*TILT*ed Pedagogy

A Collection of Evidence-Based Assignments to Inspire Learning in Higher Education

Editors
Shannon M. Sipes
Mandy Frake
Jennifer C. Friberg

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TILTED PEDAGOGY

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FOREWORD

Mary-Ann Winkelmes, *Founder and Director of TILT Higher Ed*

An open-access book about transparency in learning and teaching (TILT) is welcome and opportune because TILT itself advocates and offers open access. Through direct communication about methods of learning and teaching, postsecondary educators and learners can share access to processes that aren't always evident, like why and how teachers choose to construct specific learning exercises, and precisely how students experience them. Using the simple, tripartite Transparency Framework (of purpose, task, criteria) occasionally to guide educators' and learners' reciprocal discussion of approaches and examples and expectations for work before students undertake the work has enhanced students' confidence, belonging, skill development, metacognition, work quality, and awareness of the value of their learning significantly, with even greater gains for underserved students, including first in family to attend college or university, low-income, and ethnically or racially underrepresented (Winkelmes et al. 2016; Gianoutsos and Winkelmes 2016; Calkins and Winkelmes 2018; Winkelmes, Boye, and Tapp 2019/2023). The original TILT framework is published along with TILT's tools and materials, videos, podcasts, slides, and example assignments under a creative commons 4.0 international license on the TiltHigherEd.com website where visitors can borrow, share, apply, and adapt with appropriate citation. Many educators, including the authors of this volume, have done just that, circulating TILT practices far and wide across six continents to enhance student success equitably. Readers of this volume will find a collection of valuable and varied examples from postsecondary institutions across the United States, Canada, and Australia, provided with open access by the authors and editors in collaboration with Elon University's Center for Engaged Learning Open Access Book Series.

This book models a tenet of the TILT framework regarding criteria: before students begin any assigned piece of academic work, they and their teachers together consider multiple examples in real-world contexts students are likely to encounter that demonstrate varying levels of success and illustrate different acceptable approaches to such work. This prepares and encourages students to evaluate their own work and the effectiveness of their process while their work is underway. Collectively, the authors of this book engage in the process of evaluating multiple examples. They offer sixteen of them in the form of assignment prompts that students worked from— the actual written artifacts from the discussions among teachers and students about the expected work that students would undertake. The authors assess their assignments and the processes they followed. They share what worked and what didn't, and their plans for future adjustments. They also suggest variations that readers might use in their own teaching and learning situations. Their transparency benefits readers. It allows us to locate the examples most relevant to us, and then apply TILT with our own students, informed by the authors' suggestions that will help us to monitor the success of our own ongoing TILT interventions.

Readers have a wide variety of instances to consider in this collection of TILT applications that worked across many academic disciplines and professions. The examples come from multiple institution types: public, private, military, two-year, four-year, and post-doctoral degree-granting research universities. At institutions where student populations range in size from small (approximately 2,500) to very large (approximately 71,200) the authors have applied TILT in ways that help students feel included, confident of their progress, and aware of how the skills and knowledge they are acquiring will be valuable to them now and as lifelong learners long after this book's publication date.

The chapters here illustrate how the TILT framework has served as a reliable and evidence-based guide during times of change to inform educators' and learners' approaches to the daily work of teaching and learning. The authors demonstrate that TILT is an ongoing, iterative process. They created transparency with their students by collaboratively

considering the purposes, tasks, and criteria for students' upcoming work, making small changes, and assessing the outcomes. Their applications of TILT will continue to vary, because each group of students will be different, and because new challenges in higher education will arise (like the COVID-19 pandemic that began in 2020 or the current proliferation of artificial intelligence). Questions about purposes, tasks, and criteria that teachers and students consider together will guide teachers like the authors and readers of this book in choosing the evidence-based practices that support their students' evolving learning needs and interests.

The authors provide many examples of how the TILT framework supported their work as reflective practitioners of education. They implemented evidence-based practices with students in a scholarly way, observing the impact of these, reflecting, evaluating, and identifying further adjustments for their educational practice. The authors also used TILT as a gateway to exploring large-scale, global challenges facing scholars of teaching and learning. The International Society for the Scholarship of Teaching and Learning recently engaged in a five-year investigation that identified five "grand challenges" for scholarship of teaching and learning (Scharff et al. 2023). Authors in this volume consider how to address aspects of the grand challenges that manifested in their specific contexts. The structure of the book mirrors those challenges: 1) how to develop critical and creative thinkers, 2) how to encourage students to be engaged in learning, 3) the complex processes of learning, 4) how identities affect teaching and learning, 5) the practice, use, and growth of the scholarship of teaching and learning (SoTL).

