Civil Rights activism; critiques of the "model minority myth"; and professions with a racialized history (Filipina nurses in the U.S.). Documentary films humanize sociological studies. These offer visual perspectives on, for e.g., a long and fraught history of the Chinese in the U.S.; experiences as refugees for different Asians after the war in Vietnam; and Japanese American internment and military engagement during World War II.

My presentation will offer a critique of a Eurocentric learning that excludes Asian histories and experiences in the U.S., and share student reflections from their papers to critically assess how they now negotiate their hyphenated Asian American identity.

MasterChef: The Secret Ingredient to Teach Communication Skills to Non-Majors

Mary Helen Millham, University of Hartford

Undergraduate students in introductory 100-level communication courses designed for the non-major are asked to watch an episode of the reality television show MasterChef. The episode is shown during the class period to demonstrate the communication topics covered in class (i.e., small group dynamics, interpersonal communication skills, leadership, and conflict skills) in a more relatable fashion. Students are quizzed while the episode plays to get their immediate reactions to the episode's twists and turns and are asked to predict outcomes. After class, students later answer more in-depth questions and analyze the communication behaviors they saw during the episode.

This assignment was designed for an undergraduate communication class designed primarily for non-majors. It serves as a bridge between discussing groupwork/small group communication and actually working in groups in class. It allows students to see how the concepts in the textbook can actually play out. The students are shown an episode of the reality television show MasterChef that involves the home cook contestants being divvied up into teams for a high-pressure cooking event. The event could be the 50th Anniversary of Caesar's Palace, the wedding for a previous season's champion, meals for NASCAR track employees, or having to cook the dinner service in the kitchen of a show host's restaurant. Students are tasked with analyzing how the team captains choose their teams and the communication between the team captains and their team. They observe the group dynamics as well as individuals' interpersonal communication with the show hosts/chefs. Assignments such as these allow for an interactive discussion over several class periods and students become invested in the outcomes of the episode. As MasterChef is part of the genre of reality TV, the issues of media literacy as well as the use of tropes and editing for drama are also analyzed.

Regardless of the industry, one of the skills employers look for is communication (www.natcom.org). Most college students who are not communication majors do not realize communication is a skill to be learned just as they need to learn engineering or biology. Many colleges and universities try to rectify this by making a broad introductory communication course part of a core or general education requirement. In highlighting the practical usage of communication over the theoretical and abstract concept of "communication," we can engage the student and show them the importance and consequences of communication. By including pop culture like reality TV shows as part of the curriculum, students can see how leaders need to react to a crisis or how the personalities of group members can affect the dynamics of a group, especially as the stakes get progressively higher. Television shows are primarily created to entertain, but with some forethought, entertaining excerpts and full shows can be used in an effective and educational manner in the classroom. The goal is encouraging discussion while also ensuring an understanding of the communication concepts.

Media Literacy Pedagogy and Minorities: Haitians, More Than Boat People

Louvins Pierre, University of Connecticut

This study encourages the application of a critical media literacy focused pedagogy in higher education to better prepare students to engage with the multicultural society around them. Media has routinely portrayed minorities negatively in news and popular culture. Haitians, a predominantly black Caribbean immigrant group, are used as an example in this research. The following components are presented: a summary of the negative portrayals of Haitians in media; a discussion on how educators can help students develop robust media literacies; and an outline of how students can incorporate cultural sensitivity in their formation of opinions and decision making.

Kellner (1998) stated that having media literacy is essential to navigating the media culture that strongly affect people's world view. This pedagogical research encourages the application of critical media literacy pedagogy in higher education, especially toward coverage of minorities in the media. The world, and the U.S. continue to grow

more diverse. Despite this, non-white groups are often depicted negatively through perpetuation of stereotypes and highlighting of economic and political turmoil. Educators can play an influential role in preparing students to develop proper media literacies to see beyond what the media wants to sell them. By using a critical pedagogy that promotes multicultural education and cultural sensitivity, students should be better prepared to engage with the multicultural society around them. This research will use Haitians, a predominantly black Caribbean immigrant group, as an example of a group routinely portrayed negatively in the news and popular media.

Haiti is often highlighted for natural and economic disasters that encourage their immigration to the U.S. Clitandre (2011) stated that through television, print, and online media, the public is immersed with negative responses to Haiti, the culture, and the people. Both Clitandre and Doucet (2014) stated these negative frames have become more pronounced after the 2010 earthquake. Doucet stated that "reports never failed to signal that this catastrophe had occurred in 'the poorest country in the Western Hemisphere'" (2014, p. 12). For example, Curnutte's (2019) article in USA Today described Haiti as "the most impoverished and environmentally degraded in the Western Hemisphere" (p. 3).

Muralidharan, Rasmussen, Patterson, and Shin (2011) analyzed social media posts about the earthquake relief efforts by nonprofit and media organizations. They found that the media used more negative emotions by framing the narrative around Haiti as conflict stricken to gain attention. Another researcher, Celeste (2013) examined 96 articles covering Haitians from the New York Times between 1994-2004 and identified 206 negative frames and 23 positive frames. The predominant negative frames in Celeste's article were: lack of social responsibility, laziness, dishonesty, and criminality. This line of thinking will continue unless students are prepared to read through the sensationalized stories presented. Educators can better prepare themselves and impart learning techniques that encourage critical examination of media and a broader view of world ethnic/racial/cultural groups.

This work will present several components: a summary of scholarly literature on how Haitians are negatively presented in media; a discussion and suggestions on how educators can support student journeys toward cultural sensitivity; and an outline of how students can better use information to form fair and balanced opinions. While this research uses Haitians as the example, through which these pedagogical issues can be addressed, the critical skill building approach certainly applies to other immigrant groups from the Caribbean, Latin America, and others across the globe. Media brokers will persist in creating insensitive media messages. As educators we can help students develop proper competencies to challenge biased media portrayals and respect an ever-growing multicultural society.

Multicultural Design Competition Raises Student Awareness

Kathleen Parrott, Virginia Tech; Eunju Hwang, Virginia Tech; Mira Ahn, University of Connecticut; Julia Beamish, Virginia Tech; Patricia Fisher, Virginia Tech; Doris Kincade, Virginia Tech; Erin Hopkins, Virginia Tech

The Apparel, Housing and Resource Management Department at Virginia Tech (VT), engaged in a year of study on "Inclusive Communities for Diverse Consumers" in 2018-2019. Among many planned activities was a Multicultural Design Competition, focused on understanding the potential unique and/or diverse needs of multicultural clients. A diverse, multicultural group of collaborators mentoring the students included alumni employed as professional designers and faculty at Texas State University involved in a similar project. A post-project survey of students revealed that the majority of students increased their understanding and priorities with respect to diversity and multiculturalism.

Building on the success of two previous year of study projects (Beamish, Kincade & Anong, 2012), the Apparel, Housing and Resource Management Department (AHRM) at Virginia Tech (VT), engaged in a year of study on "Inclusive Communities for Diverse Consumers" (2018-2019 academic year). The purpose was to enhance students' awareness and understanding of diverse consumers in homes, communities and workplaces, including people from multicultural communities. Among many planned activities was a Multicultural Design Competition, emphasizing diverse and multicultural clients. Today, the professional designer works in an environment where clients, colleagues, and projects are increasingly international, multicultural and diverse classes (Kim, n.d.; Parrott, 2013). Thus, the

competition targeted Residential Environments and Design (RED) majors in three undergraduate residential design classes.

Multicultural Design Competition

The multicultural design competition class assignments focused on understanding the potential unique and/or diverse needs of multicultural clients. Multicultural was identified by factors such as lifestyle, religion, ethnicity, race, rituals, or recent immigration. Assignments included design programming, material and product selections, and designing of residential spaces. There were 45 student enrollments in the three classes, although some students were enrolled in more than one of the classes. Collaborators mentoring the students included alumni employed as professional designers and faculty at Texas State University involved in a similar project. The diverse, multicultural group of mentors included Hispanic, African-American, Asian, and Caucasian professionals.

