6TH CELEBRATION OF
TEACHING & LEARNING SYMPOSIUM

Presentation Abstracts

February 10, 2022

UNIVERSITY OF
SOUTHERN INDIANA®

Center for Excellence in Teaching & Learning | www.usi.edu/cetl

6TH CELEBRATION OF TEACHING & LEARNING SYMPOSIUM

2022 PRESENTATION ABSTRACTS

Please refer to the Symposium webpage for additional information and to view the program.

The presentation abstracts and materials will be available in USI's Scholarly Open Access Repository (SOAR).

The word cloud image shown on the cover was created from the words in the presentation abstracts. The frequency of words corresponds with font size.

Keynote: Responding to Exhaustion: A Mental Bandwidth Approach to Increasing Learning and Success

Dr. Tina D. Bhargava, Kent State University

Abstract:

In the dregs of the COVID-19 pandemic, our students show up to our colleges with extremely depleted "mental bandwidth" from constantly changing expectations, persistent uncertainties, and disheartening mental and physical health strain. Low-income, non-traditional, and non-majority students often struggle with additional burdens of unrelenting financial insecurity, insufficient institutional supports, and systemic discrimination. This severe deficit of mental bandwidth—a resource critical to learning, creativity, and nuanced thinking—leads to disengagement, demoralization, and poorer outcomes, not just for students, but for faculty, staff, and institutions as a whole.

In this presentation, Dr. Tina Bhargava will discuss mental bandwidth and its impact on success and satisfaction in higher education. Many common classroom and institutional practices can unintentionally contribute to mental bandwidth drains. Dr. Bhargava will share some simple principles and practices that can protect and prevent the loss of mental bandwidth, and streamline bandwidth demands to increase opportunities for learning, success, and revitalization.

About the Speaker

Dr. Tina D. Bhargava is an Associate Professor in the College of Public Health at Kent State University (KSU). Her interests in combining brain science, education, psychology, public health, and public policy surfaced during her undergraduate and Masters studies at Stanford University, and were solidified during her doctoral work at the University of Pittsburgh Graduate School of Public Health.

Dr. Bhargava is a thought leader in the application of dual-process theories of cognition to the field of public health and beyond. Her "mental bandwidth" research started in 2009 and was initially focused on the cognitive resource availability issues that influenced individuals' success with the Diabetes Prevention Program, as implemented virtually with a wide diversity of participants, ranging from primary care patients in Pittsburgh, to active-duty Air Force members and their families in Texas.

Dr. Bhargava's current work focuses on developing mental-bandwidth informed actions for improving effectiveness and increasing equity in health services, higher education, workplaces, and everyday life. You can explore some of her work at http://everydaybandwidth.com.

1: Early childhood teacher candidates' learning experiences with storytelling teaching strategy

Ilfa Zhulamanova, Teacher Education, University of Southern Indiana, izhulamano@usi.edu

Laura Bernhardt, David L. Rice Library, University of Southern Indiana, lbernhardt@usi.edu

Keywords: Storytelling, teaching strategy, early childhood, preservice teachers

Abstract:

Relevance
A 2019 study of 241 early childhood preservice teachers (Zhulamanova & Raisor, 2020; see also Zhulamanova, 2019) demonstrated that preservice teachers leave teacher education programs with mixed beliefs and understandings about how play relates to learning, teaching and curriculum-making in early childhood classrooms. The purpose of this lightning talk is to present some SoTL research in progress on a possible remedy for those mixed beliefs and understandings: adopting and exploring storytelling as a teaching method for preservice teachers. Student experiences and engagement with storytelling as a teaching method were studied by collecting data over two semesters of EDUC 242 (Growth and Development in Early Childhood) on two forms of student engagement with course content -- in-class group activities and individual homework -- both of which involved students using their understanding of childhood developmental stages to complete and analyze stories provided to them by the instructor. This presentation will cover the methods used and preliminary data derived from the study so far, covering work done in the Fall semester of 2021.

Purpose & Takeaways
One obstacle encountered as a part of the process of collecting and analyzing the data is something that might otherwise be a terrific outcome: in their individual homework, students went beyond the parameters of the assignment to do highly creative work in their own storytelling, often in a way that made it difficult to assess their work relative to the actual study design. The audience for this presentation is asked for feedback and methodological suggestions for improving the assignment prompts, assessment, and/or analysis criteria.