This book has value not only for teachers and academic developers, but also for a broader audience of stakeholders for whom education matters. Students will benefit from understanding the gains that come from applying the TILT framework to their learning experiences. Students' families, as well as legislators, funders, leaders, and administrators can appreciate that the labor-intensive work of educating effectively requires much: educators' awareness of evidence-based practices, their wisdom in selecting and applying the ones best suited for specific student learning goals, their respect for students' feedback about learning, and

their continuous observation, assessment, and adjustment to achieve the best possible results for students.

I am grateful to the authors for developing and refining with their students these examples of how they apply TILT to improve students' learning experiences. I also thank the editors for compiling and structuring this volume so that readers can find their most relevant examples efficiently and move directly to implementation. I know I join many readers who appreciate the open access that Elon University's Center for Engaged Learning provides to all the wisdom offered in this book.

References

Calkins, Celeste, and Mary-Ann Winkelmes. 2018. A Teaching Method that Boosts UNLV Student Retention. University of Nevada Las Vegas Best Teaching Practices Expo. 3. Las Vegas, NV: UNLV Best Teaching Practices Expo. https://digitalscholarship.unlv.edu/btp_expo/3.

Gianoutsos, Dan, and Mary-Ann Winkelmes. 2016. Navigating with Transparency: Enhancing Underserved Student Success through Transparent Learning and Teaching in the Classroom and Beyond. Proceedings of the Pennsylvania Association of Developmental Educators.

Scharff, Lauren, Holly Capocchiano, Nancy Chick, Michelle Eady, Jen Friberg, Diana Gregory, Kara Loy, and Trent Maurer. 2023. "History of the Grand Challenges for SoTL." *International Society for the Scholarship of Teaching and Learning*. https://issotl.com/grand-challenges-for-sotl/gc-history/.

Winkelmes, Mary-Ann, Matthew Bernacki, Jeffrey Butler, Michelle Zochowski, Jennifer Golanics, and Kati Harriss Weavil. 2016. "A Teaching Intervention that Increases Underserved College Students' Success." *Peer Review* 18 (1/2): 31-36.

Winkelmes, Mary-Ann, Allison Boye, and Suzanne Tapp, eds. 2019; 2023. *Transparent Design in Higher Education Teaching and Leadership: A Guide to Implementing the Transparency Framework Institution-wide to Improve Learning and Teaching*. Stylus 2019; Routledge 2023. https://doi.org/10.4324/9781003448396.

INTRODUCTION

> "How will we ensure that our students—all of them, without exception—are educated using evidence-informed pedagogies in intentionally inclusive and empathy-based environments?" (Boyer Commission 2022, 3)

Picture it. It is late October on your college campus. The air may be cooler and leaves may be changing. Students are scurrying across the street in their hoodies and earbuds. If you were to close your eyes you would hear the sounds of the middle of the semester on campus; a combination of bicycles whirring by, cars passing, snippets of conversations as groups pass. You are on your way to a workshop offered by your campus teaching center. Once you arrive, you tune into the conversations among other attendees around you as you wait for the session to start. Some are discussing a challenge they had in class just before the session. Others are talking about exciting examples of student work they've been grading this week. There is a buzz of excitement and interest as ideas are shared. You wish you could capture all of the great ideas so that you can try some out in your own classes.

In this book we are trying to simulate this experience for the reader; the organic conversations that occur when groups of instructors, who are passionate about teaching, gather in a room and begin informally discussing their courses, challenges, and favorite assignments. The sharing and collegiality that builds teaching networks is invaluable, but also fluid and often undocumented; rendering invisible the work that those who teach in postsecondary education do. As academic developers who center our work on supporting our fellow academics in enhancing their teaching and learning, we are often privy to these conversations on a broad scale.

While listening to instructors share what works and what fails, we are able to identify the underlying pedagogical basis for these experiences and can then connect the instructor to the literature, resources, or other colleagues even, to help them improve, change, develop, and document their experiences.