Evaluation

An anonymous student survey (n=27) helped ascertain the educational value of the Multicultural Design Competition and how it might have influenced the student perceptions and attitudes toward diversity and multiculturalism. Four questions (out of 13) specifically addressed diversity and multicultural issues. Student responses to the specific questions was overwhelmingly positive:

- "I enjoy having discussions with people whose ideas and values are different from my own" (23, 85%, agreed or strongly agreed).
- "Contact with individuals whose background is different from my own is an essential part of my college education" (22, 81%, agreed or strongly agreed).
- "I enjoy taking courses that challenge my beliefs and values" (17, 63%, agreed or strongly agreed).

Twenty-one students offered comments to the open-ended question on how the competition project impacted "your ideas on diversity, inclusion and/or multiculturalism". Nineteen (90%) students offered comments that clustered around a theme that the multicultural design experience influenced their current and/or future ideas. Examples of quotes from these comments include:

- "made me think outside the box about different cultures";
- "allowed me to step outside my own housing bubble";
- "created a deeper understanding and respect for other cultures";
- "broadened my mind";
- "showed me how much a culture can play into the design of a house"; and
- "gave me a greater capacity for empathy".

Summary and Conclusion

The Multicultural Design Competition was an effective method to engage students (Parrott, et al., forthcoming), on multiple levels, in an educational project. A post-project survey of students revealed that the majority of students increased their understanding and priorities with respect to diversity and multiculturalism.

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Kim, H-C. (n.d.). Enhancing multicultural competencies in the interior design studio project. Design Principles and Practices: An International Journal, 4 (6), 87-96.

Parrott, K. (2013, February). Multicultural design projects enhance students' professional preparation. Poster presented to the 2013 Annual Conference on Higher Education Pedagogy, Blacksburg, VA.

Parrott, K., Hwang, E., Beamish, J., Fisher, P., Kincade, D., & Hopkins, E. (forthcoming). Inclusive communities for diverse consumer: Multicultural design competition. Accepted for presentation at the November 2019 meeting of the Housing Education and Research Association, Austin, TX.

Oh Snap!: Using Technology Tools to Build Literacy Skills

Karen Santos Rogers, Trinity Washington University

This poster will present several innovative pedagogical approaches using current technology tools to help build literacy skills and increase educational opportunity for all students.

The purpose of this poster presentation is to provide both relevant research and practical application for incorporating instructional technology to enhance, engage, and support all students, including marginalized populations, in building literacy skills.

The poster will focus on ways today's faculty can use several current technology tools to increase educational opportunities and experiences using interactive multimedia software. It will include relevant research, benefits and limitations of the technology tools, ideas for implementation, and specific examples to demonstrate how these tools can provide an engaging way to explore new ideas and the connections between them to help students of all abilities achieve academic gains in the area of literacy.

Over the past few decades, people have drastically changed the way they access and interact with information. Today's students have grown up with Siri and the term "Google it." Information is readily available at the touch of a fingertip or with a single voice activated phrase. In 2011, Common Sense Media (2011) reported children (on average) start using a computer at 3.5 years of age. Faculty need to be able to use technology effectively as a tool to teach and reach all students in today's classrooms.

According to Bowen (2012), technology can "help bridge the power differential inherent in education;" for students of marginalized populations (p. 31). Research shows that technology can address marginalization, and digital resources have translating capabilities that are unlike traditional methods. Educating young people gives them the option to learn how to use digital technology to advance their education (Hourcade, Bullock-Rest, Schelhowe, 2010). Integrating technology has "reinvigorated curiosity intergenerationally" causing students and faculty alike to explore new opportunities (Addison, 2012, p. 306).

When it comes to technology, faculty have the choice of banning it, ignoring it, limiting it, enhancing it, or transforming it (Johnson, 2010). I believe we should transform it and lead by example, utilizing technology to increase educational opportunity for all learners.

Literacy is the foundation of virtually all other learning and strong communication skills are vital in all interactions, from the classroom to today's global communities. NCTE's (National Council of Teachers of English) 2008 definition of 21st century literacies asserts that students must: build relationships with others to pose and solve problems collaboratively and cross-culturally and design and share information for global communities to meet a variety of purposes. The technology tools presented in this poster will help teachers and learners achieve gains in these areas in order to survive and prosper in today's technology driven world!

Addison, B.V. (2012). Academic care, classroom pedagogy and the house group teachers: 'Making hope practical' in uncertain times. Pastoral Care in Education. 30(4). 303-315.

Bowen, J. A. (2012). Teaching naked: How moving technology out of your college classroom will improve student learning. San Francisco, CA: Jossey-Bass.

Common Sense Media. (2011). Zero to eight: Children's media use in America. Retrieved from http://www.common sensemedia.org/sites/default/files/research/zerotoeightfinal2011.pdf

Hourcade, J.P., Bullock-Rest, N.E., Schelhowe, H. (2010). Digital technologies and marginalized youth: Interaction design and children. 360-363.

Johnson, D. (2010). Taming the Chaos. Learning & Leading with Technology, 38(3), 20-23.

National Council for Teachers of English (2008). NCTE Position Statement. Retrieved from http://www.ncte.org/positions/statements/21stcentdefinition on October 12, 2016.

One Size No Longer Fits All: Introducing Diversity Awareness into Class Projects

Peggy Quesenberry, Virginia Tech; Doris Kincade, Virginia Tech

Consumers with needs different from the mainstream consumer are growing in number, and specialized online retail sources are burgeoning. In an effort to better direct student learning in preparation for the real world and to promote more inclusive thinking in our classes, last year, we began to identify diverse consumer populations and assign these as groupings to students. The results were amazing. Students identified and researched diverse consumer groups. The students were empathetic and realistic about the consumers and their shopping situations. Gone were the fantasy consumers and in their place were real people who had real needs.

In human sciences fields, we often assign student projects where a "consumer," or customer of various services, is the focus of a class project. In the past, to encourage a broadening of awareness we often told students to develop their project around a person who was "not like them," such as not their age or not their gender. This often resulted in students creating fantasy elite consumers who have wealth, social standing and exclusiveness. Even in the world of high fashion this customer is the exception and not the rule. Consumers with needs different from the mainstream consumer are growing in number and specialized online retail sources are burgeoning (Weinswig, 2018). In an effort to better direct student learning in preparation for the real world and to promote more inclusive thinking in our classes, last year, we began to identify diverse consumer populations and assign these as groupings to students. Or we provide more explicit directions such as they must identify a consumer group, who would have difficulty finding clothing in mainstream retail. With some classes, especially lower level courses, students needed some additional direction, using lists available in diversity and multi-culturalism articles (e.g., Afridi, 2019). If the class is small we can identify enough focused populations so that each student has a separate consumer group. The results were amazing. Students identified and researched diverse consumer groups. Many students identified someone they knew, no names provided, and presented in-depth needs analysis, product descriptions, and quotes from interviews. The students were empathetic and realistic about the consumers and their shopping situations. Gone were the fantasy consumers and in their place were real people who had real needs. In addition, the students reacted positively to the oral reports from their classmates and shared feelings as well as discussed product specifications.

