



## Abstracts: 2026 Celebration of Teaching & Learning Symposium

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## Keynote: Using Proactive Design to Support Executive Functions

**Jennifer Pusateri**, University of Kentucky

### Abstract:

In the wake of the COVID-19 pandemic, professors at colleges and universities all over the U.S. have noticed that students are showing greater difficulty with executive functions (EFs) than ever before. Challenges related to behaviors and skills like planning, organization, focus, and time-management are making it more and more difficult for our students, and possibly even ourselves, to keep up. In this workshop, Dr. Jennifer Pusateri will demystify the concept of executive functioning and provide practical strategies that can be used to begin supporting our student, and possibly even ourselves, right away.

### About the speaker:

Dr. Jennifer Pusateri is the author of *Transform Your Teaching with Universal Design for Learning: Six Steps to Jumpstart Your Practice* and serves as the Senior Universal Design Consultant for the University of Kentucky's Center for the Enhancement of Learning and Teaching (CELT) where she fosters the advancement of accessibility and inclusive teaching practices across campus. Jennifer formerly served as the co-chair of the international UDLHE (UDL in Higher Ed.) Network, and continues to present workshops at national and international conferences across the U.S. on topics such as UDL, neurodivergence, and executive functions.

Dr. Pusateri has also been featured as a UDL and neurodivergence specialist in podcasts such as *Think UDL*, *Tea for Teaching*, and *Teaching in Higher Ed*. Jennifer serves as owner and lead presenter for [Jennifer Pusateri Educational Consulting](#), and her second book, *A Practical Guide to Teaching Neurodivergent College Students* is currently available for pre-order at Harvard Education Press with printed copies arriving in mailboxes this spring.

## A Lesson in Sources: Comparing Textbooks, Scholarly Articles, and Generative AI

**Jean Zelenko**, Social Work, University of Southern Indiana

Keywords: learning resources, scholarly work, research literacy, generative AI

Type of Work: Teaching Practice

Presentation Format: Lightning

### Abstract:

The landscape of learning resources is rapidly evolving. Educators today face the dual challenge of helping students access accurate, up-to-date information and teaching them how to evaluate and apply the available information. As generative AI tools develop and courses increasingly integrate scholarly literature, both students and instructors are navigating how to best utilize sources appropriately. With this growth of accessible knowledge, the concepts of information literacy, critical thinking, and application skills continue to rise in importance for student success. Educators have a responsibility to integrate learning opportunities for students to develop and apply these skills throughout their educational careers.

This presentation describes a classroom activity in which student groups were given identical questions but instructed to seek answers using only one of three sources: (1) the course textbook, (2) a relevant peer-reviewed article, or (3) ChatGPT. This design allowed students not only to learn course content but also to directly compare the strengths, limitations, and best application of each resource. After completing the activity, students reflected on their experiences and hypothesized when and why they might rely on each type of source in future academic or professional contexts. Participants will gain insight into how a similar activity can be adapted to their own disciplinary content to foster students' information literacy and their ability to understand the benefits, limitations, and use of different sources in their respective fields.

### Resources/ Recommended Reading:

Hyeon Jo. (2024). From Concerns to Benefits: A Comprehensive Study of ChatGPT Usage in Education. *International Journal of Educational Technology in Higher Education*, 21.

<https://doi.org/10.1186/s41239-024-00471-4>

Muhammad Abbas, Farooq Ahmed Jam, & Tariq Iqbal Khan. (2024). Is it Harmful or Helpful? Examining the Causes and Consequences of Generative AI Usage among University Students. *International Journal of Educational Technology in Higher Education*, 21.

<https://doi.org/10.1186/s41239-024-00444-7>

Qian, Y. (2025). Pedagogical Applications of Generative AI in Higher Education: A Systematic Review of the Field. *TechTrends: Linking Research & Practice to Improve Learning*, 69(5), 1105–1120. <https://doi.org/10.1007/s11528-025-01100-1>

Singer, J. B., Báez, J. C., & Rios, J. A. (2023). AI Creates the Message: Integrating AI Language Learning Models into Social Work Education and Practice. *Journal of Social Work Education*, 59(2), 294–302. <https://doi.org/10.1080/10437797.2023.2189878>

Tang, J. B., & C. Chung, K. (2025). Textbooks vs. journal articles: How to appreciate and understand their limitations. *Journal of Hand Surgery (17531934)*, 50(7), 997–1001.  
<https://doi.org/10.1177/17531934241307497>

Wu, F., Dang, Y., & Li, M. (2025). A Systematic Review of Responses, Attitudes, and Utilization Behaviors on Generative AI for Teaching and Learning in Higher Education. *Behavioral Sciences (2076-328X)*, 15(4), 467. <https://doi.org/10.3390/bs15040467>

## Advancing Student Skills in Therapeutic Use of Self Using Biometric Feedback

**Kristi Hape**, Occupational Therapy, University of Southern Indiana

**Chad Milewicz**, Economics and Marketing, University of Southern Indiana

Keywords: Therapeutic Use of Self, Biometric Feedback, Artificial Intelligence, Telehealth

Type of Work: Teaching Practice

Presentation Format: Standard

### Abstract:

This research demonstrates how AI powered facial analysis can be used to teach occupational therapy students to apply the therapeutic use of self in computer-mediated treatment. This builds on extant research utilizing facial expression analysis to teach the influence of human emotional responses (Jiang, et. al, 2021; Kulke et al., 2020).

Emotions are measured using IMOTIONS® Artificial Intelligence (AI) technology. Students' telehealth videos were recorded and analyzed using facial expression analysis to identify both client and their own non-verbal cues. This process allowed students to see how their words produced joy in their client and how joy is mirrored between the student and the client. This process helps students appreciate and learn the therapeutic use of self in computer mediated care (telehealth). After recording and analyzing the videos, students then meet 1:1 with their professor for a 30-minute feedback session where they view the videos on dual screens. This process allows students to look second by second at the video analysis, analyze the emotions of both the client and themselves, and observe how their verbal and non-verbal communication impacts their client.

Jiang, H., Serpell, Z., & Whitehill, J. (2021). *Measuring the effect of ITS feedback messages on students' emotions* is important. Multimodal Artificial Intelligence in Education. Retrieved from <https://par.nsf.gov/biblio/10277387>.

Kulke, L., Feyerabend, D., & Schact, A. (2020). *A comparison of the affectiva iMotions facial expression analysis software with EMG for identifying facial expressions of emotion*. Frontiers in Psychology, 11: 329. Doi: 10.3389/fpsyg.2020.00329

## Applied Research @ USI

**Steven Stump**, Center for Applied Research, University of Southern Indiana

Keywords: research, outreach, experiential, partnerships

Type of Work: Teaching Practice

Presentation Format: Lightning

### Abstract:

The Center for Applied Research, an office within USI's Division for Outreach and Engagement, serves as a gateway for community partners to access our faculty expertise, student creativity, and advanced labs and equipment. Through the Center for Applied Research, USI faculty and students develop solutions for external clientele, providing unique, real-world experiences for all participants.

A close partner of Service Learning, the Center for Applied Research coordinates projects outside of regularly scheduled classes. Many of these projects are conducted as fee-for-service, in that clients own the content created by students and faculty, and USI participants receive monetary compensation for their time. USI retains publishing rights to all Applied Research projects as long as this does not violate any non-disclosure agreements with the respective client. Students who participate in these projects engage in creative problem solving, expand their professional networks, receive financial compensation, and expand their skill sets beyond the standard curriculum.

Faculty interested in participating in Applied Research projects also receive compensation for their time, as well as citable partnerships that, for many, count towards the outreach portion of their promotional pathway to tenure. Faculty have the option to work directly on projects for clients or serve in more of an advisory capacity to a student team.

Through this format, students learn practical, hands-on methods for solving complex, real-world problems. For many, this involves incorporating skills both related to and outside of their academic major. This session will share the project-based approach that is used to help students hone and expand their skillsets, and how elements of this can be incorporated into classroom instruction.



## Building Interactive LMS-Compliant HTML Apps with AI to Enhance Student Learning

**Srikanth Dandotkar**, Psychology, University of Southern Indiana

**Spence Farmer**, Online and Adult Learning, University of Southern Indiana

Keywords: Generative AI, Blackboard Ultra, Psychophysics demonstrations, Interactive Experimental Demonstrations

Type of Work: Teaching Practice

Presentation Format: Standard

### Abstract:

#### **Description of the teaching practice and relevance**

Sensation and Perception is a course where students learn best when they can experience the phenomena, not only read about them. As the course instructor preparing to teach this course online for the first time in Spring 2026, I faced a barrier that was both practical and pedagogical. Interactive demonstrations exist, but many are too complex for novice users, do not match the concepts in the sequence I teach, or are difficult to use inside Blackboard Ultra. Even when students reach a demonstration, the next hurdle appears: the content is cognitively demanding, and many students struggle to move from an experience to a clear explanation in a graded Blackboard submission. When the workflow requires too many steps across too many tools, time is lost to logistics, attention drifts, and the learning moment fades before students can make sense of what happened. This matters because research shows that well designed simulations can support learning when they are accessible and aligned to instruction (Chernikova et al., 2020; Rutten et al., 2012).

This project emerged while building the online version of the course with the goal of Quality Matters certification. Quality Matters pushes you to design for clarity, alignment, accessibility, and consistency. That is exactly where an instructional designer makes the difference. I partnered closely with our instructional designer, from the start and he stayed with the project through final implementation. He helped translate a good idea into a student ready experience by stress testing the flow, tightening instructions, checking accessibility, and ensuring that each demonstration and activity sheet fits the Blackboard Ultra structure and assessment plan. In other words, this was not only about creating code. It was about finishing the idea all the way to a usable learning experience inside the learning management system.