In attempting to asynchronously capture these types of discussions, we have curated example assignments shared by postsecondary instructors into a structure that allows readers to access and engage with the heart of this experience. With each assignment, readers will also gain insight into the course context in which the assignment is deployed, learn how the assignment is grounded in pedagogical literature, find a critical reflection from the instructor on the experience of implementing the assignment, and a transparent assignment sheet that can be adopted or adapted for your own context. It is our hope that you, the reader, will not only find potential strategies to (re)invigorate your courses, but also gain a better understanding of the pedagogical literature and begin to think more creatively about the activities and assignments you design for your students.

The TILTed Pedagogy Framework

Research shows that students learn more and are more successful when evidence-based pedagogical techniques are used within an inclusive learning environment (Boyer Commission 2022). One strategy to increase inclusivity in the learning environment is to make it more transparent. The Transparency in Learning and Teaching (TILT) framework provides instructors with a three-part framework (purpose-task-criteria) for creating assignments (Winkelmes, Boye, and Tapp 2019). Before exploring this framework as a focus for this book, we want to provide our working description of each of the critical components in TILT.

The first part of the TILT framework is **purpose**. We often spend a great deal of time intentionally designing learning activities and assessments for our students, but rarely share our rationale with them explicitly. This may lead to students viewing tasks as busy work or

one of many unconnected requirements used to accumulate points for a grade rather than as an intentional experience designed to maximize their learning and understanding within a course. In the TILT framework, the instructor explains the purpose of the assignment or activity in language that is easily understood by learners. In articulating the purpose, Mary Ann Winkelmes (2019) asks us "What skills will students practice by doing this work, what knowledge will they gain from doing it, and how do those skills and knowledge offer long-term benefits for the students in real world contexts beyond the assigned work" (19)?

The second part of the TILT framework is **task**. In this section, instructors should clarify what students are expected to do in the assignment or activity and how they are expected to do it. Some instructors may view this as too prescriptive, but clarifying the task allows all students to start the assignment with the same level of understanding. It removes barriers resulting from aspects of the hidden curriculum (e.g., unspoken perspectives, lessons, biases) and makes explicit to all learners the implicit framework held in your expert mind.

The third part of the framework is **criteria**. In this section, the instructor makes explicit the criteria and characteristics of a successfully completed assignment. In addition to listing these criteria on the assignment sheet, instructors should provide students multiple examples of completed work and guide them through identifying each of the criteria or characteristics on the assignment sheet within the example work.

Extensive research on the implementation of the TILT framework has shown including one or two TILTed assignments in a course results in a demonstrable increase in "several important predictors of college student success: academic confidence, sense of belonging in college, metacognitive self-awareness of skill development, and persistence (Winkelmes et al., 2016; Winkelmes, Calkins, and Yu, forthcoming). Importantly, those gains are enduring and equitable, and although they are statistically significant for all students we've studied, [historically] underserved students experience the greatest benefits" (Winkelmes, Boye, and Tapp 2019, 1). These historically underserved students (i.e., African American, Hispanic, Native American, Pacific Islander, first-generation, and low-income students) represent the growing majority of current undergraduate students (Davidson and Katapodis 2022), necessitating the need for more examples of high quality, inclusive, evidence-based learning activities. Therefore, we have chosen the TILT framework as a way to anchor the variety of assignments and activities included in this book.

That said, we recognize that it might be difficult for some instructors to adapt what they do to the TILT framework or might such change to be challenging. To those folks, we would say that while the TILT framework will be used to scaffold and anchor the examples featured in this book, the true focus of this work is to show how scholarly approaches to teaching can be made transparent. Any changes an instructor makes to help students better understand why they are doing an assignment, how to do an assignment, or how they will be assessed is a good change and we hope that these chapters can serve as inspiration for that purpose.

Scholarly Teaching

While TILT serves as the common framework for presenting the assignments included in the subsequent chapters, the evidence-based practice exemplified varies. Use of an evidence-based practice is known as scholarly teaching. Potter and Kustra (2011) provide us with a more formal definition of scholarly teaching and argue that any teaching activity meeting all three conditions within the definition is considered scholarly teaching: "teaching grounded in critical reflection using systematically and strategically gathered evidence, related and explained by well-reasoned theory and philosophical understanding, with the goal of maximizing learning through effective teaching" (3).