Afridi, M. M. (2019). Multicultural and diversity: Guide for students: The importance of attending an inclusive school. Community for Accredited Online Schools. Retrieved from https://www.accreditedschoolsonline.org/resources/student-diversity-multicultural/

Weinswig, D. (2018, June 27). One size does not fit all: The fashion industry is missing a nearly $300 billion global opportunity. Forbes. Retrieved from https://www.forbes.com/sites/deborahweinswig/2018/06/27/one-size-does-not-fit-all-the-fashion-industry-is-missing-a-nearly-300-billion-global-opportunity/#24ee14912b61

Optimization of Multidisciplinary Educational Experience in Food Product Design

Georgianna Mann, University of Mississippi; Alex Lopez, University of Mississippi; Caroline Crosby, University of Mississippi; John O'Haver, University of Mississippi; Kritika Gupta, University of Mississippi

This multidisciplinary project spans two courses in nutrition and chemical engineering to develop, test, and scale up a food product. This poster describes differences between students engaged in multidisciplinary project design and the nutrition-only project. Gaps in student experiences are addressed and novel ideas to enhance the program are discussed. This multidisciplinary project can provide students with unique experiences to better prepare them for the food manufacturing workforce.

Multidisciplinary experiences in higher education can provide valuable skill development and have become increasingly popular due to the complex nature of the world's largest problems. These multidisciplinary experiences can be delivered in many forms with effective outcomes such as soft skill development, critical thinking skills, and a broader understanding of multiple disciplines.

The current project was a collaboration between two upper level undergraduate courses: Experimental Foods (Nutrition) and Plant Design II (Chemical Engineering). Through this project, students were charged with creating a child-friendly food product. Nutrition students were responsible for the formulation and consumer testing, where chemical engineering students were responsible for creating an efficient production process for large scale production of 10 million units per year. The project was designed to offer students experiences that would be valuable for potential careers in the food industry, a need expressed by student alumni. Additionally, this project would give students a broader understanding of the food industry, product development, and food marketing.

This research study is a comparison of course perceptions held by Nutrition and Engineering students. One section of Experimental Foods without the multidisciplinary elements was compared to a subsequent offering that contained the multidisciplinary collaboration with Plant Design II students. Students enrolled in fall 2018 (nutrition only) and spring 2019 (nutrition and chemical engineering) were given surveys to complete at the beginning and end of the course. The survey was based on the Interprofessional Socialization and Valuing scale (IVS-21). Comparisons of student perceptions pre- to post- in fall (n=14) and spring (n=49) were completed using paired t-tests.

The results of the comparative study indicated that students in all sections became more aware of their own preconceived ideas and group roles, became more comfortable acting as a team leader, and were confident in their ability to design a process to meet needs within specific time restraints. In the fall group of nutrition only, students expressed more comfort with sharing ideas in a team, speaking out when needed, accepting responsibility, and sharing decision-making roles. Students in the multidisciplinary section uniquely gained awareness of the roles of other members on their team, and expressed comfort in clarifying misconceptions about their own profession.

Students engaged in the multidisciplinary project certainly experienced growth, yet students in fall also experienced similar growth. While there were pleasing outcomes with the multidisciplinary efforts, it seems that students in the fall course gained more teamwork skills which could be due, in part, to the very small class size. Based on these results as well as student feedback, the courses have been redesigned to include more in-class multidisciplinary opportunities to eliminate the need for students to attempt to collaborate outside of course scheduling. The courses will include joint lectures, combined course time to work on the project together, and students will work together earlier in the product development process, rather than chemical engineering students acting merely as consults.

Eliot, K. A., & Kolasa, K. M. (2015). The value in interprofessional, collaborative-ready nutrition and dietetics practitioners. Journal of the Academy of Nutrition and Dietetics, 115(10), 1578-1588. https://doi.org/10.1016/j.jand.2015.03.025

King, G., Shaw, L., Orchard, C., & Miller, S. (2010). The Interprofessional Socialization and Valuing Scale: A tool for evaluating the shift toward collaborative care approaches in health care settings. Work, (1), 77-85. https://doi.org/10.3233/WOR-2010-0959

Kusnoor, A. V., & Stelljes, L. A. (2016). Interprofessional learning through shadowing: Insights and lessons learned. Medical Teacher, 38(12), 1278-1284. https://doi.org/10.1080/0142159X.2016.1230186

Profiles in Courage, "Ganas," and Belonging at a Major University

Diana Rios, University of Connecticut; Graciela Quinones-Rodriguez, University of Connecticut

It takes courage, "ganas" (ambition) and a sense of higher education belongingness for a student to conquer the first year at a research institution. The premiere La Comunidad Intelectual (LCI) stands out among similar learning communities of its kind across the U.S. LCI nurtures culturally diverse students, strengthening their courage, "ganas", and sense of belonging. These concepts, and similar, are connected to Latinx academic achievement. The term, "ganas", for example, declares a cultural rootedness felt by Latinx-Caribbean students who feel fueled and obligated by self, family, and community dreams. Hopefully, other universities will establish learning communities.

It takes courage, “ganas” (ambition) and a sense of higher education belonging for a young student to conquer the first-year experience at a major research institution. The premiere La Comunidad Intelectual (LCI) is the first living-learning community of its kind at the state’s flagship research university. It stands out among similar learning communities of its kind across the United States. LCI nurtures culturally diverse students, strengthening their courage, “ganas”, and sense of belonging. These concepts, and similar, are connected to Latinx academic achievement (Rodriguez et al., 2013; Easly et al., 2012; Auerbach, 2006). The term, “ganas”, for example, declares a cultural rootedness that is felt by Latinx-Caribbean students who feel fueled and obligated by self, family, and community dreams. Students need to feel an air beneath their wings. Learning communities that mimic a small-college atmosphere (Blimling, 2015) are important for student adjustment into a home-away-from home on a big campus. A multi-prong support system and “ganas” gears a student toward success. In our historic sixth year, the learning community has grown and matured. LCI faculty and staff leadership are solid. LCI alumni, on and off campus, contribute their time and inspiration. Student leaders reach for higher and broader cultural, and professional activities to support the emerging intellectualism of “house” members. This Latinx-Caribbean themed community has flourished, despite a negative political atmosphere which is antagonistic toward Latinx populations. It charges on, in the face of hate crimes such as the slaughter of Mexican heritage people in El Paso, Texas in June of 2019. Importantly, LCI extends friendship and welcome through its activities to many others in search of cultural warmth and belonging in a predominantly white institution. Overall, learning community components support courageous journeys for academic achievement, leadership, community service, social and political consciousness, and professional success. This research will apply biography-of-work techniques by LCI co-directors and founders. Voices from LCI student leaders and alumni will figure prominently as core of this self-examination and case study. We shall also use archive note materials from the past five years. To provide larger context, the research will highlight recent trend data on underrepresented students in the United States.

Auerbach, S. (2006). “If the student is good, let him fly”: Moral support for college among Latino immigrant parents. Journal of Latinos and Education,5, 275-292. doi:10.1207/s1532771xjle0504_4

Blimling, G.S. (2015). Student Learning in College Residence Halls: What Works, What Doesn’t, and Why. San Francisco, CA: Jossey-Bass.

Easley, N., Bianco, M., & Leech, N. (2012). Ganas: A qualitative study examining Mexican heritage students’ motivation to succeed in higher education. Journal of Hispanic Higher Education, 11, 164-178. doi:10.1177/1538192712440175

Promoted Online Tutorial Use in General Chemistry

Timothy Champion, Johnson C. Smith University; John Bannister, Johnson C. Smith University

Promoting student success in entry-level STEM courses is a continuing area of interest. While the success of tutoring is well-documented as a “two-sigma” improvement over group instruction, the ability to offer one-on-one tutoring is beyond the budget of most colleges.

Online tutoring is a more cost-effective option; however, students don't seem to utilize these resources as much as they could.

This two-year study involved promoting the use of an online tutorial resource in college general chemistry classes. Outcomes examined include: specific effects of tutorial assignments on subsequent quizzes and effects on use of online tutorial resources in subsequent terms.

Promoting student success in entry-level STEM courses is a continuing area of national and international interest. The urban small university where these studies were conducted has a contract that allows students to utilize an online tutorial service. While the success of tutoring is well-documented as a “two-sigma” improvement over group instruction (Bloom, 1984), it is our perception that students do not utilize this resource as effectively as they might.