To address access and usability barriers, we used generative AI as a development partner to help prototype lightweight, locally runnable psychophysics demonstrations aligned to weekly modules. Each demonstration is intentionally streamlined so students can begin quickly, focus attention on one learning objective, and finish in minutes. Each demonstration is paired with a one-page activity sheet that guides students through prediction, interaction, data capture, interpretation, and reflection inside the course. This structure supports active learning by asking students to commit to a prediction, observe evidence, and explain what they learned in a graded submission (Freeman et al., 2014). The design also aims to reduce extraneous cognitive load by keeping the interface



simple and embedding prompts that guide attention toward the relevant variables (Mayer & Moreno, 2003).

A featured example is a Method of Limits dot detection task. The application alternates ascending and descending series, includes true zero intensity trials, identifies crossover points, and provides a threshold estimate that students can copy into the activity sheet. The tool runs locally in a browser and is designed to minimize data collection while still giving students a concrete experience of threshold, decision criteria, and response bias.

### **Presentation purpose and takeaways**

This session is designed as a teaching practice share out that attendees can replicate. Participants will see a repeatable workflow that we call the demo to document loop. A short interactive experience is immediately followed by a structured activity sheet and a Blackboard submission that prompts interpretation rather than simply reporting. The session will walk through the full pipeline: selecting a target concept, defining the smallest useful interactive experience, prototyping with generative AI, testing usability, and embedding the final activity inside Blackboard Ultra with clear instructions and assessment criteria.

Audience engagement is built into the presentation. Attendees will run the dot detection demonstration in under two minutes, record the threshold estimate, and respond to a short prompt about how ordered series can shape decisions. We will then map that experience to the activity sheet structure and discuss practical choices that matter in a Quality Matters oriented course build, including accessibility checks, privacy conscious defaults, and grading alignment.

Attendees will leave with practical materials they can adapt immediately: a demonstration specification template, a one-page activity sheet scaffold, and a Blackboard Ultra integration checklist for embedding, instructions, and assessment. We will also describe how our partnership is shaping a shared repository of these demonstrations beyond a single course site, with robust versions for broad use and simplified versions that instructors can modify for their own instructional needs across other relevant courses both within and across colleges.

### **References**

- Chernikova, O., Heitzmann, N., Stadler, M., Holzberger, D., Seidel, T., & Fischer, F. (2020). Simulation based learning in higher education: A meta analysis. *Review of Educational Research*, 90(4), 499 to 541. <https://doi.org/10.3102/0034654320933544>
- Freeman, S., Eddy, S. L., McDonough, M., Smith, M. K., Okoroafor, N., Jordt, H., & Wenderoth, M. P. (2014). Active learning increases student performance in science, engineering, and mathematics. *Proceedings of the National Academy of Sciences of the United States of America*, 111(23), 8410 to 8415. <https://doi.org/10.1073/pnas.1319030111>
- Mayer, R. E., & Moreno, R. (2003). Nine ways to reduce cognitive load in multimedia learning. *Educational Psychologist*, 38(1), 43 to 52. [https://doi.org/10.1207/S15326985EP3801\\_6](https://doi.org/10.1207/S15326985EP3801_6)
- Rutten, N., van Joolingen, W. R., & van der Veen, J. T. (2012). The learning effects of computer simulations in science education. *Computers & Education*, 58(1), 136 to 153. <https://doi.org/10.1016/j.compedu.2011.07.017>

## Character.exe: Exploring Agency Through Narrative Choices

**Roger Gude**, Professional Studies, University of Southern Indiana

**Hang Yuan**, Art and Design, University of Southern Indiana

Keywords: Interactive Storytelling; Personality Archetypes; Educational Technology

Type of Work: Scholarship of Teaching and Learning (SoTL) / Scholarly Inquiry

Presentation Format: Lightning

### Abstract:

Narrative-based learning supports self-reflection in higher education, yet many reflective activities rely on static surveys that obscure students' reasoning. *Character.exe* is an interactive narrative prototype inspired by a murder-mystery story, in which a group of Dungeons & Dragons players encounter a deceased comic book shop owner and must navigate the consequences of their choices. The prototype helps students explore agency and decision-making through story-based choices, using personality-inspired archetypes as narrative lenses rather than fixed labels. It includes two fully developed branching story paths that reveal how different decision tendencies shape outcomes and trade-offs. Reflection occurs both implicitly through narrative engagement and explicitly through post-activity prompts. Planned evaluation uses a mixed-methods approach, combining Likert-scale items on perceived decision-making clarity with open-ended reflections. This work contributes to narrative-based pedagogy, student agency, and curriculum innovation by showing how interactive storytelling rooted in a creative, mystery-driven scenario can externalize reasoning processes and support meaningful self-exploration in higher education. *Character.exe* is guided by two questions. The first asks how reflecting on narrative-based decision-making influences students' awareness of their agency in environments characterized by complex choices. The second examines how interactive narrative design can leverage personality-inspired archetypes to promote engagement without reinforcing fixed identity labels. Building on research on narrative-based learning and personality archetypes, the project suggests that interactive stories can externalize internal reasoning processes, making them visible and supportive of reflective learning. The planned methods employ a mixed qualitative and quantitative approach. Students will complete the interactive narrative prototype and respond to a short set of Likert-scale items measuring perceived clarity of decision-making, along with open-ended reflection prompts that capture how they interpret their choices. Ongoing development highlights the challenge of balancing branching complexity with cognitive load and suggests the value of archetypes for making personality traits more concrete. This work aims to contribute insights into how interactive narratives can support self-reflection in higher education settings.

### References

Cheng, A. Y., Zou, C. Q., Xie, A., Hsu, M., Yan, F., Huang, F., Zhang, D. K., Sharma, A., Poole, R., Wan Rosli, D., Cuadra, A., Pea, R., & Landay, J. A. (2025). Oak story: Improving learner outcomes with LLM-mediated interactive narratives. *Proceedings of the 38<sup>th</sup> Annual ACM Symposium on User Interface Software and Technology*, 1–17. <https://doi.org/10.1145/3746059.3747698>

Devasia, N., Zhao, R., & Lee, J. H. (2025). Does the story matter? applying narrative theory to an educational misinformation escape room game. *Proceedings of the 2025 CHI Conference on Human Factors in Computing Systems*, 1–15. <https://doi.org/10.1145/3706598.3713131>

Henry, R., Hassan, T., & Gong, J. (2025). StoryStudio: Enhancing data science education with explainable, narrative-driven storytelling. *Proceedings of the 30th ACM Conference on Innovation and Technology in Computer Science Education V. 2*, 803–803. <https://doi.org/10.1145/3724389.3730811>

## Collaborative Approaches to Teaching the Science of Reading at USI

**David O'Neil**, English, University of Southern Indiana

**Cacee Mabis**, History, University of Southern Indiana

Keywords: literacy, science of reading, service learning, team teaching

Type of Work: Teaching Practice

Presentation Format: Lightning

### Abstract:

In response to Indiana's House Bill 1558, which mandates the inclusion of the Science of Reading in teacher preparation programs, the University of Southern Indiana launched a new interdisciplinary secondary education literacy course in 2024. All secondary and P-12 teacher candidates, including those in English, History, Biology, Art, and Mathematics programs, are required to take this course. This Teaching Practice presentation will be delivered by the co-instructors of the course, a professor of English and a professor of History, both of whom work with secondary education teaching candidates. The presentation will focus on the design and evolution of the course over the last three semesters to meet IHB 1558's Science of Reading mandate.

One of the course's key features is its partnership with a local high school that serves a substantial English Language Learner (ELL) population. Through this partnership, teacher candidates engage in Tier 3 literacy interventions with high school students who are reading at an elementary school level. The presenters will share informal data gathered from student feedback about the field experience. Audience members should expect to gain insight into how to successfully develop community partnerships and overcome the many possible challenges of such partnerships. The "collaborative approaches" of this presentation's title thus include not only the team-teaching of the course, but USI's service-learning partnership with an EVSC school.

The presenters hope to foster discussion among attendees about how their own institutions are addressing the new literacy mandates. The audience will also be asked to share their own experiences with field-based learning experiences in any discipline.

## Experiential Learning: Community Memorialization of Early Black Descendants in Evansville, Indiana

**Tory Schendel-Vyvoda**, Center for Innovation and Change, University of Evansville

Keywords: Community, Collaboration, experimental learning, pedagogy

Type of Work: Teaching Practice

Presentation Format: Lightning

### Abstract:

The Evansville African American Museum, in collaboration with ChangeLab—an interdisciplinary, credit-bearing academic program offered through the University of Evansville’s Center for Innovation & Change—developed a course for the Spring 2025 semester to commemorate the 75 historic graves from the early 1800s uncovered in downtown Evansville in 2023. Through a project-based approach, the museum, the university, and a student, along with the local Black community, worked together to create a memorial ceremony. This included a community listening session at the museum to organize the event and form a committee to create an African American epitaph for a historical marker at the reinternment site.

While graves of individuals from other ethnicities were also uncovered at the historic cemetery, this project focused on engaging community members to honor some of the first Black inhabitants of Evansville. It aimed to reevaluate 21st-century misconceptions and biases, particularly as the cemetery was desegregated. Overall, the project emphasized the importance of various organizations coming together for a common cause. As funding and resources become fewer and farther between, sharing networks, funding sources, and creativity demonstrates how the area of 4th and Vine streets in Evansville, where the 75 historic graves were located, still holds significant Black stories. This collaboration helps to minimize the erasure of Black history and ensures that these narratives are included in America’s historical tapestry.