In practice, scholarly teachers begin by identifying a challenge in one of their courses. They then consult the literature on the challenge and choose an approach to address their challenge. After implementing the approach, they determine whether the modification was successful or not, continuing this cycle until an effective solution to their challenge is found (Gurung 2012; Richlin 2001). By reading this book, you are engaging in the scholarly teaching process now!

If you were to take it one step further and conduct systematic inquiry into your own pedagogical practices and students' learning in order to contribute to a public body of information about teaching and learning, you would be part of the scholarship of teaching and learning (SoTL) community. However, not everyone has the desire or support to conduct their own research in this way (Vander Kloet et al. 2017). Scholarly teaching encourages instructors to apply the SoTL findings of others to improve their own pedagogical practices and students' learning (Richlin and Cox 2004).

Why This Book?

While we wrote this book primarily for instructors to utilize in their own classes, there are many ways to engage with the book beyond that purpose. We hope that the utility of this book extends its reach beyond the boundaries of course design and assessment planning. For example, individual chapters may be used as case studies in faculty development programming or examples for curriculum committees and groups of instructors designing multi-section courses. Faculty who teach pedagogy courses for graduate students could use the book in similar ways. As you engage in each of the chapters and the examples of TILT therein, we ask you to consider from your perspective what this might look like in your own teaching and learning practice, as well as what implementing this framework might yield for you and your students in their learning experiences.

Instructors of postsecondary education, ironically, are expected to utilize evidence-based pedagogies in their courses (Boyer Commission 2022; Indiana University 2023; University of Iowa 2022), but are largely responsible for seeking out training options on their own. Campus teaching center programming, blogs, podcasts, conferences, webinars, and books may serve as support for faculty in their quest for professional development. Engaging in any of these formats requires an investment of time and/or financial resources.

While, increasingly, institutions of higher education in the US are relying on contingent instructor lines over tenure-track lines. This

includes full and part-time contractual instructors, adjunct instructors, and graduate student instructors. Female faculty and faculty of color disproportionately make up the contingent workforce. These lines lack the academic freedom and economic security of tenure-track positions, making it less likely for many to try new pedagogical approaches in their classrooms (Colby 2023; Vander Kloet et al. 2017). As one faculty member stated to the first editor when discussing trying a new approach in the classroom "I'm not willing to bet my job on it" working.

While not explicitly targeting students, the book may also be useful for students who are serving co-partner roles. Allowing students to gain insight into a variety of processes used in creating learning environments will allow them to become more informed partners as undergraduate teaching assistants, undergraduate teaching consultants, or curriculum design partners.

While an increasing number of graduate students complete a pedagogy course before becoming an instructor of record, the primary focus of graduate training continues to be disciplinary knowledge. This model continues to perpetuate the gap between what pedagogical research suggests and what is applied in teaching (Rifkin et al. 2023; Robinson et al. 2022). When evidence-based pedagogy is utilized, it is not made available to all students equitably (Boyer Commission 2022).

For us, a high-quality, open access resource is critical to increasing the implementation of evidence-based pedagogy in more classrooms. So it is with this in view that we have written this book for a diverse audience of postsecondary education instructors including (but not limited to) contract faculty, pre-tenure, tenure stream, teaching assistants, academic developers, administrators, or those interested in implementing professional development programming on evidence-based pedagogy or the TILT framework. We hope our readers, regardless of institutional role and geography, will find this book useful.

Book Organization & Chapter Structure

We have organized this volume by grouping chapters into sections to align with the grand challenges for SoTL (Scharff et al. 2023). Inspired

by the grand challenges in engineering, the SoTL grand challenges address "complex, global problems that have no simple solution across all contexts and that require inputs from diverse areas of expertise to provide solutions for given contexts at specific points in time" (para. 3). Difficulty in addressing these challenges is increased by the diversity of learners and teachers, contextual factors, and the gaps in the existing research that addresses these challenges.

The five grand challenges for SoTL are:

1. how to develop critical and creative thinkers;
2. how to encourage students to be engaged in learning;
3. the complex processes of learning;
4. how identities affect both teaching and learning; and
5. the practice, use, and growth of SoTL.