The purpose of these studies was to apply strategies to promote student utilization of tutoring resources, especially Smarthinking and examine the resulting data for increased student success on course-based tests and quizzes and

increased utilization of tutorial resources, and the specific evidence of interventions provided by student-tutor whiteboard records. The hypothesis was that better utilization of tutoring will improve student success in classes.

In General Chemistry I and II classes taught by the lead author of this study, a series of online quizzes were developed. Usually based on questions released for public use by the American Chemical Society Division of Chemical Education Examinations Institute, these quizzes required students to have a synchronous online tutorial session. The student received full credit for the quiz for uploading the record of the tutoring interaction (a "whiteboard" printout).

These online quizzes were correlated to specific in-class quizzes and to specific mid-semester exams. The effect of participation in the tutoring experience on the grades on these subsequent assignments are analyzed.

Another analysis was conducted of the effect of participation in the tutoring experience on the end of course grade.

Finally, the effect of the experience on students' use of the online resource was examined by comparing students use in the semesters prior to and subsequent to the experience of participating in these classes that required the online tutorial quizzes.

Bloom, B. (1984). The search for methods of group instruction as effective as one-to-one tutoring. Educational Leadership, 31 (8), pp.4-17.

Promoting Universal Design for Learning (UDL) through College STAR Resources

Jennifer Williams, Eastern Carolina University

This poster session will feature College STAR resources based on the framework of Universal Design for Learning (UDL) that demonstrate a variety of instructional strategies in higher education. College STAR is a network of individuals, campuses, and organizations focused on learning how postsecondary campuses can create welcoming learning environments for students with learning and attention differences. The presenter will highlight resources such as modules, case studies, professional development sessions, video clips, and podcasts that feature the integration of UDL principles. Opportunities for faculty participation in the development of College STAR resources to address learner variability will be shared.

The College STAR network seeks to infuse the principles of Universal Design for Learning into as many classrooms, offices, and resources as possible on our college campuses today. This is a lofty goal, but one that we feel can make a significant difference for all students - including those in the margins due to learning and attention differences.

Universal Design for Learning: The educational leaders at CAST developed the framework of Universal Design for Learning (UDL) "to improve and optimize teaching and learning for all people based on scientific insights into how humans learn." The College STAR initiative seeks to apply the principles of multiple means of engagement, multiple means of representation, and multiple means of action and expression to our college campuses. A repository of free resources has been created through this initiative funded by the Oak Foundation.

Staff and faculty may have a strong interest in learning more on how to support student success by integrating UDL, but time is often a barrier to further that knowledge and practice. Faculty and staff need resources that can be quickly accessed that are not limited by availability and cost. College STAR resources are available in a variety of formats (modules, case studies, video clips, podcasts) and feature UDL principles in action. Additionally, staff and faculty may have ideas that contribute to the infusion of UDL but may not have a way to showcase and highlight them. College STAR seeks to partner with staff and faculty to build that repository of resources. Beyond the development of resources, College STAR is focused on supporting communities of learning and networking to promote multi-campus collaboration.

Professional Development Modules & Case Studies: College STAR professional development modules and case studies are organized around the three principles of Universal Design for Learning and our goal is to build a repository

of examples of UDL in action in as many different disciplines, campus settings, and college environments as possible. Each case study/module contains a description of its alignment with the principles of UDL and practical information to help you know how to try that specific strategy or approach on your campus or in your classroom.

UDL 3-2-1 Videos: UDL 3-2-1 Videos showcase specific practices of faculty and staff that align with the principles of UDL. UDL 3-2-1 Videos focus on at least one of the 3 principles of UDL, take only 2 minutes to watch, and allow viewers to learn 1 great idea for implementation.

Think UDL Podcasts: ThinkUDL is a podcast about Universal Design for Learning where we hear from the people who are designing and implementing strategies in post-secondary settings with learner variability in mind. Host, Lillian Nave, discovers not just WHAT her guests are teaching, learning, guiding and facilitating, but HOW they design and implement it, and WHY it even matters!

Center for Applied Special Technology. (2007). Teaching every student: Getting to know you the UDL way. Retrieved from http://www.cast.org/teachingeverystudent/tools/studio.cfm?t_id=12&stepl

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Re-envisioning Critical Multicultural Art Education Curriculum Through Socially-Engaged Art

Kihyun Nam, University of Georgia; Jeeyoung Chun, Virginia Tech

The purpose of the study is to re-envision an art education curriculum through critical multicultural education to provide students opportunities to investigate their identities, relationships, and citizenship. This curriculum will utilize for college-level art education students and the students will create socially engaged artworks in response to their learning and teaching. Through the critical multicultural art curriculum and socially engaged art projects, students will explore not only their cultural self-identities, relationships but also will motivate their civic engagement within their community.

Despite the ongoing effort to confront the multicultural and diversity issues, the art education curriculum in higher education in the U.S institutions still tend to focus on the dominant culture. This study has three main research objectives: 1) to re-envision and re-imagine the art education curriculum through critical multicultural education to discover their cultural self-identities, 2) to provide students to investigate their social relationships within their community, and 3) to involve students in a socially-engaged art that promotes their civic engagements. This project will take place in Spring semester 2020 through ARED Multicultural art education course.

Critical multiculturalism provides the theoretical framework for this designing curriculum. According to Acuff's (2015) definition, critical multiculturalism combines the original goals of multiculturalism with updated, contemporary goals such as critiquing power and addressing cultural subjugation. Acuff (2015) emphasizes that these goals should be at the forefront of art education. Critical art multiculturalism can be achieved through socially engaged art curriculum and pedagogy.

A socially engaged art education has cultural and educational benefits for students of a marginalized culture who are coping with forming their cultural self-identity while living under the dominant culture. Cultural stimulation and critical thinking in art education may influence students to understand cultural differences and recognize the value and importance of their heritage culture. Thus, a multicultural curriculum that employs socially engaged art practice could be more equitable and inclusive. Furthermore, socially engaged art can increase students' awareness of their own cultural self-identity. This awareness can help prepare culturally marginalized students to have a positive cultural self-identity. Art projects can allow students to investigate and to recognize the importance of their social relationships with the social institutions in their community. Therefore, this socially engaged art education curriculum could be an effective tool for re-thinking art education.

This socially engaged art curriculum is designed for art education-major students in a university. Through this art project focusing on contemporary art, students could explore and understand their cultural self-identity and their social relationships within their community. The pedagogy was aimed at re-imagining art education in order to break from

the existing approach and provide a socially engaged art experience for the students. Through this multicultural curriculum, students will be given opportunities to discover their social connections and increase their awareness of how they engage with the various social institutions in their community.

Acuff, J. B. (2015). Failure to operationalize: Investing in critical multicultural art education. Journal of Social Theory in Art Education, 35(1), 4.

Research Abroad Impact on One Health and Intercultural Competence

Alisha Farris, Appalachian State University; Alison Collins, Appalachian State University; Zachary Farris, Appalachian State University; Adam Hege, Appalachian State University

In health and ecology professions, research abroad experiences can potentially deepen student learning on One Health and Intercultural Competence. This study evaluated the impact of a research abroad experience in Madagascar on those concepts through a survey. Students reported improved confidence in the understanding of all One Health and Intercultural Competence concepts measured, with the largest improvement in how One Health related to research, and identifying contrasts between social classes and inequality challenges. Suggestions for improvement included structured discussions between fields and assignments relating to One Health. These results will be impactful in designing experiences for future research abroad students.