References

Abrahamson, C. E. (1998). Storytelling as a pedagogical tool in higher education. *Education*, *118*(3), 440.

Alterio, M., & McDrury, J. (2003). *Learning Through Storytelling in Higher Education: Using Reflection and Experience to Improve Learning*. Routledge.

Coulter, C., Michael, C., & Poynor, L. (2007). Storytelling as pedagogy: An unexpected outcome of narrative inquiry. *Curriculum Inquiry*, *37*(2), 103–122.

Zhulamanova, I., & Raisor, J. (2020). Early childhood preservice teachers' perceptions on children's play. *International Online Journal of Primary Education*, *9*(2), 128–143.

Zhulamanova, I. (2019). Learning, NOT playing: Mixed methods analysis of early childhood

preservice teachers' perceptions on children's play. In Han, M. & Johnson, J. E (Eds.). *Play and Curriculum Play* (163-181). The Association for the Study of Play (TASP): *Play and Culture Studies.*

2: Connecting in a Crisis: How a social media platform can help you connect with your students

Lamia Scherzinger, Kinesiology, Indiana University Purdue University Indianapolis (IUPUI), lnuseibe@iupui.edu

Keywords: social media, connection, crisis

Abstract:

"This is very scary. Everybody be safe!" "I am trying to not to be too afraid. I work in the medical field. It can be so scary." These honest and uncensored statements, taken directly from my students last year, gave me an amazing insight to their emotions and thoughts as we traversed the unknown together. I was able to do so through CourseNetworking, an academic social networking platform that can be integrated into Canvas. While I first started using it years ago as a way to get to know my students better, once the pandemic hit and our lives were turned upside down, it became so much more. Unfortunately, we are still in a world full of unknowns that are greatly affecting our lives. With CourseNetworking, I have been able to reach out to my students each week and ask them how they are doing, and they are able to share with others how much their lives have changed. In this session, insights gathered from over the years of using this platform will be shared and the positive influence it has had on my teaching, as well as how to incorporate it successfully into your course.

References

Scherzinger, L. N. (2021). CourseNetworking: How a Social Media Platform Can Connect Us in a Crisis. *Journal of Teaching and Learning With Technology*, *10*(1). Retrieved from https://scholarworks.iu.edu/journals/index.php/jotlt/article/view/31176

3: Applying the SCARF Framework to Pedagogical Practices in the Higher Education Classroom

Moriah Smothers, Teacher Education, University of Southern Indiana, mjsmothers@usi.edu
Jack Smothers, Management and Information Sciences, University of Southern Indiana, jesmothers@usi.edu

Keywords: Pedagogy, Higher Education, Teaching, Social Interactions, Neuroscience, Instructional Strategies

Abstract:

The presentation discusses the SCARF model (i.e., acronym standing for status, certainty, autonomy, relatedness, and fairness) which is a conceptual framework rooted in neuroscience. SCARF explains how social interactions elicit either prosocial or antisocial behaviors depending on how they are structured and interpreted. SCARF is particularly applicable within the classroom setting because a) the brain treats social threats and rewards similar to physical threats and rewards (Lieberman, & Eisenberger, 2009); b) a person's capacity to make decisions, solve problems, and collaborate with others is reduced by social threats and strengthened by reward responses (Elliot, 2008); and c) threat responses are more intense, more common, and longer-lasting than reward responses and should therefore be minimized in social interactions (Baumeister et al, 2001). Understanding SCARF helps individuals effectively engage in work relationships and collaborate with others. The presentation explores the SCARF model and makes pedagogical recommendations for each SCARF dimension specific to the higher education context.

The purpose of the presentation is threefold:
1. Describe the SCARF model and its conceptual framework which is grounded in neuroscience.
2. Apply the SCARF model to the higher education context.
3. Identify instructor behaviors, instructional strategies, and delivery options for each SCARF dimension which could be implemented within the higher education classroom to elicit prosocial behaviors.

References

Baumeister, R. F., Bratslavsky, E., Finkenauer, C., & Vohs, K. D. (2001). Bad is stronger than good. *Review of general psychology*, *5*(4), 323.

Elliot, A. (2003). Handbook of Approach and Avoidance Motivation. New York: Psychology Press.

Lieberman, M. D., & Eisenberger, N. I. (2009). Pains and pleasures of social life. *Science*, *323*(5916), 890-891.

Rock, D., & Cox, C. (2012). SCARF in 2012: Updating the social neuroscience of collaborating with others. *NeuroLeadership Journal*, *4*(4), 1-16.