Furthermore, this course aimed to enhance the student learning experience by combining traditional pedagogical methods, such as assigned readings and lectures from guest speakers and faculty, with a practical, real-world project. Student Olivia Horn (Archaeology '27) expressed how this course aligned with her aspiration to become a bioarchaeologist, focusing on collaborating with descendant community members for the repatriation of cultural materials and remains. In her reflection essay about the course, she stated, “This course emphasized working with community members and provided a valuable experience in community engagement and public archaeology. This experience deepened my understanding of working on gravesites and fueled my curiosity, which led me to apply for and ultimately be accepted into the 2026 Summer Maynooth University Forensic Field School titled ‘Anthropology: Dead Men Do Tell Tales’ in Ireland.”

## From Podcast to Case File: Turning Students into Investigators through *Serial* and *Undisclosed*

**Jennifer Dennis Schaefer**, Criminal Justice, University of Southern Indiana

Keywords: podcasts, curriculum, active learning

Type of Work: Teaching Practice

Presentation Format: Lightning

### Abstract:

This lightning presentation highlights an innovative, experiential learning seminar in which undergraduate criminal justice students moved from passive learners into active investigators through structured engagement with the *Serial* and *Undisclosed* podcasts examining a 1999 murder in Baltimore, Maryland. Rather than listening to the podcasts as supplemental background material, students approached the case as an unfolding investigation, critically evaluating evidence, witness statements, autopsy and lab reports, and procedural decision-making throughout the semester. Podcasts were intentionally selected because prior research demonstrates their capacity to promote deeper engagement, reflection, and experimentation when paired with structured analytical activities (Diphoorn & McGonigle Leyh, 2023; McGarr, 2009).

In this class, students were assigned the role of investigators and maintained structured case files consisting of investigative notes, reflective journals, and episode overviews. These materials were used to track evolving evidence, key actors, court proceedings, testimony, and trial dynamics while encouraging students to distinguish between factual findings, interpretations, and unresolved questions. This scaffolded approach fostered close listening, critical thinking, evidence synthesis, and written analytical reasoning—skills central to criminal justice practice.

After engaging with a local crime scene detective and a forensic lab analyst, students presented mid-semester case theories and potential suspects to a local prosecutor to determine if their cases were “court-ready.” These practitioner interactions allowed students to test their theories against professional perspectives, ask discipline-specific questions, and confront real-world challenges related to evidence processing, forensic interpretation, and prosecutorial discretion. The inclusion of guest experts also enhanced students’ understanding of interdisciplinary teamwork within the criminal justice system.

The project culminated in student presentations in which the investigators formally shared their reconstructed case narratives, evidence assessments, primary suspects, and conclusions regarding the convicted individual’s guilt or innocence. Notably, students overwhelmingly concluded that the convicted offender was likely innocent, prompting rich discussion about wrongful convictions, evidentiary reliability, confirmation bias, and the limits of the adversarial system.

This lightning talk will briefly outline the project design, assessment structure, and learning outcomes, while highlighting how podcast-based case analysis can deepen student engagement, promote active learning, and foster critical evaluation of real-world criminal justice processes.

Diphoorn, T. & McGonigle Leyh, B. (2023). Travelling in the classroom: Podcasting as an active-learning tool for interdisciplinarity. *Journal of Interdisciplinary Studies in Education*, 12(1), 29-49.

McGarr, O. (2009). A review of podcasting in higher education: Its influence on the traditional lecture. *Australasian Journal of Educational Technology*, 25(3), 309–321.



## Impact of Screen Use on Success in Anatomy and Physiology

**Jessica Snow**, Health Sciences, University of Evansville

**Erik Brown**, Health Sciences, University of Evansville

Keywords: screen time, Anatomy and Physiology, attention fragmentation

Type of Work: Scholarship of Teaching and Learning (SoTL) / Scholarly Inquiry

Presentation Format: Poster

### Abstract:

Research Question and Context: Anatomy and Physiology is a foundational course for undergraduate health sciences students. However, student success in Anatomy and Physiology is often a limiting factor in students' progress in their respective degree programs. In our increasingly-media rich world, as students face near constant distractions in the palms of their hands, one potential negative contributor to success in coursework is recreational screen use. Grounding: Although smartphones can be used to promote learning both in the classroom, (e.g. for answering polling questions) and out (e.g. for reviewing anatomy on apps like Teach Me Anatomy), they are impacting learning in alarmingly detrimental ways such as impairing problem-solving skills, fragmenting attention and hindering academic performance (Rathakrishnan et al., 2021, Aru and Rozgonjuk, 2022). Furthermore, promoting conscientious self-regulation of phone usage in learning environments has been shown to improve engagement in the classroom (Harris et al., 2025). In recent classroom discussions, many students report spending more than 4 hours/day on social media, raising concerns about potential for academic success. We hypothesize that the longer students spend on recreational screen use the poorer their success will be in Anatomy and Physiology. Approach/Methods: In this work in progress, we will assess students' screen time habits both in the classroom and out via a voluntary, anonymous post-course survey. Questions will address both students' self-reported success in the course along with their screen time habits. Discussion/Lessons Learned: Awareness of potential long-term impact of these behaviors is important as we serve a generation of digital native students. However, in the short term, we aim to improve student success rates in Anatomy and Physiology. Understanding what factors may inhibit success may improve strategies to support students.

### References:

Aru, J., & Rozgonjuk, D. (2022). The effect of smartphone use on mental effort, learning, and creativity. *Trends in Cognitive Sciences*, 26(10), 821-823.

Harris, I., & Lanius, M. (2025). The Impact of Classroom Architecture and Pedagogical Strategies on University Students' Disruptive Phone Usage in Calculus. *Teaching & Learning Inquiry*, 13.

Rathakrishnan, B., Bikar Singh, S. S., Kamaluddin, M. R., Yahaya, A., Mohd Nasir, M. A., Ibrahim, F., & Ab Rahman, Z. (2021). Smartphone addiction and sleep quality on academic performance of university students: An exploratory research. *International journal of environmental research and public health*, 18(16), 8291.

## Improving Undergraduate Research Skills Using a Scaffolded Semester-Long Proposal Project

**P. Brian Kiessling**, Kinesiology and Sport, University of Southern Indiana

Keywords: Scaffolded learning, undergraduate research, research skill development, research proposal development

Type of Work: Teaching Practice

Presentation Format: Poster

Abstract:

### **Description of the Teaching Practice & Relevance**

One of the goals in the mission statement of the University of Southern Indiana Pott College of Science, Engineering, and Education is to provide opportunities for students to participate in undergraduate research, scientific discovery and hands-on learning experiences. Developing research literacy and methodological understanding is a challenge for undergraduate students, particularly when research skills are introduced through isolated assignments rather than as a cohesive process.

To address this issue, a semester-long research proposal project was implemented as an instructional strategy in an undergraduate exercise science course. Rather than treating research design as a single assignment, students engaged in a scaffolded sequence of activities that collectively resulted in a complete research proposal by the end of the semester.

The teaching practice emphasized incremental skill development through structured milestones, including topic selection, literature review development, research question formulation, and methodological planning. Each component was aligned with course learning outcomes and supported through guided instruction and formative feedback. This approach was designed to promote deeper engagement with research concepts while reducing cognitive overload associated with high-stakes, end-of-term projects.

This teaching practice is relevant to student learning and academic success because research literacy, critical thinking, and scholarly communication are foundational skills across disciplines. By embedding these competencies into a semester-long framework, the project aimed to increase student confidence, improve learning outcomes, and better prepare students for advanced coursework, capstone experiences, and professional or graduate pathways.

### **Presentation Purpose & Takeaways**

The purpose of this presentation is to share an adaptable instructional model for implementing a semester-long research proposal project in undergraduate courses. The presentation will describe the structure of the project, the scaffolding strategies used to support student learning, lessons learned, and general student feedback given throughout the project.

Key takeaways for participants will include:

- Practical strategies for breaking complex research assignments into manageable, sequential components.

- Examples of how formative feedback and structured support can improve student engagement and perceived learning outcomes.
- Lessons learned related to assignment design, pacing, and student motivation.

### **Evidence of Impact on Student Learning**

To evaluate the effectiveness of the teaching practice, students completed an anonymous post-project feedback survey using a 5-point Likert scale. Survey domains included overall project experience, perceived learning outcomes, project structure and instructional support, and skill development related to research and critical thinking. Open-ended questions were also utilized.

General information from student feedback will be shared, which indicated positive perceptions across all domains. Students reported increased confidence in navigating the research process and a stronger understanding of how individual project components contributed to the final proposal. These findings suggest that the semester-long, scaffolded approach supported student learning and academic success related to undergraduate research skills and proposal development.

### **References**

Gauthier, Launa. (2013). How Learning Works: 7 Research-Based Principles for Smart Teaching. *Journal of the Scholarship of Teaching and Learning*.