Background: In the health and ecology professions, transformative student learning around the concepts of One Health and Intercultural Competence is vital to developing competent future professionals who can examine population health problems through a collaborative lens. Student research or study abroad has long been shown to correlate with meaningful learning through exposure to novel geographies, cultures, and worldviews, but little is known about its impact on One Health approaches and deepening intercultural competence. One Health, recognizes that the health of people is connected to the health of animals and the environment, and that solutions to health problems lie in collaborative approaches that draw on expertise from many disciplines. One Health approaches have widely been recognized as essential to solving complicated health issues locally and globally. Additionally, as the world becomes more culturally diverse, providing culturally appropriate health and environmental recommendations and/or programming has been shown to be more effective than general population recommendations. Engaging students in research abroad is a unique avenue for pushing students beyond meaningful transformative learning to a deeper understanding of One Health and intercultural competence.

The aim of this study was to evaluate the impact of a research abroad experience on transformative student learning around the concepts of One Health and Intercultural Competence.

Methods: Students who participated in a One Health research abroad experience during the summer of 2019 in Madagascar were recruited to complete a survey on aspects of transformative learning, One Health knowledge, and intercultural competence. Descriptive statistics were used to evaluate differences in answers. For Likert scale questions, frequency of agreement was determined by combining responses from “agree” and “strongly agree” for each factor.

Results: A total of 11 students (78.6% response rate) completed the survey with the majority identifying as female (81.8%) and white (90.9%). Only one student had not traveled internationally prior to participating in the research abroad. The majority of students (72.7%) were from a nutrition major. For One Health competencies, students reported improved confidence in the understanding of all concepts, with the largest improvement in understanding how One Health related to the research, and least improvement in the understanding of how environmental health impacts human health. For Intercultural Competence, students reported improved confidence in all concepts, with the largest improvement in identifying contrasts between social classes and the challenges of inequality. Suggestions for improvement included structured discussions and reflections between fields and assignments or readings relating to One Health.

Conclusion: Evaluating One Health research abroad experiences will enhance educational opportunities offered to students, optimizing learning impacts, preparing students globally for their future professions, and putting them at the forefront of the health and ecology professions. These results will be helpful in designing impactful learning experiences for future research abroad students.

Revamping a Research Course to Improve Scientific Literacy Among Students

Alexa von Dohlen, Johnson C. Smith University

A fundamental skill for becoming a scientist is the ability to read and understand the primary literature. This is, however, one of the greatest challenges facing students. The Parasitology Research course, offered for the second time at Johnson C. Smith University, was redesigned to emphasize comprehension and evaluation of the primary literature to improve students' scientific literacy. Student learning was assessed by a retrospective pre-post assessment of students' knowledge of learning. Preliminary analysis of student responses suggested the students increased their ability and confidence in critically reading the scientific literature.

A fundamental skill for becoming a scientist is the ability to read and understand the primary literature. This is, however, one of the greatest challenges facing students. Preparing biology undergraduates for graduate/professional schools or careers in STEM requires students to be proficient in hands-on research skills as well as being scientifically literate. The Johnson C. Smith University (JCSU) Quality Enhancement Plan (QEP) was developed to foster a culture of undergraduate research by incorporating basic research skills into the curriculum. As part of the QEP, a research-based undergraduate parasitology course was created in Spring 2018 to improve these skills among biology majors at JCSU. The course focused on diagnostic tests for parasitic diseases. The Parasitology Research course, offered for the second time at JCSU in Spring 2019, was redesigned to emphasize comprehension and evaluation of the primary literature to improve students' scientific literacy. This work describes the redesigned course which highlighted critically reading and critiquing the primary literature in conjunction with benchtop research skills. The class met once weekly for three hours split into lecture time to describe the diagnostic test methodology and laboratory time for students to conduct the test. Before each class, students were given a journal article that included that week's diagnostic test as part of the methodology. Students completed a corresponding assignment answering questions about each basic part of the article. Every class started with discussion of the article to ensure that students learned strategies for reading scientific articles and became comfortable with the process. Student learning was assessed by a retrospective pre-post assessment of students' knowledge of learning. Student responses showed significant gains in students' perceived progress in research skill development and confidence in their ability to conduct research. Preliminary analysis of results suggested the students increased their ability and confidence in critically reading scientific literature.

Solutions to Facilitating Online Groups

Eunice Ofori, Virginia Tech; Brenda Snider, Lincoln University

Create collaborative learning via online groups! Through groups, students learn to interact with each other and appreciate the ideas of others. Engaging students through groups prepares students for how we work and live. As the instructor, how do you design and manage online groups? Join us for this poster session as we discuss and share techniques and tools for designing and managing online groups. Before you attend the session, you may participate in an optional brief survey about your experience in online group work by scanning this QR code.

Learning in groups is an essential skill in the workplace that should be encouraged in the teaching and learning process. Participating in group work is a crucial pedagogical tool in the online classroom, allowing for student to student interaction and in term foster active learning (O'Neill, Scott, & Conboy, 2011).

The role of the instructor in online learning is pivotal to the learner's success in the course. According to Vonderwell and Turner (2005) “Instructor involvement and engagement in online learning is crucial. Online learning requires instructors to take on active roles in facilitating students’ learning. As well as peer support, instructor presence in supporting and guiding students’ learning and engagement are important for enabling active learning” (p. 82). Effectively planning and executing online group work will assist learners in succeeding in the course and in future endeavors.

To ensure that online learners experience the same quality education as that of their face-to-face counterparts, team building and collaborative learning are essential. As of fall 2016, there were over 6.3 million students taking at least one distance education course, which is inclusive of 31.6% of all higher education enrollments (Seaman, Allen, & Seaman, 2018). In fact, the article states that “The number of distance education students grew by 5.6% from Fall 2015 to Fall 2016 to reach 6,359,121” (Seaman, Allen, & Seaman, 2018, p. 3).

This poster presentation will address faculty preparation, execution and types of technology to use in online group work. We will emphasize the importance of teamwork in online group learning and how instructors may inspire collaboration. We will elaborate on preparation and execution strategies along with technology tools that could be used to facilitate online group work and encourage team building. The purpose of this poster is to help faculty in designing and managing group work in an online environment. A literature review will be conducted and used to gather information for the session.”

O’Neill, S., Scott, M., & Conboy, K. (2011). A Delphi study on collaborative learning in distance education: The faculty perspective. British Journal of Educational Technology, 42, 939-949.

Seaman, J., Allen, I., & Seaman, J. (2018). Grade increase: Tracking distance education in the United States. Retrieved from Online Learning Consortium website: https://onlinelearningconsortium.org/

Vonderwell, S. & Turner, S. (2005). Active learning and pre-service teachers’ experiences in an online course: A case study. Journal of Technology and Teacher Education, 13(1), 65-84

Student Performance in Online vs. Traditionally Taught Principles of Accounting

Nadia Nafar, Virginia Wesleyan University

This poster examines the differences in student performance among online sections and between online and traditionally taught sections of Principles of Accounting.

We examine the difference in student performance for all sections of Principles of Financial Accounting taught by one professor during the three academic years: 2017, 2018, and 2019. During each of the semesters the professor taught one section online and one traditionally. We plan on exploring the differences in student performance using student grades as the study variable among the online sections and between the online sections and the traditionally taught classes. We also explore the role of demographic factors (gender, race/ethnicity and age) and other factors that may explain differences in student performance. We expect this study to give insights and recommendations that administrators and faculty should heed in designing accounting online classes and more importantly implementing admission standards to online courses.

Teaching Inclusivity and Advocacy Through Creative Expression

Donna Westfall-Rudd, Virginia Tech

In a course that explores the critical analysis of identity and inclusion, students research the experiences of underrepresented populations in the US food system to create their response to a challenge of inclusion. An assignment entitled, It’s You’re Thing - Express Yourself, encourages students to develop a creative message regarding an issue of inclusion in the food system to the general public. Project examples include visual arts, poems, music, or other creative outlets.

Course projects then become part of a campus exhibit. The intention is to develop the knowledge necessary to become advocates for others.