4: The Role of Resilience in Entrepreneurship Student Intentions to Start a Business

Kevin Celuch, Economics and Marketing, University of Southern Indiana, kceluch@usi.edu
Aleisha Jones, Economics and Marketing**,** University of Southern Indiana, aljones13@usi.edu

Abstract:

Research Question and Context
This research contributes to understanding of learning processes involved in entrepreneurship education for undergraduate students and, by extension, learning processes that may be involved in any applied discipline, (e.g., social work, nursing, engineering). Specifically, we examine resilience (perceived resourcefulness in handling unforeseen events) in a "chain of effects" including self-efficacy (perceived competence), identity (perceived psychological connection to discipline), and intention to start a business for students enrolled in entrepreneurship programs. This research addresses both theoretical and practical imperatives in the scholarship of teaching and learning literature as to how we can more effectively advance students' transfer of learning (future intentions) beyond the classroom.

Grounding
While the entrepreneurship literature is clear about the importance of resilience in entrepreneurial endeavors, the teaching and learning literature is much less clear as to the specific role of resilience in the lives of nascent entrepreneurs. Research imperatives include: the need for theoretically sound explorations of resilience as part of a dynamic learning process and the need for better measurement of the construct as a means of delineating its role in relation to other relevant aspects of learning (c.f., Korber & McNaughton, 2017; Gonzalez-Lopez, Perez-Lopez, & Rodriguez-Ariza, 2019).

Approach/Methods
Our sample consisted of five hundred and nine undergraduate students enrolled in several different entrepreneurship programs in the U.S. Multiple programs employing experientially based learning were included by design as our objective was to explore student learning processes and not the influence of any one specific pedagogical technique (c.f., Liguori & Vanevenhoven, 2013). All subjects were provided a questionnaire packet to complete in person at the end of the semester that included relevant measures. The reliability and validity of measures were tested and supported. The sequence of effects was modeled for resilience, self-efficacy, identity, and intention (along with controlling for gender, prior start-up and failure experience) (c.f., Hayes, 2013; Preacher, Rucker, & Hayes 2007; Duchek, 2018).

Discussion/Lessons
Resilience was found to have significant indirect and direct effects on entrepreneurial efficacy perceptions and identity in explaining student start-up intentions. The model is parsimonious and explained 50% of the variability in start-up intention which compares very favorably with prior models in the literature. In terms of educational interventions, it appears that resilience is a resource that is important in the learning "chain of effects" for entrepreneurial students (and probably implicated in the learning of students in other applied/professional programs that

require coping with unexpected events). Our findings are consistent with the work of Luthar, Cicchetti, & Becker (2000) and imply that resilience should be viewed as part of a dynamic learning process and not purely as an immutable trait. Resilience has been conceptualized as a dynamic construct that can be encouraged (Fletcher & Sarkar, 2013). This research answers the call for studies of resilience in entrepreneurial education (Gonzalez-Lopez, Perez-Lopez, & Rodriguez-Ariza, 2019) and "sets the stage" for future research in the scholarship of teaching and learning exploring antecedents and classroom interventions than bolster student resilience.

References

Duchek, S., (2018). Entrepreneurial resilience: a biographical analysis of successful entrepreneurs. International Entrepreneurship Management Journal, 14, 429-455.

Fletcher, D., & M. Sarkar, (2013). Psychological resilience: a review and critique of definitions, concepts, and theory. European Psychologist, 18 (1), 12-23.

Gonzalez-Lopez, M.J., M.C. Perez-Lopez, & L. Rodriguez-Ariza, (2019). Clearing the hurdles in the entrepreneurial race: the role of resilience in entrepreneurship education. Academy of Management Learning & Education, 18 (3), 457-483.

Hayes, A. F., (2013). Introduction to meditation, moderation, and conditional process analysis, Builford Press, New York, NY.

Korber, S., & R.B. McNaughton, (2017). Resilience and entrepreneurship: a systematic literature review, International Journal of Entrepreneurial Behavior & Research, 24 (7), 1129-1154.

Liguori, E., & J. Vanevenhoven, (2013). The impact of entrepreneurship education: introducing the entrepreneurship education project. Journal of Small Business Management, 51 (3), 315-328.

Luthar, S.S., D. Cicchetti, & B. Becker, (2000). The construct of resilience a critical evaluation and guidelines for future work. Child Development,71 (3), 543-562.