Readers will notice that while there are five grand challenges for SoTL, there are only four sections in the book. That is because this book in its entirety addresses the fifth challenge. Each section begins with an overview of the associated grand challenge and synthesis of the content within the individual chapters. Each chapter will follow a template that includes the following six sections:

- **Description of the Teaching/Learning Context**: This section will provide a brief but rich description of the teaching/learning context, informing readers of the focus of the class, level of students in the class (i.e., advanced undergraduates, doctoral students), and the reason a TILTed approach to teaching was a fit for this context.
- **Research/Evidence That Informs This Approach**: This section will provide an overview of the research/evidence that exists to support the use of the chosen pedagogical approach. For instance, if a chapter was being written about specifications grading, the research that would be cited here would provide a description of what specifications grading is, how it's been used in various contexts, and the effectiveness of this approach in supporting students' learning.
- **Application of Research to Develop This Assignment:** This section of the chapter will explore how the author applied the research described in the prior section to their own teaching context.
- **TILTed Assignment:** This section outlines instructions shared with students.
- **Critical Reflection of the TILTed Assignment:** This section articulates the author's reflection on how the assignment was used and whether it was successful (by whatever metric makes sense for the context). This section might also include assignment adaptations, what the author would do differently in the future, or any other information that would be useful for readers to have a fulsome understanding of how thinking about the assignment has evolved over time.
- **Modifying, Adapting, or Applying This Assignment for Other Contexts:** This section addresses the need to make the assignment useful beyond the example learning context. How might a similar experience be applied in a lab-based course, a large-enrollment course, or in other spaces in higher education? How might instructors in other disciplines adapt the assignment to fit their needs?

While you can read this book in its entirety, we encourage readers to make use of the organizational pathways to best suit their current needs. In addition to the overarching organizational structure provided by sectioning the book according to the SoTL grand challenges and the chapter level organization structure outlined above, we provide two additional navigation tools: **What** and **Where**.

Navigation Tools

What refers to the pedagogical approach found within the chapter. This tag focuses on what the student is doing within the assignment and thus, is the most varied across chapters. For example, chapters in section 1 all provide assignments to developing critical and creative thinkers. The what in this section include examples of reviews and reflections, close reading, and writing mathematical proofs.

Where indicates the discipline in which the assignment is utilized. While we encourage you to explore disciplines other than your own, we recognize some readers may want to start in familiar territory. In an attempt to provide enough detail for readers to navigate chapters without providing too much detail to be unhelpful, we have utilized broad disciplinary categories rather than specific disciplinary labels (i.e., Arts & Humanities rather than Theater).

Conclusion

We began this introduction with our vision for readers, that they might use this content to simulate the organic conversations and invaluable sharing that occur among passionate instructors in a teaching center workshop, documenting what is often fluid and undocumented work in our teaching and learning contexts. Beyond this, the core spirit of this work is to make scholarly approaches to teaching transparent and to increase the implementation of evidence-based pedagogy in our college and university learning spaces. Utilizing the TILT framework, we offer cross-disciplinary exemplars of a structured approach to designing assignments that have been shown to demonstrably increase academic confidence, sense of belonging, metacognitive self-awareness, and persistence in students, with historically underserved students experiencing the greatest benefits. Ultimately, this resource serves a diverse audience of postsecondary instructors, from contract faculty to academic developers, providing practical strategies organized around the grand challenges for SoTL to help invigorate courses, foster creative assignment design, and support effective, equitable learning experiences for all students.

References

Boyer Commission. 2022. The Equity/Excellence Imperative: A 2030 Blueprint for Undergraduate Education at U.S. Research Universities. *Association for Undergraduate Education at Research Universities*. https://ueru.org/boyer2030

Colby, Genevieve. 2023. "Data Snapshot: Tenure and Contingency in US Higher Education." *American Association of University Professors*. https://www.aaup.org/article/data-snapshot-tenure-and-contingency-us-higher-education.

Davidson, Cathy N., and Christina Katapodis. 2022. *The New College Classroom*. Harvard University Press.

Gurung, Regan A. R. 2012. "Consuming Scholarship of Teaching and Learning: Using Evidence-Based Pedagogy Ethically." In *Teaching Ethically: Challenges and Opportunities, edited by R. E. Landrum and M. A. McCarthy*, 67–76. American Psychological Association.