This session will offer participants an opportunity to learn about the strategies being used to bring the issues and challenges of inclusion of all identities into the US food system into the discussion of developing the skills and knowledge necessary to become advocates for others. The session will be designed to include a brief overview of the presenter's teaching strategies, examples of current student work, and the development of public displays on the university campus to showcase the student messages.

Participants will engage in guided small group discussions about the shared strategies and how those strategies, as well as others offered by participants, could be adopted or modified to align with their curriculum focus. An emphasis will be placed on discussing how faculty can work within their existing library and campus communication systems to showcase exemplary student work that is relevant to all of the campus community.

The Impact of Learning on Healthy Behaviors

Conrad Tyrell, Appalachian State University; Danielle Nunnery, Appalachian State University; Alisha Farris, Appalachian State University

Universities have been identified as avenues to impart health education to reduce the risk of chronic disease later in life. The aim of this study was to measure the impact of a general education nutrition and health course on the diet/physical activity behaviors of students through a survey. Positive health behaviors increased, such as decreasing sugary beverages, decreasing the consumption of dessert items, increased water intake, and increased exercise. College is an important time to solidify lifestyle behaviors. Courses focused on health can help students better understand how to implement positive health practices and to influence long-term health outcomes.

Background: College represents an important time period for establishing behaviors that often track further into adulthood and potentially have positive or negative health consequences. Universities have been identified as avenues to raise health awareness and education to reduce the risk of chronic disease later in life. Barriers such as lack of nutrition knowledge, social norms, and time have contributed to lower fruit and vegetable intake, as well as increased fat and sugar intake in the student population. Research shows students are empowered to make healthy behavior change when provided the necessary skills and knowledge needed to make those changes. A very large proportion, 92%, of students are receiving most of their nutrition knowledge from classes in school, but little is known about the impact of that nutrition knowledge. Due to these factors, education on the importance of a healthy diet and promoting healthy behaviors in Intro to Nutrition classes are warranted.

The aim of this study was to measure the impact of a general education nutrition and health course on the diet and physical activity behaviors of college students enrolled at a university in rural North Carolina.

Methods: Students enrolled in a Nutrition and Health course during the Fall 2018 semester were recruited to participate in an anonymous online questionnaire. Questions focused on their perception of health, current practices, and any changes in lifestyle and dietary behaviors since beginning their nutrition class. Questionnaire data was analyzed for frequencies and descriptive statistics and paired t-tests were performed.

Results: A total of 41 students completed the questionnaire, the majority (74.5%) identifying as female and white (89.7%), and freshman (66.7%). Positive health behaviors significantly increased, such as decreasing sugary beverages ($p=0.03$), decreasing the consumption of dessert items (p

Conclusion: Courses focused on health can help students better understand how to positive health practices. Since college is an important time to solidify lifestyle behaviors, and due to increasing chronic disease, classes like this are vital to influencing potentially long-term health outcomes. More research is needed on the impact of this course long-

term on behavior change, and warrants further investigation among universities with varying demographics and student populations.

The Redesign of a Research Methods Course for Adult Students

Kathy Clarke, James Madison University; Windi Turner, James Madison University

Adult learners returning to college want curricula that meets their unique needs. At James Madison University, leadership changes in the Adult Degree Program afforded an opportunity to review curriculum and develop a more scaffolded approach to learning for this undergraduate student population. As part of the curricular re-design, the required senior capstone project was transformed into an interdisciplinary research course culminating with a research symposium. In this session, the context of an adult degree program in higher education will be presented and the benefits of shaping curriculum to meet the career and educational objectives of adult students will be framed.

James Madison University (JMU) is among 16 institutions of higher education in Virginia offering adult education programs. In 1977, JMU created the Adult Degree Program as an interdisciplinary program specifically for adult students to complete the Bachelor of Individualized Studies (BIS) degree. By design, the BIS has a loosely prescribed curriculum offering a broad interdisciplinary education through classes both online and on campus. The flexibility of the program allows students to tailor their concentrations to meet their specific education and career goals.

During the recent process of changes in program curricula, the senior capstone project was revised from an independent study guided by an individual faculty member into two distinct research methods courses. The three-credit course guides students through the process of developing research questions to the study proposal by semesters' end. Students engage in the process of conducting a literature review, develop refined research questions, and identify a method for data collection. The six-credit section of this course is built on the same content but allows students to go further by completing institutional review board (IRB) certification, gathering data, and reporting the results of their research study. The culminating experience for both courses is a research symposium to which students create a poster and present their project before a group of evaluators. This aligns with capstone projects and/or learning experiences in other JMU undergraduate programs.

Prior to the curriculum revision, many projects lacked a robust research process, thus indicating a need to make changes in this required element of BIS degree completion. Since the changes, feedback from students in the three-credit section has indicated that they are now afforded the opportunity to test-drive a research project of their own that is reflective of their individual interests. Students in the six-credit section reported the value of adding their research findings to their profession. Exposing these students to academic research methods with a topic that somehow relates to their lives (personal or professional) connects research processes to a real-world setting. The course works to create visible links between research, theory, methods and real-world application.

The goal of this session is to provide participants with the context of an adult degree program in higher education, the benefits of shaping curriculum to meet the career and educational objectives of this undergraduate student population, and the challenges of making curricular changes in an established adult degree program. Before and after examples in addition to progress in curriculum revisions will be shared.

The Simplicity and Effectiveness of Structural Alignment: A Data Story

Matthew Louvet, Virginia Tech; Larry Cox, Virginia Tech; Taha Hassan, Virginia Tech

Online courses taken through a rigorous quality assurance process focused on creating an overall course structure aligned from beginning to end benefit from the process and are more beneficial for students. The collection of particular click data from your LMS will show if your course design

and structure are making an impact on your students and the way they view the course. An idea in studying depth of use (DOU) as an additional reference for course evaluation.

Online courses can benefit from a quality assurance process facilitated by a person or group of people including the instructor. Using a standardized widely accepted process benefits everyone because it is built on best practices in distance education by a nationally recognized entity. An LMS can provide valuable information to an instructor in the form of click data. Looking at what sections and information students click on and view can be valuable as an internal review of your course. Using depth of use (DOU) as an external evaluation can provide insight into what students use the most and what they do not use in your course as it is offered to them via the LMS. Applying design changes to the course and using DOU again allows for a comparison to see if your changes have affected highly used areas in a negative aspect or if they have affected low use areas in a positive sense. The presentation will show how the application of a structured instructional design process to restructure courses in a fundamentally aligned format can increase the DOU for your course, improve the level of interaction during the course and improve the student experience during the course. The presentation will explain the elements of alignment and why that is important to the instructor and ultimately the students. Data will be presented in limited quantities to show effectiveness of the applied quality assurance process in conjunction with alignment within the course. The data are from existing courses in an established distance learning program within our institution and compare student clicks before and after the course completed an offered quality assurance process. The experience level of the instructors varies from 1-2 semesters to several years teaching at a distance.

Transforming Trauma-Informed Training Through the Use of Story

Alicia Williams, East Tennessee State University

The presenters will discuss an innovative instructional strategy used to teach trauma-informed care to a family medicine residency clinic. The how's and why's of the design and presentation of this training will be discussed. Attendees will learn how trainers employed several teaching methods to hold trainee interest and soften the heaviness of the topic matter. Finally, attendees will participate in the experiential activities that trainers employed in a family medicine residency clinic and will leave the training with examples of activities they can use to develop their own trauma-informed training. Materials used in this training can be triggering for some.

More and more emphasis is being placed on institutions becoming trauma-informed; however, trauma-informed trainings can be lengthy and quite heavy in topic matter. The proposed presentation will describe how three presenters transformed a four-hour didactic training by adding videos, discussion, and experiential activities to maintain trainees' attention and provide rests from the emotional heaviness of the topic matter. In particular, the presenters will discuss how the use of story interwoven throughout the training can both lighten the discussion and help build empathy for victims of trauma. Attendees at this training will participate in the experiential activities that the presenters used in a family medicine residency clinic to train staff, faculty, and residents in how to be a trauma-informed practice and learn how they can adapt this training for other settings.