Preacher, K. J., D.D. Rucker, & A.F. Hayes, (2007). Addressing moderated meditation hypotheses: Theory, methods, and prescriptions. Multivariate Behavioral Research, 42, 185-227.

5. Student Learning Perceptions During the Covid-19 Pandemic

Serah Theuri, PhD, RD, Food and Nutrition, University of Southern Indiana, swtheuri@usi.edu
Jennifer Evans DNP, RN, NC-BC, Nursing, University of Southern Indiana,
      Jennifer.evans@usi.edu
Gina Schaar DNP, RN, Nursing, University of Southern Indiana, gschaar@usi.edu

Abstract:

Context: The purpose for this study was to determine the perceptions of students towards learning, after 15 weeks of modified strategies in course delivery. In the fall 2020 semester, students in 3 large nursing courses (NURS 358, NURS 465 & NURS 468) and one nutrition course, (NUTR 396.001) attended classes with modified teaching strategies due to Covid-19 safety measures and classroom seating limitations. Teaching modifications included live lectures at different times for the same course, or live lectures in one classroom and livestream in adjacent overflow classroom enhanced with virtual chat software. Pre-recorded lectures with flipped class delivery mode were also used.

Grounding: Covid-19 forced schools to rapidly move from face-to-face to online delivery mode globally in 2020. (Sahu, P, 2020). Instructors implemented technologies and innovative teaching strategies to provide solutions for delivering live in-person lectures. Several studies have examined student perceptions and satisfaction for learning during Covid-19 for insightful feedback on designing teaching strategies for the new normal. Keri A 2021; Mathuprasad 2021; Dios and Charlo 2021; Gherhes et al 2021, Serhan 2020. Regardless of the teaching strategy, the learning environment played a major role in student experience. Alqahtani and Rajkhan 2020.

Methods An anonymous questionnaire on Qualtrics was distributed among students enrolled in in 3 courses in nursing and one course in nutrition taught using modified online and in-class strategies to accommodate Covid-19 safety guidelines. The four-part questionnaire was adopted with author permission from the Baczek et al (2020) study. There were no exclusion criteria. All students enrolled in the four courses were provided with the online consent and Qualtrics link via email. The Qualtrics survey included an informed consent with the option for students to accept or refuse participation. The satisfaction and level of acceptance of course delivery methods were analyzed using descriptive statistics. This study was approved by the USI Institutional Review Board (IRBNet #2021-038-NH).

Discussion: Feedback responses were obtained from 65 students. Of these students, 70% were nursing, 17% were nutrition and 13% declared neither major. About 87% of students reported being engaged or extremely engaged during traditional face-face learning compared to 46% of students engaged or extremely engaged during the online learning. Access to online materials, learning at one's pace and comfortable surrounding were cited as advantages of the modified teaching and learning strategies. Only 37% were satisfied or extremely satisfied with the modified learning strategies. Lack of interaction with teacher, poor learning conditions at home, lack of self-discipline social isolation and technical problems were identified as disadvantages of teaching strategies with technical problems ranking at the top. Low

satisfaction with course teaching and learning strategies during the pandemic need further investigation to provide more insight in course planning for future semesters.

References

Sahu P (April 04, 2020) Closure of Universities Due to Coronavirus Disease 2019 (COVID-19): Impact on Education and Mental Health of Students and Academic Staff. Cureus 12(4): e7541. doi:10.7759/cureus.7541

Keri A. (2021) Online Teaching Methods and Student Satisfaction during a Pandemic. *International Journal of Educational and Pedagogical Sciences.* 15(4). 369-375.

Muthuprasad, T., Aiswarya S., Adiitya, K.S., Girish, K.J. (2021). Students' Perception and Preference for Online Education in India During Covid-19 Pandemic. *Social Sciences and Humanities Open*. 3;100101.

Dios, M.T.C., Charlo, J.C.P. (2021) Face-to-Face vs. E-Learning Models in the Covid-19 Era: Survey Research in a Spanish University. Education Sciences. 11,293. https://doi.org/10.3390/educsci11060293

Gherhes, , V.; Stoian, C.E.; Fˇarcas, iu, M.A.; Stanici, M. E-Learning vs. Face-To-Face Learning: Analyzing Students' Preferences and Behaviors. Sustainability **2021**, 13, 4381. https://doi.org/10.3390/su13084381

Serhan, D. (2020). Transitioning from face-to-face to remote learning: Students' attitudes and perceptions of using Zoom during COVID-19 pandemic. *International Journal of Technology in Education and Science (IJTES), 4*(4), 335-342.