Puntambekar, S. (2021). Distributed Scaffolding: Scaffolding Students in Classroom Environments. *Educational Psychology Review*, 34(1). <https://doi.org/10.1007/S10648-021-09636-3>

Prince, M., & Felder, R. (2006). Inductive teaching and learning methods: Definitions, comparisons, and research bases. *Journal of Engineering Education*, 95(2), 123–138.

van de Pol, J., Volman, M. & Beishuizen, J. (2010). Scaffolding in teacher-student interaction: a decade of research. *Educational Psychology Review*, 22(3). <https://doi.org/10.1007/S10648-010-9127-6>

## Increasing Awareness for Early Childhood (EI) Practice, Needs, and Resources using Interprofessional Collaborative Education

**Michele Chaleunphonh**, Occupational Therapy, University of Southern Indiana

**Sean Weir**, Occupational Therapy, University of Southern Indiana

**Krista Kercher**, University of Southern Indiana

**Nicollette Leach**, Physical Therapy, University of Evansville

**Sally Van Winkle**, Physician Assistant Science, University of Evansville

**Keywords:** Early Intervention (EI), Interprofessional Education (IPE), Health Professions Education, Student Professional Development  
**Type of Work:** Scholarship of Teaching and Learning (SoTL) / Scholarly Inquiry  
**Presentation Format:** Lightning

### Abstract:

**Background:** There is a growing need nationally for Early Intervention (EI) service providers (Council for Exceptional Children, 2020, 2024; Early Childhood Technical Assistance Center (ECTA), 2025). Therefore, health professions contributors from multiple programs (OT, PA, DPT) and two institutions, the Area Health Education Center (AHEC) clinical coordinator, and Family and Social Service Administration (FSSA) director of training and outreach, created a workshop. The aim was to engage future healthcare practitioners in awareness of EI direct services, team collaboration, child find (referral) systems, resources, and align with coursework to address effective communication. The workshop utilized a short EI presentation, panel, and case study.

**Objective:** Research Questions investigated student learning. One question addressed “Is the workshop effective?”

**Design:** Quantitative pre-posttest design with repeated measures results, included pre-post workshop pilot AHEC survey and retrospective Interprofessional Collaborative Competency Attainment Scale (Revised) (ICCAS-R) (Archibald et al., 2014; Schmitz et al., 2017). The AHEC pilot survey addressed growth in EI Knowledge, Referral, Needs, and Team Collaboration using pre-posted design.

**Participants:** One hundred-twenty university students from five healthcare professions programs in three professional fields registered for the event.

**Methods:** With IRB approval, participants submitted pre-survey and post-survey forms, including the pilot AHEC survey and valid instrument ICCAS-R (Schmitz et al., 2017). Data analyzed used descriptive and inferential statistics with SPSS.

**Results:** Of the fully completed surveys submitted ( $n = 83$ ), Occupational Therapy (OTD, MSOT, AA) students represented 65% of the participants while 30% were Physician Assistant (PA) students and four percent Physical Therapy (DPT) students. Paired sample t-tests indicated a significant difference in EI awareness and IPE competencies from the pre-workshop to post-workshop scores on both tools. AHEC Survey: EI Knowledge (Paired differences  $M = 1.54$ ,  $SD = 1.02$ ;  $t_{(82)} = 13.83$ ,  $p < .001$ ,  $d = 1.58$ ,  $P = 1$ ), EI Referral (Paired differences  $M = 1.74$ ,  $SD = 1.2$ ;  $t_{(82)} = 14.15$ ,  $p < .001$ ,  $d =$

1.55,  $P = 1$ ), EI Needs (Paired differences  $M = 1.02$ ,  $SD = 1.08$ ;  $t_{(82)} = 8.6$ ,  $p < .001$ ,  $d = .95$ ,  $P = 1$ ), and EI Team (Paired differences  $M = .337$ ,  $SD = 1.72$ ;  $t_{(82)} = 2.62$ ,  $p = .010$ ,  $d = .288$ ,  $P = .74$ ). One-Way Independent ANOVA indicated significant difference found between groups (first- and second-year students, program-groups) prior to workshop in all four areas. No significant difference between groups (years and programs) existed after the workshop.

**Conclusion:** This one-day EI interprofessional education (IPE) workshop and multi-institutional study demonstrated effectiveness in supporting interprofessional growth and increased awareness of EI aspects of practice for future healthcare providers. The experience facilitated student understanding of the scope of practice of other professionals and the role of EI in holistic, preventative care. The shared, firsthand learning environment increased awareness, knowledge, and confidence in effective communication and collaborative teamwork to support children and families. The one-day EI IPE workshop created a learning environment which supported the future workforce, EI-IPE best practice, awareness of resources, and understanding the EI processes.

## Integration of Competency-Based Education in Fundamentals Nursing Course

**Michelle Gogel**, Nursing, University of Southern Indiana

Keywords: Competency Based Education, Nursing, Millers Pyramid

Type of Work: Teaching Practice

Presentation Format: Lightning

### Abstract:

The AACN Core Competencies for Nursing Education have been integrated with Miller's Pyramid of Clinical Competence to design a Level 1, Fundamentals in Medical Surgical Nursing course in a BSN undergraduate nurse curriculum at the University of Southern Indiana. This course focuses on entry level nurse skill competencies as an introductory clinical practice course. The students participate in their first clinical experience and introduction to the medical surgical environment performing basic nursing skills. Utilizing the Miller Pyramid, the weekly structure for the course content and objectives follow a sequential process starting with cognitive learning that transitions to concept application resulting in demonstrated behavioral performance thus moving the learner from "knows" to "knows how" to "shows" to "does." This structured approach to course content organization aligns with competency-based education frameworks. Each content specific learning objective is aligned to course learner outcomes as measured through assessment and progression indicators to provide consistent, transparent, level competency assessment. Foundational course concepts for nursing practice are presented in classroom lectures with an emphasis on knowledge attainment, application, and summative assessment. Following lecture, students participate in a lab skills day focused on content specific nursing skills with direct observation and feedback. Students practice the skill with mentorship of faculty during the first half of the day. The afternoon skills lab expands on the motor skill and integrates the knowledge, skills, attitudes, and nurse judgement required to implement the nurse actions in a simulation lab scenario. NLN Simulation Innovation Resource Center patient scenarios along with Virtual Reality software are used. The week concludes with a clinical experience day at a medical center where student performance is integrated into clinical practice and directly observed by faculty for competency-based assessment.

## Lightboard Lectures for online Classes: Build, Teach, Learn

**Srikanth Dandotkar**, Psychology, University of Southern Indiana

**Justin Kramer**, Art and Design, University of Southern Indiana

Keywords: lightboard video lectures, instructor presence, active learning in online courses, sensation and perception

Type of Work: Teaching Practice

Presentation Format: Lightning

### Abstract:

**Description of the Teaching Practice and Relevance.** During the pandemic, lightboards became popular and I remember thinking, that is the missing piece for online lectures. I did not get a chance to act on it until I started building an online version of Sensation and Perception class. In person, when I hit a hurdle, a blackboard and chalk let me slow down, sketch, point, and respond to student confusion in the moment. Online video lectures felt different. Recording with slides made the content feel fixed, and trying to film a traditional board setup felt impractical for clear visuals and instructor presence. I also experimented with screen recording while I drew on a digital whiteboard or tablet. That can help to a point, but it still does not match a lightboard because it is easy to lose eye contact, the drawing can feel detached from the explanation, and the pacing and pointing cues are harder to keep natural. A lightboard let me face the camera while writing and drawing in real time, which is especially useful in a course where ideas are inherently dynamic, such as receptive fields changing from retina to cortex and optic flow conveying self-motion. This approach also aligns with what we know about effective instructional video design, where managing cognitive load, supporting attention, and prompting active processing can improve engagement and learning (Brame, 2016; Guo et al., 2014). Lightboard studies report positive student perceptions and potential learning benefits when lightboard videos are integrated intentionally (Fung, 2017; Rogers & Botnaru, 2019).

**Presentation Purpose and Takeaways.** This lightning presentation shares my hands on journey of designing, building, and using a personally developed lightboard so colleagues who are curious can start smarter and avoid common mistakes. The talk includes a short demonstration that contrasts a traditional slide-based explanation of a Sensation and Perception concept with a lightboard version, highlighting how real time drawing improves pacing, pointing, and visual continuity. Participants will leave with four takeaways: first, a clear setup checklist for a workable recording station including glass, lighting, camera mirroring, audio, and marker choices; second, a quick tour of an OBS Studio workflow that makes recordings more versatile through scene switching, overlays, and capture options (OBS Project, n.d.); third, a curated shortlist of the most useful tutorials and examples, since there are many videos on YouTube and sorting through them is time consuming, and I have already done that sorting; and fourth, a small set of active learning moves that translate well to video, including pause and predict, quick draw along prompts, and short retrieval checks (Brame, 2016).



### **Resources and References.**

- Brame, C. J. (2016). Effective educational videos: Principles and guidelines for maximizing student learning from video content. *CBE—Life Sciences Education*, 15(4), es6. <https://doi.org/10.1187/cbe.16-03-0125>
- Fung, F. M. (2017). Adopting lightboard for a chemistry flipped classroom to improve technology enhanced videos for better learner engagement. *Journal of Chemical Education*, 94(7), 956–959. <https://doi.org/10.1021/acs.jchemed.7b00004>
- Guo, P. J., Kim, J., & Rubin, R. (2014). How video production affects student engagement: An empirical study of MOOC videos. *Proceedings of the ACM Conference on Learning at Scale (L@S '14)*, 41–50. <https://doi.org/10.1145/2556325.2566239>
- OBS Project. (n.d.). Open Broadcaster Software (OBS Studio). <https://obsproject.com/>
- Rogers, P. D., & Botnaru, D. T. (2019). Shedding light on student learning through the use of lightboard videos. *International Journal for the Scholarship of Teaching and Learning*, 13(3), Article 6. <https://doi.org/10.20429/ijsoitl.2019.130306>

## Multimodal Teacher Discourse of Preservice Teachers in Elementary Literacy Instruction

**Hengyi Liu**, Teacher Education, University of Southern Indiana

**Keywords:** multiliteracies, multimodal teacher discourse, preservice teachers, elementary education

**Type of Work:** Scholarship of Teaching and Learning (SoTL) / Scholarly Inquiry

**Presentation Format:** Standard

**Abstract:**

### **Research Question and Context:**

Interactional skills, competencies, and strategies used by teachers in classroom communication have advanced our understanding of the spoken aspects of teacher discourse (Walsh, 2013), particularly from a cognitive perspective. However, this emphasis narrows our view and limits the analysis of teacher discourse within broader sociocultural dimensions, where sociocultural theories (Malcolm et al., 2003; Vygotsky, 1986) can be applied to understanding the multimodal (Kress & van Leeuwen, 2020) representations of meaning-making embodied in teacher discourse. The purpose of this study is to address gaps in the current literature by examining the important role of multimodal teacher discourse among preservice teachers as they mediate literacy practices in elementary schools at the beginning of their careers in Evansville, IN with three key aims:

1. Expand the recognized boundaries of preservice teacher discourse by identifying semiotic modes represented through human interactions and digital technologies;
2. Understand the socially and culturally situated uses of multimodal teacher discourse in mediating literacy practices; and
3. Explore how power is embodied in multimodal teacher discourse in ways that uphold or challenge existing power relations during classroom activities.