Note: Some of the materials in this training can be triggering for some. Pre-presentation warnings about this potential as well as closing remarks about seeking support if triggered will be included in this training.

First, attendees will participate in the pre-activity that trainees used to open the trauma-informed training for the residency clinic (3 minutes). Next, presenters will discuss the first of the three modules of the training including Substance Abuse and Mental Health Services Association approved training materials. Select slides and videos from the first module will be shared (7 minutes). Next, attendees will participate in the first phase of an interwoven experiential activity on the use of story* in building empathy for trauma victims (3 minutes). Afterward, presenters will provide a glimpse of module two on the discussion of ACEs sharing select slides and videos (7 minutes). Then, attendees will participate in the second phase of the interwoven experiential activity on the use of story in building empathy for trauma victims (3 minutes). Thereafter, the third module will be discussed including preventing burnout when dealing with trauma and how these training materials can be adapted for a variety of training settings (7 minutes).

Next, attendees will participate in the final phases of the interwoven experiential activity on the use of story in building empathy for trauma victims, and presenters will discuss the facilitation of the debriefing of this activity (10 minutes). Afterward, attendees will participate in a closing activity to promote empathy and self-care in the prevention of burnout in working with trauma (10 minutes). Finally, attendees will be given time for discussion or questions (10 minutes).

Transitioning to Digital Recruitment for Institutions of Higher Learning

Michael R. Williams, Virginia Tech

College recruitment is associated with financial, social, and psychological benefits for both the individual and society. Institutions are creating social media profiles to reach new prospects and to stay in contact with current students and alumni (Fuller, & Pittarese, 2012). Yet, these benefits do not come at a low price for many, the cost of recruitment for many colleges and universities can cause a burden for enrollment management. This session investigates Twitter as the new medium for college recruitment.

Post-secondary education is associated with financial, social, and psychological benefits for both the individual and society. Universities and colleges are creating social media profiles to reach new prospects and to stay in contact with current students and alumni (Fuller, & Pittarese, 2012). Yet, these benefits do not come at a low price for many financial institutions, the cost of recruitment for many colleges and universities can cause a burden for enrollment management. Adopting new technologies, posting from mobile devices, and learning how to engage students have given rise to a new kind of personal (and professional) brand (Stoller, 2013).

With the declining status of federal and state-level funding for higher education, successful marketing of undergraduate and graduate research programs to potential donors and strategic alumni members can help universities to navigate the troubled economic waters produced by a shortage of scholarships, grants, and accessibility to lab equipment (LaPlant. 2011). With the technological advancements of social media and mobile devices, having information accessible to your fingertips at any time of the day at incredible speed eases the tension many first-year students might have when it comes to searching for answers about arriving at a new institution. When Twitter debuted in 2006, it represented a new form of social media. By combining the simplicity of a Facebook-like status update, a 140-character (recently updated to 280- characters) posting restriction, and a more open platform, Twitter reinvented how we engage through digital conversations and advertise to prospective students and parents (Stroller, 2013).

Twitter serves as a news outlet, repeating allowing college/universities the abilities to host conversations with by either mentioning the follower or using a hashtag. Twitter has an inextricable link with brands, and this link makes it a valuable social platform for brand communication measurement (Rutter, Roper, & Lettice, 2016). Institutions release information directly linking twitter followers to the university web page, thus increasing awareness of important dates, scholarships, and breaking news. The need to inform prospective students about the resources available on campus has moved beyond the admission letters and postcards. Students are in dire need to engage campus representatives at the medium that is easily recognizable to them.

Unconscious Political Bias in Classroom Pedagogy

Joseph Mack, Virginia Tech

Even in today's politically stratified age, colleges remain the workshop where the future of the American political system is being created. Ideally, that process includes discussion and the exchange of ideas. As such, instructors are expected to be the orchestrators of respectful debate. Yet, are instructors fostering an educational pedagogy of inclusiveness that allows students to feel comfortable expressing their opinions? Or are instructors, via unconscious bias, creating a norm

where one prevailing opinion holds sway? This study aims to engage that question by defining what an inclusive pedagogy is, and what the challenges to establishing that pedagogy are.

Colleges and the instructors that teach the upcoming generations of American and world citizens are, unfortunately, left with the challenge of traversing the treacherous and stratified political landscape that has become the norm in recent years. Yet, colleges are also expected to engage in walking a distinct line between fostering proper political discussion, respectful and open debate, and carefully keeping hateful rhetoric and racist language out of the study body.

How should instructors navigate this situation in their personal and professional pedagogy?

Many different opinions on this have been articulated by some of the finest minds in academia. Linda Flower, Professor of English at Carnegie Mellon University, is arguably the greatest mind in the field of contemporary Composition Theory, and she has carefully managed to postulate the idea that classrooms should be seen as locations where a professor can foster an atmosphere of empowerment with the goal of creating a setting where students can feel comfortable with their activism. Activism is the key concept to study in this situation.

Going from that thought, the concept arises that an instructor's political activism could have an influence on his or her educational pedagogy. Instructors are educated individuals teaching the bright minds that form the next generation of American and global thinkers. That is a tremendous responsibility. If, then, the instructor fosters a sense of his or her own activism and political leanings in the classroom, always with the intention of opening a productive debate, can there be potential negative consequences for the inclusiveness of the class?

To foster inclusiveness in the classroom is to be accepting of differing opinions. It is, after all, not the opinion that the instructor agrees with that he or she must tolerate and encourage, but the one that runs contrary to the instructor's own opinions. Might a well-meaning instructor be creating an atmosphere of unconscious political bias by referencing his or her own ideals too heavily? If that is the case, could the instructor's own political stance become the unspoken standard of the classroom to which students feel they must conform? This essay aims to engage these questions by studying the work of figures such as Linda Flower, the controversial scholar Musa Al-Gharbi, and others in order to study the effects of an instructor's activism on a classroom body. From there, this essay will examine the critical elements of fostering a healthy and respectful debate in order to ultimately establish a definition of what an inclusive pedagogy should be, and what that pedagogy put into practice should entail.

Using a Blended Classroom Model for a Math Education Course

Sara Lenhart, Christopher Newport University

The presenter has written and is currently in the second semester of using an interactive textbook for her math education class. Previously, outside of the classroom, the students would read an online text, do the associated online homework, and watch videos made by the professor. With the interactive textbook, the reading, homework, and videos are all embedded into one chapter. This poster will discuss how the format of the class changed from previous years because of the new textbook.

The presenter teaches a content-based course for those wanting to be elementary school teachers. The course used to be strictly assessed based on student knowledge of elementary math topics. In the previous years of teaching this course, the presenter moved the class to a flipped model in order to have class time to dive into more pedagogical concepts. Previously, outside of the classroom, the students would read an online text, do the associated online homework, and watch videos made by the professor. During the class, the professor would give a short quiz to make sure students read the book and watched the videos. The quiz would take at least 15 minutes every class. The rest of class time was spent doing more pedagogical activities. This new book that the presenter has written allowed the reading, watching videos, and homework will be made more concise by all being in the same integrated text. The

poster will discuss the difficulties in writing the text, how the implementation in the classroom went, and how the format of the class changed.

Using Metacognition to Improve Learning

Takashi Maie, University of Lynchburg; Samrat Thapa, Lynchburg College

Metacognition is one's awareness of his or her level of understanding of a topic. Studies have shown that students with poor metacognition do not perform as well academically compared to their peers. In this study, freshman and sophomore nursing students predicted their exam grade after each exam. The predicted and actual grades were used to evaluate metacognition, and students with poor metacognition were identified. We will provide timely resources to improve study and thinking skills among students with poor metacognition

Fall 2018-Spring 2019

Starting fall 2018, we asked the nursing majors enrolled in first year general chemistry course and second year anatomy course to fill out a post exam survey after each exam. The survey required students to estimate their exam grade. Following is a copy of the survey:

"How do you think you performed in this exam? (Circle one) Don't spend more than 10 seconds to answer.
High A (99-95) Low A (94-90)
High B (89-85) Low B (84-80)
High C (79-75) Low C (74-70)
High D (69-65) Low D (64-60)
F or below"

Upon grading the exam, the actual and estimated grades of the students were plotted.