Baczek, M., Baczek-Zaganczy, M., Szpringer, M., Jaroszynski, A., Kaplon-Wozakowska, B. ((2020) Student Perception of Online Learning During the Covid-19 Pandemic: A Survey Study of Polish Medical Students. *Medicine*. 100 (7) e24821. DOI: https://doi.org/10.21203/rs.3.rs-41178/v1

Alqahtani, A.Y., Rajkhan, A.A. (2020) E-Learning Critical Success Factors During the Covid-19 Pandemic: A Comprehensive Analysis of E-Learning Managerial Perspectives. *Education Sciences*. 10:2-16

6: Teaching Strategies for Wellness Promotion Through Interprofessional Education

Charlotte Connerton, Nursing, University of Southern Indiana, cconnerton@usi.edu
Serah Theuri, Nutrition, University of Southern Indiana, swtheuri@usi.edu
Jessica Mason, Occupational Therapy, University of Southern Indiana, jamason@usi.edu
Ryan Butler, Nursing, University of Southern Indiana, rmbutler@usi.edu
Pam Thomas, Nursing, University of Southern Indiana, pkthomas@usi.edu

Keywords: Interprofessional, Education

Abstract:

Interprofessional education occurs when two or more professions learn about, from and with each other to enable effective collaboration and improve health outcomes (World Health Organization, 2010). The purpose of this interprofessional educational opportunity was to engage students in the core competencies of interprofessional education and practice. Wellness coaching is becoming more recognized in health professions with certifications specific to diseases and nursing. Wellness coaching encompasses a holistic approach through mind, body, spiritual, emotion, and social approach. There is a gap in the literature on interprofessional wellness coaches and coaching. The College of Nursing and Health Professions Spring Wellness Program offered a health fair, wellness program including wellness coaching, and brown bag lunch and learns offered for faculty, staff, and students. Interprofessional disciplines of nursing, nutrition, occupational therapy, respiratory therapy, and kinesiology collaborated and promoted health education during the one-day health fair. All disciplines were invited to participate in the TeamStepps™ training prior to the health fair. In addition, nutrition and nursing students received training for wellness coaching training and provided coaching over an 8-week period. Brown bag lunch and learns were scheduled and provided by occupational therapy, nursing, nutrition, and kinesiology on stress and chronic diseases management.

The purpose of the lightning presentation is to encourage participants to appraise the value of student-led interprofessional education opportunities. Key take-aways include Other professions can provide opportunities for students, preparing them for a variety of career experiences. Well-designed programs need clear directions and expectations outlined by the faculty with faculty oversight.

Reference

World Health Organization. (2010). Framework for action on interprofessional education and collaborative practice. https://apps.who.int/iris/handle/10665/70185.

7: Cultivating Cultural Humility

Ashley Carter, DNP, RN, CNE, Nursing, University of Southern Indiana, ancarter@usi.edu
Shellye Davis, MSN, RN, CMSRN, Nursing, University of Southern Indiana, sdavis15@usi.edu
Amy Pierce, MSN, RN, Nursing, University of Southern Indiana, anstarks@usi.edu

Abstract:

As the population becomes more globalized and the United States becomes more diverse, faculty have the responsibility to include cultural humility into teaching agendas. Cultural humility is more than cultural competence; it is a lifelong process of self-reflection and awareness of bias, a thirst for learning about another's cultural attitudes, values, and beliefs, transforming perceptions through exploration outside one's comfort zone, and having respect and empathy for others (Hughes et al., 2020; McDaniel, 2021).

In nursing, assisting students to cultivate cultural humility is not only an ethical responsibility but essential in learning to create caring patient-centered relationships built upon trust, empathy, respect, and understanding (American Nurses Association, 2015; Carter et al., 2021; Hughes et al., 2020). Nursing faculty created an interactive, team-based, active learning activity to explore various cultures and subpopulations that can be used with any discipline. After selecting a topic of interest, students completed database searches for scholarly articles, appraised the literature, and developed informational handouts to disseminate during student-led discussions.