### **Grounding:**

Discourse analysis has traditionally been viewed as a qualitative inquiry centered on spoken or written language (Johnstone, 2008). More recent approaches (Kress & van Leeuwen, 2020), however, recommend analyzing language within the broader social and cultural contexts in which communication occurs across multiple modes, including written text, images, sound, gesture, and other semiotic resources. Despite these developments, several issues related to teacher discourse remain underexplored. First, the term teacher discourse continues to be seen as predominantly “verbal-centric” in classroom contexts (Walsh, 2013), often neglecting forms of nonverbal meaning-making. From a broader perspective, language is understood as a complex and intertwined set of symbolic tools (Kress, 2010) mediated through both human interaction and digital technologies. Furthermore, existing literature that conceptualizes discourse solely as a set of cognitive, autonomous skills risks reinforcing a “monoglossic” language ideology, one that overlooks the interconnectedness of language, society, and culture (Edwards, 2009). Such a view limits our understanding of how teachers draw on multiple semiotic modes to construct meaning in diverse educational settings.

**Approach/Methods:**

This study employed an ethnographic methodology as a way of doing and knowing. Multimodal data sources were collected in the form of fieldnotes, audio recordings, lesson plans, images, and video clips. (Multimodal) discourse analysis (Norris, 2019) was applied to examine these data.

**Discussion/Lessons Learned:**

Findings indicate that focal participants leveraged classroom space, available materials, and digital technologies to support students' literacy development in multimodal ways. Preservice teachers used discourse in socially and culturally situated manners to meaningfully engage students in their literacy practices. Additionally, multimodal teacher discourse played a powerful role in establishing and maintaining relationships between teachers and students, while also encouraging learners to generate new meanings and ideas across different semiotic modes.

**References**

- Edwards, J. (2009). *Language and identity*. Cambridge: Cambridge University Press.  
<http://dx.doi.org/10.1017/CBO9780511809842>
- Johnstone, B. (2008). *Discourse analysis* (2nd ed.). Malden, MA: Blackwell Publishing.
- Kress, G. (2010). *Multimodality: A social semiotic approach to contemporary communication*. Abingdon: Routledge.
- Kress, G., & van Leeuwen, T. (2020). *Reading images: The grammar of visual design* (3rd ed.). New York: Routledge. <https://doi.org/10.4324/9781003099857>
- Malcolm, J., Hodkinson, P., & Collet, H. (2003). The interrelationships between informal and formal learning. *Journal of Workplace Learning*, 15(7), 313-318.  
<https://doi.org/10.1108/13665620310504783>
- Norris, S. (2019). Systematically working with multimodal data: Research methods in multimodal discourse analysis. John Wiley & Sons, Inc. <https://doi.org/10.13136/2281-4582/2020.i15.691>
- Vygotsky, L. S. (1986). *Thought and language*. Cambridge, MA: MIT Press.  
<http://dx.doi.org/10.1037/11193-000>
- Walsh, S. (2013). *Classroom discourse and teacher development*. Edinburgh University Press.  
<http://dx.doi.org/10.1515/9780748645190>

## Mutual Gains: Non-presenting undergraduate attendance at regional scientific meetings benefits students and scientific societies

**Alex Champagne**, Biology, University of Southern Indiana

**Sabrina Dunning**, University of Southern Indiana

**Maryam Mahmoud**, University of Southern Indiana

**Elissa Fisher**, Indiana University School of Medicine – Muncie

**Sara Shah**, Biomedical Sciences, Marian University

**Heidi Walsh**, Biology, Wabash College

Keywords: Meeting, Conference

Type of Work: Scholarship of Teaching and Learning (SoTL) / Scholarly Inquiry

Presentation Format: Standard

### Abstract:

Participation in scientific meetings confers many benefits to undergraduate students and promotes their success and retention in science (Mabrouk, 2009; Lien et al., 2019), and these benefits extend to students who are participating but not presenting research (Helm and Bailey, 2013; Flaherty et al., 2018; Gopalan et al., 2018). However, the cost and time required to attend a scientific meeting is often prohibitive for students, and university funding is often restricted to students presenting research. Small regional scientific meetings offer an opportunity to promote non-presenting undergraduate attendance because of their reduced registration fees and travel time, but the benefits of attending regional scientific meetings have not been extensively studied. We recruited 45 non-presenting undergraduate students to attend the annual meeting of the Indiana Physiological Society and provided students with pre- and post-meeting surveys measuring self-perceptions of their professional abilities, sense of belonging in science, confidence in their degree program and career pathway, and reflections on the conference experience. Additionally, because non-presenting undergraduates made up nearly half of all meeting attendees, we surveyed other meeting attendees to assess the impact of these students on the meeting environment. After attending the meeting, students reported increased confidence talking to other scientists and presenting future research, a greater sense of belonging within the scientific community, and increased enthusiasm to attend future meetings. These benefits were similar to those reported for non-presenting students attending large, national meetings (Flaherty et al., 2018; Gopalan et al., 2018). Other meeting attendees felt that the non-presenting undergraduates had a positive impact on the meeting and enhanced the environment for student presenters. Our results suggest that the attendance of non-presenting undergraduates at small regional scientific meetings provides mutual benefits to students, universities, and regional scientific societies.

### References:

Flaherty, E. A., Urbanek, R. E., Wood, D. M., Day, C. C., D'Acunto, L. E., Quinn, V. S., Zollner, P. A. A framework for mentoring students attending their first professional conference. *Natural Sciences Education*, 47: 1–8, 2018.

Gopalan, C., Halpin, P.A., Johnson, K.M.S. Benefits and logistics of nonpresenting undergraduate students attending a professional scientific meeting. *Advances in Physiological Education*. 42: 68-74, 2018.

Helm, H.W., Bailey, K.G.D. Perceived benefits of presenting undergraduate research at a professional conference. *North American Journal of Psychology*. 15(3) 527-536, 2013.

Lien, A., Fyne, A., DeVito, J., Ogunbo, O., Prado, R., Chaparro, J. Promoting undergraduate student engagement in the SCRA biennial conference. *Global Journal of Community Psychology Practice*. 10(2): 1-12, 2019.

Mabrouk, P.A. Survey study investigating the significance of conference participation to undergraduate research students. *Journal of Chemical Education* 86: 1335-1340, 2009.

## Observing Clinical Practice: Feedback Strategies to Bridge Theory and Practice Gaps

**Deeksha Aradhya**, Teacher Education, University of Southern Indiana

**Jill Raisor**, Teacher Education, University of Southern Indiana

Keywords: Clinical observation, Feedback strategies, Theory-to-practice

Type of Work: Teaching Practice

Presentation Format: Standard

### Abstract:

Clinical observation is a cornerstone of professional education, yet the process of providing effective feedback and ensuring true theory-to-practice translation remains a significant challenge for educators. This presentation addresses this critical gap by presenting a structured, evidence-based framework (Mathien, T., 2025) for clinical observation and feedback delivery. The presenters will introduce tools such as GoReact, AI, and examples of feedback documentation. The small-group case studies will be presented utilizing GoReact. This is a platform where teacher candidates can upload videos of them teaching and then we provide analysis and feedback. Through case analysis and group activities, attendees will practice applying these strategies to real-world clinical scenarios. The goal is to equip educators with actionable tools to transform observation from a passive evaluation event into a powerful catalyst for professional growth, ensuring future practitioners can confidently and competently bridge the divide between classroom knowledge and complex clinical realities.

## Oral Exams for Authentic Assessment in STEM Fields

**Susan Ely**, Engineering, University of Southern Indiana

Keywords: Oral Exams, Assessment

Type of Work: Teaching Practice

Presentation Format: Poster

### Abstract:

Oral exams are not typically associated with STEM fields which contain many quantitative based coursework, however, pedagogical studies have show that academic rigor, can be upheld through assessing student understanding using oral exams (Rubin, et al, 2025; Ward, et al, 2024). Additionally, assessment via oral exams has been shown to provide faculty with a more accurate indication of student learning than traditional paper-based quizzes and tests (Theobold, 2021; Zhu, 2020). Students also have expressed positive opinions about oral assessments, as having a lower impact on their stress experienced during examine preparation and the exams themselves (Rubin, et al 2025), as well as providing a better opportunity to showcase their knowledge and understanding about a topic, even in quantitative coursework (Mascadri, et al, 2023; Theobold, 2021).

Having investigated previous studies on the use of oral exams, a faculty in a STEM field employed oral examines in two courses, where paper-based tests had previously been used. These assessments were repeated for three semesters, gathering feedback from students about their perceptions, preferences and stress experienced using oral exams, compared to paper-based tests. In each course where oral exams were offered, students provided positive feedback and stated a clear preference for oral exams. Additionally, student perception surveys administered by the institution revealed the oral exams to be featured as one of the innovations that students appreciated about the course. When compared with answers to similar questions in paper-based tests, the faculty found that the oral exam led to more thorough responses and demonstrated the students ability to make connections with the content across multiple courses within the program of study.