Indiana University. 2023. "IUB 2030 Strategic Plan: Student Success and Opportunity." https://iub2030.indiana.edu/plan/student-success/index.html.

Potter, Michael K., and Erika D. H. Kustra. 2011. "The Relationship between Scholarly Teaching and SoTL: Models, Distinctions, and Clarifications." *International Journal for the Scholarship of Teaching and Learning* 5 (1). https://doi.org/10.20429/ijsotl.2011.050123.

Richlin, L. 2001. "Scholarly Teaching and the Scholarship of Teaching." *New Directions for Teaching and Learning* 2001 (86): 57–68. https://doi.org/10.1002/tl.16

Richlin, L. and Cox, M.D. 2004. "Developing Scholarly Teaching and the Scholarship of Teaching and Learning Through Faculty Learning Communities." *New Directions for Teaching and Learning* 2004 (97): 127–135. https://doi.org/10.1002/tl.139

Rifkin, Benjamin, Rebecca S. Natow, Nicholas P. Salter, and Shayla Shorter. 2023. "Why Doctoral Programs Should Require Courses on Pedagogy." *Chronicle of Higher Education*, June 27, 2023. https://www.chronicle.com/article/why-doctoral-programs-should-require-courses-on-pedagogy.

Robinson, Jennifer M., Valerie D. O'Loughlin, Katherine Kearns, and Laura Plummer. 2022. *Teaching as If Learning Matters: Pedagogies of Becoming by Next-Generation Faculty*. Indiana University Press.

Scharff, Lauren, Holly Capocchiano, Nancy Chick, Michelle Eady, Jennifer Friberg, Diana Gregory, Kara Loy, and Trent Maurer. 2023. "Grand Challenges for SoTL." *International Society for the Scholarship of Teaching and Learning*. https://issotl.com/grand-challenges-for-sotl/

Smith, Robert A. 2012. "Benefits of Using SoTL in Picking and Choosing Pedagogy." In *Evidence-Based Teaching for Higher Education*, edited by Beth M. Schwartz and Regan A. R. Gurung, 7–22. Jossey-Bass.

University of Iowa. 2022. University of Iowa Strategic Plan: Excellence in Teaching and Learning. https://strategicplan.uiowa.edu/etl-priorities-and-objectives.

Vander Kloet, Marie, Mandy Frake-Mistak, Michelle K. McGinn, Marion Caldecott, Erin D. Aspenlieder, Jacqueline L. Beres, Sherry Fukuzawa, Alice Cassidy, and Apryl Gill. 2017. "Conditions for Contingent Instructors Engaged in the Scholarship of Teaching and Learning." *The Canadian Journal for the Scholarship of Teaching and Learning* 8 (2). https://doi.org/10.5206/cjsotl-rcacea.2017.2.9

Winkelmes, Mary-Ann, Matthew Bernacki, Jeffrey Butler, Michelle Zochowski, Jennifer Golanics, and Kati Harriss Weavil. 2016. "A Teaching Intervention that Increases Underserved College Students' Success." *Peer Review* 18 (1/2): 31–36.

Winkelmes, Mary-Ann, Alison Boye, and Sarah Tapp. 2019. *Transparent Design in Higher Education Teaching and Leadership: A Guide to Implementing the Transparency Framework Institution-Wide to Improve Learning and Retention*. Stylus Publishing.

SECTION 1

Developing Critical and Creative Thinkers

This section portrays how the assessment strategies shared through each of the TILTed pedagogy chapters herein, address the first SoTL grand challenge: developing critical and creative thinkers. Identified as a grand challenge due to the complex difficulty in teaching, these skills require ongoing practice and feedback, student self-reflection, and the creation of learning environments that foster risk-taking in multiple courses across the curriculum. This challenge is significant because it aims to equip students with the skills necessary to tackle the complex, interconnected problems of the twenty-first century, often referred to as "wicked problems." Critical thinking involves the ability to analyze and evaluate information to make informed decisions, while creative thinking focuses on generating new ideas and innovative solutions. These complementary skills are essential for students to navigate and address multifaceted issues effectively. By integrating these skills into their habits of mind, students can better understand and respond to the complexities of modern life.