We continued data collection in the spring 2019 semester as well.

Fall 2019-Spring 2020

We will identify students with poor metacognition, and provide resources to improve study and thinking skills.

Using Plickers to Enhance Chemistry Students Engagement and Learning

Rashmi Shrestha, University of North Carolina Asheville

Engagement and participation are important factors in students' learning, and using classroom response systems (CRS) is a popular way to engage students. Due to the user-friendliness and low-cost of plickers, it can be an effective assessment tool in higher education pedagogy. A survey on students' perception of the implementation of plickers in a first-year general chemistry course at a primarily undergraduate institution was conducted. So far, students responded that plickers enhanced their learning.

Engagement and participation in the classroom play an important role in student learning (Reeve, Jang, Carrell, Joen, & Barch, 2004; Carini, Kuh & Klein, 2006). Classroom response systems (CRS) engage students while providing immediate feedback to their responses to comprehension-testing evaluations (Trees & Jackson, 2001). Clickers, the most popular CRS, requires each student to possess either a physical clicker or a personal device that can connect to the web-based application, thereby placing a financial burden on students. Due to the diverse student body enrolled in colleges and universities, instructors cannot expect all the students to have access to such devices. Plickers is a relatively new assessment tool that allows instructors to engage students in course content without the need for student-

owned response devices. Plickers use in higher education pedagogy has not been thoroughly investigated. This report is a longitudinal study exploring the pedagogical benefits of plickers in a first-year general chemistry course at a primarily undergraduate institution by examining students' perception of how plickers impacted their learning and engagement and how participation through plickers related to performance on course examinations. After each semester, student responded to a survey asking attitudinal and informational questions using the five-point Likert scale. Our study thus far has demonstrated a positive correlation between student engagement and learning using plickers. This study suggests that plickers can be an effective tool for improving student engagement in liberal arts institutions with small class sizes.

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Carini, R. M., Kuh, G. D. & Klein, S. P. (2006). Student engagement and student learning: testing the linkages. Research in Higher Education, 47, 1-32.

Trees, A. R., & Jackson, M. H. (2007). The learning environment in clicker classrooms: student processes of learning and involvement in large university-level courses using student response systems. Learning, Media and Technology, 32(1), 21-40.

Using Programmed Instruction and Auto-graded Exercises to Teach Formal Languages

Mostafa Mohammed, Virginia Tech; Clifford Shaffer, Virginia Tech

The material taught in a Formal languages course is mathematical in nature and requires students to practice proofs and algorithms to understand the content. Inspired by the principles of the Programmed Instruction (PI) teaching method, we seek to develop a new Formal Languages eTextbook capable of conveying Formal Languages concepts more intuitively. The PI approach has students read a little, ideally a sentence or a paragraph, and then answer a question or complete an exercise related to that information. Our goal is to present all algorithms using algorithm visualizations and to produce auto-graded exercises to let students demonstrate understanding.

The material taught in a Formal languages course is mathematical in nature and requires students to i) practice proofs and algorithms to understand the content, and ii) practice a sufficient number of examples and exercises. Traditional For-mal Languages textbooks are heavy on prose rather than visuals, and homework consists of solving many paper exercises. Some instructors make use of FiniteState Machine simulators like JFLAP [2]. JFLAP allows students to build different models and apply algorithms on these models, which improves student interaction with the material. However, students still read significant amounts of text without immediate feedback on their understanding. They would also benefit from sufficient exercises along with model answers for exercises to know if they solved the problem correctly. We propose to use Programmed Instruction (PI) pedagogy [3] combined with auto-graded exercises to help both students and instructors to achieve their respective goals. PI machines were created by B.F. Skinner in the 1950s. PI is designed to act as an interactive tutor to students by showing a small frame that contains information followed by a question related to that information. Successfully answering the questions means that students master the given information. Based on their responses, students can go further and complete other frames of information or retry to solve the same question. Therefore, PI will prevent students from moving forward in the material until they are ready. Inspired by the PI teaching method, we have developed a Formal Languagese Textbook capable of conveying these concepts more intuitively (through visualizations) and more interactively (through the use of PI methods). To provide auto-graded exercises for Formal Languages course, we re-implemented the JFLAP system [3] and made it accessible through the web as a project called OpenFLAP. OpenFLAP is built using the algorithm visualization system created for the OpenDSA eTextbook system [2], using HTML and JavaScript. We have created multiple versions of the Formal Languages eTextbook, i) A traditional eTextbook with prose and paper-based exercises, used in Spring 18, ii) AneTextbook with many visualizations and auto-graded exercises, used in Fall 19, and iii) an eTextbook that presents material using the PI. Comparing the students' grades and interactions with the various ebook versions will determine the relative impact of using Visualizations, auto-graded exercises, and PI on students' learning gain and engagement. To evaluate the pedagogical effectiveness of our new eTextbook, we will conduct time and performance evaluations

across three offerings of a Formal Languages course. We will compare the time spent by students using materials with text and exercises only, with text and visualizations, and with the PI frames to determine levels of student engagement. Students' grades will be compared to assess learning gains.

1) Eric Fouh, Ville Karavirta, Daniel A. Breakiron, Sally Hamouda, Simin Hall, Thomas L. Naps, and Clifford A. Shaffer. Design and architecture of an interactive etextbook-the open DSA system. Science of Computer Programming, 88:22â€"40, 2014.
2) Susan H Rodger, Eric Wiebe, Kyung Min Lee, Chris Morgan, Kareem Omar, and Jonathan Su. Increasing engagement in automata theory with Jflap. In ACM SIGCSE Bulletin, volume 41, pages 403-407. ACM, 2009.
3) BF Skinner. Programmed instruction revisited. Phi Delta Kappan, 68(2):103-110, 1986.

World Languages Classrooms: What Should be Taught and How

Yuning Liu, Virginia Tech

This conversation mainly focuses on the content and teaching methods that are used in world languages classrooms for college students in current society. The contents of language teaching are varied in different social backgrounds. So do teaching methods. This presenter aims to initiate discussion on what to teach and how to teach a world language at the college level.

A few decades ago, language teachers favored traditional methods, such as grammar translation methods, drilling and rote memorization. By teaching and learning in this way, students are more skilled in reading and writing. However, they may not be able to speak or communicate in the target language. Gradually, methods like communicative language teaching methods and situational teaching methods come to the stage. Those methods focus more on another function of language: to communicate. The American Council on the Teaching of Foreign Languages (ACTFL) declares that language teaching should aim at the three modes of communication: interpersonal, interpretational and presentational (ACTFL, 2012). What is the importance of these three kinds of communication in our world?

Education is hardly separable from the politics, economy and culture. Combining all these factors and language teaching and learning, the discussion will cover what language teachers should teach to our students so that they can be better world citizens by learning world languages. As research and practice on language education evolved, more and more language teaching methods come to the public attention. But in our current society, what are the, if any, more popular and effective methods in language teaching? In what way should we, language educators, teach our language learners?

During the conversation, topics such as what to teach and how to teach in modern world language classrooms will be covered. If time allows, discussions will be geared to the skills and knowledge that world language teachers need to have in order to become better language teachers.

American Council on the Teaching of Foreign Languages (2012). Retrieved from https://www.actfl.org/sites/default/files/CAEP/AppendixN-ACTFLPerformanceDescriptorsLanguageLearners.pdf