This presentation will review the format of the exams, the method for preparing students for the exams, the execution of the exams, preparation of the exam rubrics and summarized experiences of participants. The faculty will also discuss challenges to implementation and changes made over time to make the assessment clearer and easier to grade.

### References

Mascadri, J., Spina, N., Spooner-Lane, R., & Briant, E. (2023). Assessors' perspectives of an oral assessment within a teaching performance assessment. *Assessment & Evaluation in Higher Education*, 48(5), 613–626. <https://doi.org/10.1080/02602938.2022.2122930>

Rubin, N., Tackett, M., Çetinkaya-Rundel, M., & Meyer, E. (2025). Evaluating Student Perceptions of Assessment in Introductory Quantitative Studies. *International Journal of Assessment & Evaluation*, 32(1), 129–160. <https://doi.org/10.18848/2327-7920/CGP/v32i01/129-160>



Theobold, A. (2021). Oral Exams: A More Meaningful Assessment of Students' Understanding. *Journal of Statistics and Data Science Education*, 29(2), 156–159.  
<https://doi.org/10.1080/26939169.2021.1914527>

Ward, M., O'Riordan, F., Logan-Fleming, D., Cooke, D., Concannon-Gibney, T., Efthymiou, M., & Watkins, N. (2024). Interactive oral assessment case studies: An innovative, academically rigorous, authentic assessment approach. *Innovations in Education & Teaching International*, 61(5), 930–947. <https://doi.org/10.1080/14703297.2023.2251967>

Zhu, M. (2020). Effective Pedagogical Strategies for STEM Education from Instructors' Perspective: OER for Educators. *Open Praxis*, 12(2), 257–270.

## Progress, Not Perfection: A Person-First Approach to Teaching Pre-Health Students

**Johnica Winter**, Biology, Franklin College

Keywords: Person-First Teaching; Pre-Health Students; Collaborative Learning;  
Building Community

Type of Work: Teaching Practice

Presentation Format: Standard

### Abstract:

Anyone who teaches pre-health students knows that they are prone to being both a high-achieving and a high-anxiety demographic. They are under immense pressure to maintain a high GPA while also balancing multiple extracurricular activities, gaining shadowing hours and clinical experiences, preparing for entrance exams, and other tasks required to enter into the health professions following graduation. These students are particularly focused on doing well in their science courses and often hyper-fixate on grades, which are frequently tied to their sense of self-worth and used as their metric for success. Anatomy and physiology courses are some of the most relevant courses taken by pre-health students, and yet they seem to evoke the most trepidation. The sheer amount of content within these courses generates a great deal of stress and anxiety among students. Maintaining the rigor of courses with such content can demotivate students; however, reducing the amount of content can be a disservice to students, leaving them unprepared for graduate level work. As an instructor, finding the right balance between appropriate rigor and student engagement can be a challenge. Over the past few years, I have been striking this balance by focusing on building a culture of communication, collaboration, community, and compassion with my students. During the first week of class, I emphasize the importance of communication by taking extra time to make expectations and class policies clear. Throughout the semester, we engage in collaborative (and sometimes competitive) activities in the classroom and in the laboratory. Students also work on group assignments and are encouraged to form study groups. This course design creates a strong sense of community among students. I also model compassion through course policies that hold students accountable while also providing flexibility for life occurrences outside of the classroom. This type of person-first approach to teaching encourages a focus on progress, not perfection, and prepares students for their future careers by giving them tools and helping them to develop skills that will allow them to balance the mental and emotional demands of working in healthcare.

## Putting the AI in IterAtIve: Freeing Faculty from Feedback Overload

**JD Weagley**, Course Production, Purdue University

**Larissa Cremeens**, Teaching and Learning Technologies, Purdue University

Keywords: course evaluations, generative AI, continuous improvement, faculty development

Type of Work: Teaching Practice

Presentation Format: Standard

### Abstract:

In higher education, student evaluations (such as end of course evaluations, instructor-created checkpoints, etc.) often produce lots of feedback without offering clear insights for faculty on how to meaningfully improve their teaching or their course content. Faculty report feeling overwhelmed by the volume and variability of narrative comments, which can limit the degree to which evaluation data truly informs course redesign and instructional growth (Cortes et al., 2022; Lauer, 2012; Sidwell et al., 2025). This presentation offers a practical, evidence-grounded approach for turning that challenge into an opportunity by integrating generative artificial intelligence (AI) into an iterative cycle of continuous improvement.

Attendees will learn how AI tools can be used to systematically extract, summarize, and interpret both quantifiable data and qualitative evaluation data, including descriptive comments, become *actionable insights*. Drawing from an instructional design workflow developed in practice, the session will demonstrate AI-supported methods for organizing feedback themes, identifying patterns linked to learning outcomes, and generating faculty-friendly summaries. These methods allow faculty and instructional designers to move beyond subjective interpretation and engage with evaluation results in ways that directly inform revision plans for course content, assessments, and learner engagement strategies.

The core focus of this teaching practice presentation is continuous improvement through clarity, not just automation. By showing how AI helps faculty reduce cognitive load and enhance reflection on student feedback, this work connects directly to student learning and academic success: faculty are better able to respond to student needs, adjust pedagogical approaches, and foster more effective learning environments. The presentation will also address common concerns about AI use, including accuracy of verification and ethical considerations, ensuring participants can apply these practices responsibly.

### Purpose & Takeaways:

Participants will walk away with:

1. Identify AI-supported workflow for processing course evaluations.
2. Practical strategies for translating narrative and quantified student feedback into targeted improvement actions.
3. A set of adaptable templates and prompts for using AI tools in their own evaluation interpretation and course design processes.
4. Insight into how this approach supports ongoing faculty development and instructional enhancement.

Through examples, audience interaction, and reflective discussion, this session empowers faculty and educational developers to transform *feedback overload into continuous improvement* by anchoring practice in evidence, reducing workload, and enhancing alignment between student perspectives and pedagogical decisions.

#### References

Cornes, S., Torre, D., Fulton, T. B., Oza, S., Teherani, A., & Chen, H. C. (2022). When students' words hurt: 12 tips for helping faculty receive and respond constructively to student evaluation of teaching. *Medical Education Online*, 28(1). <https://doi.org/10.1080/10872981.2022.2154768>

Lauer, C. (2012). A comparison of faculty and student perspectives on course evaluation terminology. *To Improve the Academy*, 31. <http://dx.doi.org/10.3998/tia.17063888.0031.017>

Sidwell, D., Lee, D., Zimmerman, P-A., Bentley, S., & Barton, M. (2025). Teaching faculty experiences with student evaluation of instruction: A mixed-methods study. *Teaching and Learning in Nursing*, 20(1), 276-284. <https://doi.org/10.1016/j.teln.2024.11.009>

## Reimagining Case Studies: Disability Inclusion and Cross-Curricular Learning

**Summer Wilderman**, Social Work, University of Southern Indiana

**Jara Dillingham**, Social Work, University of Southern Indiana

Keywords: case studies, disability, cross curriculum teaching

Type of Work: Teaching Practice

Presentation Format: Standard

### Abstract:

As educators, we are called to transform students into professionals, to induce competencies and transferable skills for the modern workplace. This requires a shift from traditional, passive, historical approaches to active, relevant ones. Using case studies involving individuals with disabilities in curriculum addresses this.

The use of case studies in higher education originated in 1870 (Garvin, 2003). This is not a new approach but remains valuable. If best practices, such as using short, real world, contemporary, interesting, relevant (Herreid, 2005) and competency focused (Naumes & Naumes, 2000) cases are used, student learning goals of applying knowledge, developing action plans, and solving problems are supported. This creates an interactive, learner-driven environment increasing exam performance, communication skills, and application of theory (Bonney, 2025). Critical thinking skills are developed and ethical reasoning and exposure to diverse situations, contexts, and clients are enhanced (The Real Cases Project, 2025) while students demonstrate learning across core competencies (Sibbald, et al., 2025).

The Americans with Disabilities Act (ADA) defines disability as “a physical or mental impairment that substantially limits one or more major life activity” (2020). This includes intellectual disabilities, mental health diagnoses, and physical disabilities, making it “the largest minority in the world” (Ashoka, 2021) with more than 1 of 4 adults in the US having a disability (CDC, n.d.). Many of these disabilities are invisible, creating a lack of awareness. These statistics demonstrate the high probability of students encountering others with a disability, no matter their major.

In addition to prevalence, many disciplines’ ethical standards include language around inclusion, diversity, discrimination, equal opportunity, relationships, communication, and human rights (Ethisphere, 2024). When asked about hiring practices, employers indicated seeking candidates with problem solving, teamwork, and communication skills (Gray, 2024). They want employees who are flexible and adaptable with analytical capacity. As educators, we can help students develop these skills using case studies that move away from viewing disability as biological and a deficit (Wright, 2024) toward a more social, human rights, or relational model (Clarke & Westmore, 2022; Goulden, 2020) allowing students to use practical knowledge, give context to oppression, and encourage advocacy (Shier et al., 2019).

There is value in disability exposure and utilizing case studies in higher education, but the value increases further if these disability case studies are applied throughout curriculum. Doing so helps students connect bigger ideas across subjects, building a deeper, more relevant understanding of their entire career field, not just one area of study (Dewey, 2021). It also provides transparency, showing the interconnection of knowledge, and displaying the "why" behind learning.

Writing and using more intentional case studies, incorporating disability and applying them across curriculum, brings real-world relevance to the classroom, demonstrates applicability of concepts, and equips students with new and innovative ways of thinking. Following best practices in case study creation supports collaboration, transparency, and belonging across disciplines, preparing students to enter the modern workforce with competence and confidence.