Chapters in this section highlight how instructors have developed and redesigned their assessment strategies and practices from a student-centered perspective, prioritizing the learning process and overall student experience. Chapter 1 focuses on a production review assignment in an introduction to theatre course, integrating TILT principles, authentic assessment, and Universal Design for Learning (UDL) to enhance student engagement. The assignment allows students to review theatrical productions in various modalities, demonstrating mastery of course and university-level learning outcomes.

Chapter 2 explores the implementation of a medieval manuscript investigation assignment, designed to enhance critical thinking and analytical skills in first-year composition and comparative literature courses. Leveraging UDL principles and the concept of "slow looking," students engage in the analysis of medieval manuscript pages, practicing making evidence-based claims in a low-stakes environment. This approach fosters student engagement and confidence through frameworks like UDL, question formulation technique, and visual thinking strategies.Chapter 3 shares a two-part assignment in an introduction to popular culture course, giving students choice and autonomy in assessment. The assignment includes both an original creative work and a piece of reflective writing, encouraging students to think holistically about their work. Based in UDL, creative assignments, and reflection literature, this approach aims to elicit interest among students fulfilling general education requirements.

Finally, chapter 4 presents a two-pass assignment strategy in a mathematics course, supporting first-year university students in transitioning from computational problem-solving to rigorous logical reasoning. Integrating TILT principles and specifications grading, the two-pass assignments involve initial submission, detailed formative feedback, and resubmission for final evaluation. This strategy promotes reflection and improvement, reducing student anxiety and fostering deep learning.

Through these creative approaches to assessment of student learning, these chapters demonstrate instructors' commitment and dedication to improving the complex processes of learning. Unlike more traditional forms of assessing student work, the content in this section highlights the ways through which students may demonstrate their learning through meaningful work products. In doing so, these chapters reflect the exploration into teaching and learning in a postsecondary education context for the purpose of both understanding and improving critical and creative thinking.

CHAPTER 1

Applying the TILT Framework in an Introduction to Theatre Course

Teresa Focarile, *Boise State University*

Navigation Tools

What: Synthesis, Reflection & Metacognition
Where: Arts & Humanities

This chapter will focus on a production review assignment aimed at helping students analyze and interpret theatrical productions as part of a theatre course fulfilling a general education requirement. The revised production review assignment integrates TILT principles, authentic assessment, and Universal Design for Learning (UDL) to enhance engagement among students. The assignment asks students to review a theatrical production to demonstrate mastery of course and university level learning outcomes but provides choice in assignment format. Suggestions for adaptation include applying the framework to other visual or performing arts courses or using it in disciplines like engineering or chemistry to evaluate real-world applications of course concepts.

Description of Teaching/Learning Context

Since 2011 I have taught Introduction to Theatre at Boise State University; a public, four-year institution in Boise, Idaho. The course is part of our General Education curriculum, one of seven classes that students can

choose from to meet their Foundations of Arts requirement. As such, the class is designed for students to achieve our University Learning Outcome (ULO) in the Visual and Performing Arts, "Apply knowledge and methods characteristic of visual and performing arts to explain and appreciate the significance of aesthetic products and creative activities." Supporting that ULO are my course level learning outcomes, which include that students will be able to analyze and interpret the main ideas of theatrical productions.

Generally, the students in this class are in their first or second year of college. They may have interest in the topic or enroll simply because it best fits their schedule. Therefore, I usually have students with a wide range of theatrical experience—everything from students who worked on all of their high school theatre productions, to students who have never even been inside a theatre. The amount of prior knowledge about theatre that students bring with them is just one way in which they are diverse. While Boise State students are predominantly white (72 percent), we do have a growing population of Latinx students (14 percent), and other ethnicities (14 percent) ("Facts and Figures," n.d.). It is likely that about a third of my class could be first-generation college students, as on average 30 percent of our incoming freshmen identify as such (Boise State 2023). Many of my students work while going to school, so it's not surprising to me that the 2018 National Survey for Student Engagement found that 57 percent of the Boise State students who responded were working on or off campus while in school (National Survey of Student Engagement 2018).