Active learning teaching strategies facilitate student engagement, create opportunities for deeper levels of understanding for students, and address the diverse learning styles of students (Billings & Halstead, 2016). This activity allowed students and faculty to increase individual knowledge and reflect on misunderstandings of other cultures and subpopulations. While nursing students gained knowledge on providing more culturally responsive patient-centered care; more broadly, students participating in this type of activity learn to organize thoughts, create a presentation, and deliver new information in a culturally sensitive and respectful manner.

As a result of this learning activity, students learned how to utilize resources to learn about other cultures and be mindful of others' needs. For students, this experience is a steppingstone to becoming global citizens in a diverse society.

For faculty, this is an active learning strategy that is easily adaptable to the learning concepts within their disciplines. By sharing this activity with others, our goal is to encourage faculty to utilize active learning strategies that enhance an appreciation for diversity within all communities. Additionally, concepts of teamwork and collaboration, effective communication, and critical thinking are reinforced.

References

American Nurses Association. (2015). *Code of ethics for nurses with interpretive statements.* American Nurses Association.

Billings, D. M. & Halstead, J. A. (2016). *Teaching in nursing: A guide for faculty* (5th ed.). Elsevier.

Carter, A., Davis, S., Pierce, A., Seibert, S., & Butler, R. (2021). Developing cultural humility among prelicensure nursing students. *Nurse Educator.* Advanced online publication. https://doi.org/10.1097/NNE.0000000000001077

Hughes, V., Delva, S., Nkimbeng, M., Spaudling, E., Turkson-Ocran, R. A., Cudjoe, J., Ford, A., Rushton, C., D'Aoust, R., & Han, H. R. (2020). Not missing the opportunity: Strategies to promote cultural humility among future nursing faculty. *Journal of Professional Nursing, 36*(2020), 28-33. https://doi.org/10.1016/j.profnurs.2019.06.005

McDaniel, V. P. (2021). Cultural humility in nursing building the bridge to best practices. *Virginia Nurse Today, 29*(2), 1-14. https://www.virginianurses.com

8: Does Studying the History of the English Language Influence Student Attitudes About Modern Grammar?

David O'Neil, English, University of Southern Indiana, david.oneil@usi.edu

Keywords: grammar, language, linguistics, Standard English

Abstract:

For several decades, there has been division between researchers and at least some English teachers on issues related to Standard English and grammar instruction. For example, research has consistently shown that students do not produce better written work after undergoing isolated grammar lessons, yet this practice persists. Some teachers may also undervalue non-standard varieties of English, not seeing them as legitimate forms of communication in certain social contexts. Such attitudes run contrary to the standards of organizations such as the National Council of Teachers of English. This presentation, which reports on a work in progress in SoTL, examines an intervention to help students mature in their attitudes on these issues.

The study addresses how university English majors perceive the social value of Standard English and the role of grammar instruction at the secondary level. In the study, participants' baseline attitudes are compared to attitudes after taking a course in the history of the English language (a course in which language is studied as a formal system). There are two research questions:

1. Do students develop different attitudes toward grammar and Standard English after taking a taking course that involves the formal study of linguistics?
2. Does this shift in attitude toward grammar (if any), affect how they perceive the role of grammar instruction at the secondary level?

The first round of data will be collected by the time of the symposium. This will include three parts: a Likert-scale questionnaire about the participant's attitudes toward Standard English and grammar instruction (pre- and post-test), a reflection essay in which the participants discuss how the course influenced their responses, and transcripts of small group discussions. This study should provide insight on how to help students think about grammar and language in a more sophisticated way.

9: Increasing allied dental student's awareness and confidence when treating special needs patients

Amanda Reddington, Dental Assisting/Hygiene, University of Southern Indiana, arreddingt@usi.edu

Sean Weir, Occupational Therapy Assistant, University of Southern Indiana, sweir@usi.edu

Abstract:

Research Question and Context:
Research question: Does implementing an interactive special needs activity into the allied dental education curriculum increase students awareness of and relatability to patients with special needs?

Studies show that some dental professionals feel inadequately trained and/or lack confidence when treating special needs patients[1,2,3,4,5] requiring accommodations for dental care. Due to this there can be difficulty in relating to and understanding specific patient needs. This study sought to examine allied dental students awareness of and comfort level when treating a patient with special needs.