### **Purpose & Takeaways:**

The purpose of this presentation is to highlight the need for educators to be more intentional in preparing students to encounter those with disabilities in the workforce. The presenters will demonstrate how to design case studies, utilizing best practices, that move beyond traditional content delivery to better prepare students for real-world practice by strengthening critical thinking, ethical reasoning, communication, and problem-solving skills.

### **Upon Completion:**

1. Participants will be able to recognize the value of using disability inclusive case studies.
2. Participants will become familiar with tools to incorporate disability case studies into their courses.
3. Participants will consider implementation within courses across their program curriculum.

### **References**

- ADA.gov [ADA]. (2020, February 28). Guide to Disability Rights Laws. *ADA.gov: U.S. Department of Justice Civil Rights Division*. <https://www.ada.gov/resources/disability-rights-guide/>
- Ashoka. *Disability as Diversity*. (2021, April 3). [Video]. You Tube. <https://www.youtube.com/watch?v=zEFliYZWpJ4&t=232s>
- Bonney, K. (2025, May 1). Case Study Teaching Method Improves Student Performance and Perceptions of Learning Gains. *Journal of Microbiology & Biology Education*, 16(1), 21-28. <https://doi.org/10.1128/jmbe.v16i1.846>
- Centers for Disease Control and Prevention [CDC]. (n.d.). Disability impacts all of us [Infographic]. *U.S. Department of Health and Human Services*. <https://www.cdc.gov/disability-and-health/media/pdfs/disability-impacts-all-of-us-infographic.pdf>
- Clarke, E. & Westmore, M. (2022). Social Work with Persons with Disabilities. *Introduction to Social Work: A Look Across the Profession*. Mavs Open Press. [Social Work with Persons with Disabilities – Introduction to Social Work: A Look Across the Profession](#)
- Dewey, J. (2021). Interdisciplinary/Cross Cultural Teaching. *EBSCO*. <https://www.ebsco.com/research-starters/education/interdisciplinarycross-curricular-teaching>
- Ethisphere. (2024, December 5). 5 Codes of Conduct We Love & Why. *Ethisphere.com*. <https://ethisphere.com/best-codes-of-conduct-examples/#:~:text=Some%20common%20risk%20areas%20addressed%20in%20codes,the%20reader%20understand%20a%20process%20or%20workflow>
- Garvin, D. (2003, September 1). Making the Case. *Harvard Magazine*. <https://www.harvardmagazine.com/2003/09/making-the-case-html#:~:text=The%20Law%20School%20led%20the,the%20end%20of%20the%20decade>

Goulden, A. (2020, June 29). Disability competency in social work education: Tools for practice teaching. *Journal of Practice Teaching & Learning*, 17(2), 61-77.  
<https://doi.org/10.1921/jpts.v17i2.1175>

Gray, K. (2024, December 9). What Are Employers Looking for When Reviewing College Students' Resumes? *National Association of Colleges + Employers*. [https://www.nacweb.org/talent-acquisition/candidate-selection/what-are-employers-looking-for-when-reviewing-college-students-resumes#:~:text=JOB%20OUTLOOK%202025%20SLIDES&text=\(See%20Figure%201.\),at%20kgray@nacweb.org](https://www.nacweb.org/talent-acquisition/candidate-selection/what-are-employers-looking-for-when-reviewing-college-students-resumes#:~:text=JOB%20OUTLOOK%202025%20SLIDES&text=(See%20Figure%201.),at%20kgray@nacweb.org)

The Real Cases Project. (2025). Real Case Studies in Social Work Education. *Adelphi University*, NY. <https://www.adelphi.edu/social-work/social-justice/real-cases/introduction/real-case-studies-in-social-work-education/#:~:text=Case%20studies%20are%20often%20utilized,each%20course%20in%20the%20curriculum>

Wright, K. (2024). Getting to Disability Justice: A Critical Conceptual Review of Disability Models in U.S. Social Work. *Journal of Sociology & Social Welfare*, 51(1). <https://doi.org/10.15453/0191-5096.4723>



## Showing the stars with the stars!

**Kurt Messick**, Astronomy and Physical Sciences, Ivy Tech Community College - Bloomington

Keywords: Videos, engagement, community, speakers

Type of Work: Teaching Practice

Presentation Format: Standard

### Abstract:

This presentation examines a large-scale celebrity engagement project involving interviews with more than one hundred public figures, primarily from science fiction franchises such as Star Trek and Battlestar Galactica, as well as prominent voices in comedy. Designed for use in higher education, particularly within astronomy and Earth science courses, the project demonstrates how popular culture and direct celebrity engagement can be leveraged as an effective pedagogical tool to enhance student interest and participation.

The project consists of both straight-to-camera interviews and live Zoom conversations, offering varied modes of interaction that reflect contemporary media literacy and communication practices. During the 15-minute presentation, selected excerpts are used to illustrate how science fiction narratives and comedic commentary can serve as accessible entry points for complex scientific concepts, including space exploration, planetary science, climate systems, and humanity's relationship with technology. These media segments are intentionally brief and strategically placed to maintain attention while reinforcing course learning objectives rather than replacing traditional instruction.

From a teaching and learning perspective, the project emphasizes active engagement and student encouragement. By featuring recognizable cultural figures, instructors can reduce barriers to participation, particularly for students who may feel intimidated by technical scientific material. The familiarity of science fiction and comedy creates a shared cultural reference point, encouraging students to ask questions, make connections, and articulate their own interpretations. Instructors can use these interviews as prompts for guided discussion, reflective writing, or small-group analysis, fostering critical thinking and inclusive classroom dialogue.

The presentation also addresses instructional strategies for aligning entertainment-based materials with academic rigor. Faculty are encouraged to frame celebrity commentary within evidence-based scientific frameworks, prompting students to distinguish between speculative fiction and empirical science. This approach supports scientific literacy by inviting students to evaluate accuracy, identify misconceptions, and explore how fictional narratives have influenced real-world scientific innovation and public perception of science.

Following the presentation, a 5-minute question-and-answer session models effective facilitation techniques for classroom use. Participants are encouraged to consider how open-ended questioning, validation of student contributions, and respectful correction of misunderstandings can create a supportive learning environment. The Q&A segment also highlights adaptability across disciplines, demonstrating how similar strategies could be applied in physics, environmental studies, media studies, communication, or interdisciplinary general education courses.

Overall, this project positions celebrity engagement not merely as entertainment, but as a purposeful instructional resource that promotes curiosity, motivation, and deeper learning. By integrating popular culture with sound teaching practices, the presentation illustrates how educators can encourage student engagement, enhance conceptual understanding, and foster a classroom environment where science feels relevant, approachable, and intellectually rewarding.

## Teach Like a Magician: Card Tricks & Instructional Design

**Spence Farmer**, Online and Adult Learning, University of Southern Indiana

Keywords: Instructional Design, Cognitive Load, Scaffolding, Engagement

Type of Work: Teaching Practice

Presentation Format: Standard

### Abstract:

Educators - especially those teaching online - are challenged to design learning experiences that are clear, memorable, and cognitively manageable. Students face short attention spans, information overload, and instructional materials that try to do too much at once. The result is a high noise-to-signal ratio in course design: too many ideas competing for too little attention.

One of the cleanest models of effective teaching already exists on the internet in a surprising format: magic trick tutorials. Magic educators on YouTube exemplify the instructional moves we want faculty to master: distilling a complex skill into its vital few steps, sequencing ideas to pique curiosity, and demonstrating each action slowly, cleanly, and visually.

The purpose of this session is to equip faculty with a simple, repeatable, evidence-based framework for designing clearer demonstrations and instructional videos. This presentation uses the analysis of a magic trick tutorial as a playful but rigorous model of evidence-based teaching practice. By analyzing how magicians teach, we uncover four principles transferable to any discipline:

1. **"Show the magic first."** (Spark curiosity before launching into explanation.),
2. **"Show the trick next."** (Teach visually, slowly, and sequentially.)
3. **"Tell me exactly what to do."** (Use scaffolding to give specific, measurable steps.)
4. **"Tell me who you are."** (Small, personal details build loyalty with listeners over time.)

These principles map directly onto cognitive load theory, behavioral learning theory, and multimodal scaffolding. This framework directly supports student success by improving comprehension, boosting confidence during skill acquisition, and reducing rewatching and clarification requests.

At a moment when higher education relies heavily on video-based instruction, magic tutorials provide a vivid contrast between overly complex academic explanations and clean, essentialist models that invite understanding rather than overload. Participants will watch a live magic tutorial and learn how to translate its teaching architecture into their own courses. Attendees will leave with concrete, immediately applicable tools:

- **How to frame content using problem-solution ordering** to create curiosity, stakes, and clarity.
- **How to design short instructional videos** that mirror effective magic tutorials.
- **How to apply Essentialism** to reduce extraneous load and focusing on the "vital few" steps students truly need.
- **How to use scaffolding** and deliberate modeling to break complex skills into achievable progressions.

- **How to analyze their own teaching** using a 4-step framework derived from the tutorial format.

This session offers a simple, memorable mental model - “teach like a magician” – that makes evidence-based practice intuitive, visual, and immediately actionable.

#### Sources

Anderson, L. & Krathwohl, D. (2001). *A taxonomy for learning, teaching, and assessing* (Classic, peer-reviewed update to Bloom’s educational framework.)

Miller, George A. (1956). "The magical number seven, plus or minus two: some limits on our capacity for processing information". *Psychological Review*. 63 (2): 81–97.

Mismag822 - The card trick teacher. (n.d.). YouTube.

<https://www.youtube.com/@mismag822/videos>

Moser, K., et al. (2021). Parasocial interaction and online learning. *Journal of Media Psychology*.

Popper, K. (1999). *All Life is Problem Solving*. Routledge.

Stein, J.-P., Linda Breves, P., & Anders, N. (2022). Parasocial interactions with real and virtual influencers. *New Media & Society*, 26(6), 3433-3453.

<https://doi.org/10.1177/14614448221102900> (Original work published 2024)

## Use of a Poster Session to Better Match Senior Design Projects with Faculty Advisors

**Nicole Becklinger**, Engineering, University of Southern Indiana

Keywords: faculty advisor, poster, design, senior design

Type of Work: Scholarship of Teaching and Learning (SoTL) / Scholarly Inquiry

Presentation Format: Lightning

### Abstract:

Students in USI's engineering and manufacturing engineering technology programs must complete a capstone senior design project over the course of two semesters. In the past, there have been issues matching senior design projects with faculty advisors and mentors. At times, faculty have only become aware of senior design projects matching their areas of expertise during the final presentations of these design projects. To address this issue, students were assigned to present their proposed senior projects in a poster session during the 8<sup>th</sup> week of their first semester of the two-semester senior design sequence. This assignment was first introduced to the pre senior design class of Fall 2025. Informal feedback from students and faculty indicated that the assignment aided in matching student design projects with faculty advisors and mentors. These anecdotal observations will be more formally examined in an upcoming survey-based study beginning in Spring 2026. It is hoped that the upcoming research project will provide insights into how a poster session with faculty attendees conducted early in the development process might aid in matching student projects with faculty mentorship.

## USI Student Perceptions of Generative Artificial Intelligence

**Jennifer Skelton**, Health Informatics and Information Management, University of Southern Indiana

**Jara Dillingham**, Social Work, University of Southern Indiana

**Erin Reynolds**, Health Services Administration, University of Southern Indiana

**Zachary Ward**, Health Services Administration, University of Southern Indiana

**Brian Crose**, Online and Adult Learning, University of Southern Indiana

**Quentin Maynard**, Social Work, University of Southern Indiana

Keywords: Generative artificial intelligence, academic work, student perceptions

Type of Work: Scholarship of Teaching and Learning (SoTL) / Scholarly Inquiry

Presentation Format: Standard

Abstract:

### Context

Higher education institutions continue to confront questions surrounding student use of generative AI tools such as ChatGPT, Copilot, and Gemini. Policies differ widely, from outright bans to required class use. The broader landscape is rapidly evolving, with headlines highlighting both concerns and opportunities. For example, a Northeastern University student recently requested a tuition refund after learning that her professor used ChatGPT to provide feedback (Burman, 2025), while OpenAI is simultaneously partnering with two state university systems to pilot academic integrations (Singer, 2025). So, where does this leave the University of Southern Indiana?

### Grounding/Research Questions

Building on prior work (Deschenes & McMahon, 2024; Marshik et al., 2024), a faculty team developed an online Qualtrics survey to examine USI students' use of generative AI. This descriptive study focused on four questions:

1. Do students currently use generative AI tools in their academic work?
  - How frequent is their use?
2. In what ways are students likely to use Gen AI for academic work?
3. Do students feel prepared to use Gen AI tools in their future careers?
4. Where are students' concerns about using Generative AI tools for academics?

### Method/Results

The study surveyed 3,010 students from the USI College of Liberal Arts and Kinney College of Nursing and Health Professions in November 2025 and achieved a 12.2% response rate. 57.5% of students have used Gen AI tools like ChatGPT, Copilot, etc. for academic work with 74.8% of those using tools somewhat frequently to frequently. 80.9% of students are somewhat unlikely or unlikely to use Gen AI to write a paper and 86.9% are somewhat unlikely or unlikely to use Gen AI while taking an exam. Students are using Gen AI to provide feedback or edit their writing (71.6%), to study or prepare for an exam (59.5%), and to brainstorm for a class project or presentation (70.0%). Only 55.2% of students feel prepared to use Gen AI tools in their future career. Additionally, 37.4% of students avoid AI altogether.

### Discussion/Lessons Learned

Overall, the findings suggest that while generative AI tools are known and increasingly incorporated into USI students' academic workflows, their use remains intentional and guided by ethical boundaries. USI students who use tools such as ChatGPT, Copilot, or Gemini rely on them primarily for low-stakes academic support such as editing assistance, brainstorming, and study preparation, rather than for tasks that would substitute for their own work. This is reflected in the strong reluctance to use AI to write papers or during exams. Despite tool familiarity, only 55.2% of students feel prepared to use generative AI in their future careers, highlighting a growing gap between current classroom practice and evolving workforce expectations. Notably, 37.4% of students deliberately avoid AI, often citing concerns about plagiarism, diminished learning, and, in a smaller but meaningful subset, environmental impact. These results indicate that USI students view generative AI as a supportive tool rather than a replacement for their own academic efforts and also underscores the need for intentional instruction and guidance on responsible, career-aligned AI integration.

### References

- Burman, T. (2025, May 19). College students want their money back after professor caught using ChatGPT. *Newsweek*. Retrieved June 9, 2025, from <https://www.newsweek.com/college-ai-students-professor-chatgpt-2073192>
- Deschenes, A. & McMahon, M. (2024). A survey on student use of generative AI chatbots for academic research. *Evidence Based Library and Information Practice*, 19(2), 2–22. <https://doi.org/10.18438/ebliip30512>
- Marshik, T., McCracken, C., Kopp, B., & O'Marrah, M. (2024). Student and instructor perceptions and uses of artificial intelligence in higher education. *Teaching of Psychology*, 0(0). <https://doi.org/10.1177/00986283241299745>
- Singer, N. (2025, June 7). Welcome to campus. Here's your ChatGPT. *The New York Times*. Retrieved June 9, 2025 from <https://www.nytimes.com/2025/06/07/technology/chatgpt-openai-colleges.html>

## WIP: An investigation into students' perceived preparedness for writing a large technical document for their capstone design projects

**Bradley Kicklighter**, Engineering, University of Southern Indiana

**Julian Davis**, Engineering, University of Southern Indiana

**Susan Ely**, Engineering, University of Southern Indiana

**Nicole Becklinger**, Engineering, University of Southern Indiana

**Ryan Integlia**, Engineering, University of Southern Indiana

**Adam Tennant**, Engineering, University of Southern Indiana

Keywords: capstone, LaTeX, Microsoft Word, design, technical report

Type of Work: Scholarship of Teaching and Learning (SoTL) / Scholarly Inquiry

Presentation Format: Standard

### Abstract:

Engineering students are typically required to produce an extensive technical document summarizing their capstone design project during their senior year. Senior design is a two-semester sequence consisting a “pre-senior design” course and a “senior design” course in which they develop this technical report alongside their project. At this small Midwestern institution, students commonly use Microsoft (MS) Word to prepare these technical reports. However, faculty have observed that students often spend significant time addressing formatting issues rather than focusing on writing or revising content. Others have made similar observations about formatting in large documents [1].

This study investigates if students:

- 1) feel prepared to format large technical documents using Microsoft Word entering their senior year,
- 2) are willing to learn a new tool (LaTeX) for formatting large technical documents,
- 3) can be successful formatting technical documents using LaTeX,
- 4) feel it is easier to prepare a large technical document using LaTeX compared to Microsoft Word.

LaTeX, a typesetting system widely used in engineering and scientific writing, offers a more structured approach by separating formatting from content. Although it requires some initial learning, LaTeX produces highly professional results and is particularly well-suited for compiling multi-part documents [1][2].

In this study, the principal investigators (PIs) surveyed students to assess their self-reported proficiency in key aspects of technical document creation in MS Word — including generating sections, tables of contents, lists of figures and tables, page numbering, and bibliographies—and to gauge their interest in learning LaTeX. Based on survey responses, approximately 50% of students expressed interest in learning LaTeX. The PIs offered a 2.5-hour introductory workshop to the interested students from the pre-senior design courses and intend to provide ongoing mentoring support for those who plan to use LaTeX for their reports. Overleaf (online LaTeX



collaborative editor) was used in the workshop (like Thoenes) [3]. The students were provided with a senior design report LaTeX template to use during the workshop (like Youst and Krishnan) [4].

Preliminary survey results from fall 2025 pre-senior design indicate that students feel confident using MS Word for creating tables of contents, page numbering, and figure captions but are less confident in developing appendices, bibliographies, and customized page numbering styles. A similar survey will be administered following the pre-senior design course to compare outcomes between and among students who received LaTeX training and those who did not.

## References

- [1] M. R. Apostol, "Why I Transitioned from Microsoft Word to LaTeX," Blank Page. Accessed: Dec. 12, 2025. [Online]. Available: <https://medium.com/blankpage/why-i-transitioned-from-microsoft-word-to-latex-7b9392705167>
- [2] M. Knauff and J. Nejasmic, "An Efficiency Comparison of Document Preparation Systems Used in Academic Research and Development," *PLOS ONE*, vol. 9, no. 12, p. e115069, Dec. 2014, doi: [10.1371/journal.pone.0115069](https://doi.org/10.1371/journal.pone.0115069).
- [3] Ethan Michael Thoenes, "A Case in Support of LATEX," University of Alabama in Huntsville, Huntsville, AL, 2023. Accessed: Dec. 12, 2025. [Online]. Available: <https://louis.uah.edu/cgi/viewcontent.cgi?article=1838&context=honors-capstones>
- [4] S. Yost and M. Krishnan, "Document Management In Team Oriented, Project Based Courses: Evaluating A Latex/Subversion Based Approach," presented at the 2007 Annual Conference & Exposition, ASEE, June 2007, p. 12.562.1-12.562.10. doi: [10.18260/1-2--1659](https://doi.org/10.18260/1-2--1659).