Methods:
This mixed-methods study design involved an IRB [1753391-1], [1755832-1] approved research focus utilizing pre/post surveys, faculty instruction/education, interactive student simulations, and facilitated group discussion. The convenience sample of 28 participants included 22 dental hygiene and 6 dental assisting students enrolled in their final semester of their programs. Occupational Therapy Assistant and allied dental faculty provided brief review of etiology, presentation of illnesses, and common treatment approaches for cerebrovascular accident (CVA), macular degeneration, rheumatoid arthritis, schizophrenia, and hearing impairment diagnoses. Students were paired and rotated through low fidelity simulation stations for each diagnosis listed above. At each station participants simulated the physical and mental stressors associated with the special need, and the role of oral health care provider. Facilitated large group discussion and post surveys were completed.

Grounding:
In 2019 the commission of dental accreditation (CODA) modified their definition of 'special needs' patients and added this verbiage to existing dental assisting accreditation standards. While the University of Southern Indiana dental assisting and hygiene programs were already meeting these standards, it made faculty more aware of the importance of strengthening the curriculum. Completing a data base search for best practices in oral health education for special needs patients lead to several articles explaining the need for educational projects but not their design or outcomes. Many articles surveyed dental professionals which explained they often do not feel confident, prepared, or properly trained to treat special needs patients. This project was created with the intent of allowing students to experience the barriers associated with several special needs classifications with the hope of increasing their awareness of and comfort level when treating patients with special needs.

Results, Discussion, and Lessons Learned:

100% survey response with statistically significant responses to most questions within both dental assisting and hygiene programs. Most notably are increases in: awareness of special needs (p =0.000351), comfort when treating patients with special needs (p=0.000143), Communicating with special needs patients (p=0.001061), and that they felt their classes prepared them for patients with special needs (p=0.000324). Participants also positivity responded to the project design with an average mean of 4.785 on the 5 point Likert scale Student Evaluation of Educational Quality (SEEQ) survey.

This activity and study will be repeated in the spring 2022 with minor changes. Due to technical difficulties the schizophrenia activity was completed as a group instead of pairs. Increased testing of electronic equipment will be completed prior to the event. It was observed that dental hygiene students did not completely read all direction sheets which caused them to not always accurately complete each station. Station instructions will be emphasized in the future.

Researchers hope to expand this activity in the future to include interprofessional education and collaboration between dental assisting/hygiene and occupational therapy assisting students.

References

1. Lim M, Liberali S, Calache H, Parashos P, Borromeo GL. Perspectives of the public dental workforce on the dental management of people with special needs. *Australian dental journal*. 2021;66(3):304-313. doi:10.1111/adj.12836

2. Lim MAWT, Liberali SAC, Calache H, Parashos P, Borromeo GL. Perceived barriers encountered by oral health professionals in the Australian public dental system providing dental treatment to individuals with special needs. *Special care in dentistry : official publication of the American Association of Hospital Dentists, the Academy of Dentistry for the Handicapped, and the American Society for Geriatric Dentistry*. 2021;41(3):381-390. doi:10.1111/scd.12581

3. McKenzie CT, Mitchell SC. Dental Students' Attitudes About Treating Populations That Are Low-Income Rural, Non-White, and with Special Needs: A Survey of Four Classes at a U.S. Dental School. *Journal of dental education*. 2019;83(6):669-678. doi:10.21815/JDE.019.074

4. SRIVIDYA A, KANNAN A, LAKSHMI KC. Knowledge, Attitude and Practice Survey on Special Care Dentistry: A Cross-sectional Study. *Journal of Clinical & Diagnostic Research*. 2021;15(7):14-18. Accessed December 6, 2021. https://search.ebscohost.com/login.aspx?direct=true&AuthType=sso&db=edb&AN=151925403&site=eds-live&scope=site

5. Borromeo GL, Ahmad MS, Buckley S, et al. Perception of Special Needs Dentistry education and practice amongst Australian dental auxiliary students. *European journal of dental education : official journal of the Association for Dental Education in Europe*. 2018;22(3):e321-e326. doi:10.1111/eje.12296

10: What's the problem? Perceptions in Problem Solving Methodologies

Susan Ely, Engineering, University of Southern Indiana, sely@usi.edu

Keywords: Problem solving, perception differences, perceived difficulty

Abstract:

Engineering students in every discipline complete numerous courses that require complex problem- solving methodologies based on quantitative reasoning. While engineering courses have various areas of focus, the nature of problem-solving is often found to be similar in approach. Many faculty find that errors in student work are due to fundamental flaws in the problem-solving approach, rather than mistakes in computation. Engineering faculty express frustration when grading papers that incorrectly interpret the problem statement or fail to follow the problem-solving approach demonstrated frequently in class. Students are also frustrated by their lack of success and inability to independently solve problems that seemed clear during lecture. In a review of engineering coursework at the University of Southern Indiana, it was found that many of the courses that require extensive quantitative analysis also had a low completion rate: that is, many students who took the course withdrew prior to completion or had to take the course again due to receiving a failing grade. Faculty from a wide variety of engineering programs across the nation have voiced similar frustrations – students come to class with a preconceived notion of the course being difficult but fail to follow the established problem-solving methods provided during instruction. From a faculty perspective, if students followed the methodology presented, the course would not feel so difficult. This difference in perception between faculty and students, as well as the pre-conceived notion of difficulty seems to hinder student success. This research aims to look more closely at the differences in perceived difficulty of the problem-solving process to aid in student persistence and success in quantitative based engineering coursework. Therefore, this research aims to answer the following questions: do students and faculty rate the perceived difficulty and importance of problem-solving steps and does the students problem-solving process (order, perceived difficulty and importance) correlate to overall course success.

Research has found that self-efficacy for self-regulated learning has a critical relationship to persistence within a class, a program of study and completion of a degree [1]. That is to say, a student's ability to take control of their learning and view their learning potential with confidence will positively impact their academic success for both specific courses and academic progress as a whole [1]. Self-efficacy has been shown to directly impact anxiety within STEM coursework, decreasing student success and persistence in courses with a high perceived level of difficulty [2]. This perceived difficulty correlation to poor academic performance supports other work on expectancy-value theory, where academic achievement is limited by students' perceived ability for success. In fact, some studies have shown perceived difficulty as a predictor of overall course performance [2, 3]. While studies have found students rate their faculty as effective, despite perceived levels of difficulty in the coursework, it is noted that perceived difficulty in coursework can relate to workload, number of exams given or the actual course material, making it difficult to determine what specific course feature or subject was experienced as "difficult" from the student's perspective [3]. This variability in perceived

difficulty can confound faculty who are trying to aid students in learning or make adjustments to their curriculum. However, a student's fear of academic failure can cause them to procrastinate in assignments, not attend class or otherwise hinder their academic preparation, resulting in the poor performance and poor persistence [4]. This creates a difficulty in the classroom for both teachers and learners: course materials can help to support student learning, but student perceptions about course content can negatively influence their learning outcomes. Therefore, course developers and faculty need to understand student perceptions of the course material to better promote positive learning [5].

To further explore this issue, research was conducted to understand differences in approaches to problem-solving, as well as perceived importance of each step within the process. Furthermore, students were surveyed to understand the relationship between the problem-solving process steps, and the differences in perceived importance and difficulty for each process step. To accomplish this, students completed a survey in which they created a process map of problem-solving steps and rated the perceived difficulty and importance of each step using a Likert-scale. Faculty completed this same survey with their own process maps and Likert ratings. Comparison between student and faculty process steps, as well as Likert response data, were analyzed. Finally, correlations were made between the students' final course grade and their problem-solving approach.

When analyzing the data, it became apparent that students did not uniformly begin with examining the problem. This brings into question both how problem-solving is taught in engineering and whether traditional teaching methodologies place undue emphasis on computation rather than qualitative analysis of a given situation. This presentation will review the results of the research as well as discuss potential classroom implications.

References

[1] M. Morelli, A. Chirumbolo, R. Baiocco, E. Cattelino, "Academic Failure" Individual, Organizational and Social Factors," Educational Psychology, vol. 27, no. 2, pp. 167-175, 2021.

[2] B. England, J. Brigati, E. Schussler and M. Chen, "Student anxiety and perception of difficulty impact performance and persistence in introductory biology courses," CBE – Life Sciences Education, vol. 18, no. 21, pp. 1-13, Summer 2019.

[3] A. Joyce, "Course difficulty and its association with student perceptions of teaching and learning," Kentucky Journal of Excellence in College Teaching and Learning, vol. 14, pp.54-62, 2016.

[4] T. Bledsoe and J. Baskin, "Recognizing student fear: The elephant in the classroom," College Teaching, vol. 62, pp. 32-41, 2014.

[5] J. Wall and J. Knapp, "Learning computer topics in undergraduate Information Systems courses: Managing perceived difficulty," Journal of Information Systems Education, vol. 25, no. 3, pp. 245-259, Fall 2014.