While my students represent a variety of experiences, it's important to me that they all succeed. Over the years teaching this course, I struggled to clarify how one of the summative assessments, the Production Review, allowed students to demonstrate their learning. I have used various versions of this assessment since I began teaching the course, as it is a common assignment among the other theatre faculty. It asks students to watch a theatrical performance, interpret the show's theme, and explain how the production choices supported, or failed to support, that theme. I found this assignment challenging to grade for a number

of reasons, including feeling like I was obligated to grade grammar, inconsistencies in the ways in which students used course vocabulary, and the different degrees to which students provided analysis of the production's artistic choices.

Given those challenges, I decided to revise the assignment for the fall 2022 semester. Using my knowledge of pedagogical practices, I incorporated elements of three teaching strategies to inform this work: the TILT framework, Authentic Assessment, and Universal Design for Learning (UDL). The TILT framework interested me because of the students in my class; the research on TILT shows that first-generation students and others from potentially marginalized populations succeed and are retained at higher rates when the TILT framework is used (Winkelmes 2023). In addition, because my students don't necessarily start the semester with an interest in theatre, Authentic Assessment and Universal Design for Learning provided guidance for how to be clearer about the relevance of the assignment and give students more options for how to complete it.

Research/Evidence That Informs This Approach

Once I learned about TILT, applying the framework to this assignment seemed like an obvious thing to do, given how TILT has been shown to support success and retention among first-generation and underrepresented students. In particular, the finding that as few as two transparently-written assignments in a course had a positive impact on student success and retention led me to decide that this change was worth the effort (Winkelmes 2023).

One important component of a transparent assignment is the **purpose**, which includes the skills and knowledge that students will practice and/or gain by doing the assignment. In particular, the TILT framework encourages educators to talk with students about how those skills and knowledge relate to their own lives (Winkelmes 2017, "Transparency Framework 1: Purpose"). Making this connection for my students is important, given that they are all non-majors, and, as mentioned, may have little experience with theatre. To help me better articulate the purpose of the Production Review, I incorporated the concept of Authentic Assessment, defined by

Jon Mueller as "a form of assessment in which students are asked to perform real-world tasks that demonstrate meaningful application of essential knowledge and skills" (Mueller, n.d.). Authentic Assessment is supported by constructivist learning theories, and research has shown that it has the potential to improve student metacognition (Wu, Heng, and Wang 2015) and autonomy (Raymond et al. 2013), which are important skills to foster in a general education course.

Finally, knowing that my students come from a variety of backgrounds, and have a variety of responsibilities outside of school, I also drew on the principles of Universal Design for Learning (UDL) in my assignment re-design. With its focus on giving students multiple means of engagement, representation, and expression, learning about UDL (CAST, n.d.) made me realize that my past practice of requiring students to see the Boise State Department of Theatre, Film and Creative Writing productions may not have been as equitable as I had thought. While those tickets are free for students, they do not always have a schedule flexible enough to attend the performances, nor interest in seeing a particular play. UDL opened my eyes to ways that I could make this assignment more accessible for my students.

Application of Research to Develop This Assignment

My first step in applying the research to my revision process was to break down the assignment into the three TILT categories: purpose, task, and criteria. Applying ideas from authentic assessment, I crafted a purpose statement that made the relevancy of the assignment clear for students: they are to direct their review to an audience of their peers and should specifically address why the play's theme may or may not be relevant to their fellow students. I then clearly listed the learning outcomes that align with the Production Review: the required ULO, as well as these two course learning outcomes: (1) Use knowledge of theatrical components and practices to analyze a theatrical production from a subjective point of view, and (2) interpret main ideas of theatrical productions and plays.

Articulating the learning outcomes with which this assignment aligned helped me to identify the relevant tasks and criteria and remove those that did not serve these outcomes. In the task section, I listed the specific questions the students should address and provided examples of how I wanted them to answer. For example, I provided the following guidance for their explanation of the play's theme:

If you say… 'this is a story about greed' you are introducing a topic, which is only the beginning of interpretation. What about greed is the audience supposed to leave the theatre thinking about?

I incorporated the principles of UDL into the task section, in two ways. First, I gave students options for how to submit their review: "in writing (like a newspaper review), in a video (like a TikTok video), or via audio (like a podcast/radio broadcast)." This change not only provided students with multiple means of engaging with the assignment, it also made it more authentic, in that these are the forms in which they are more likely to apply what they learned in the "real world." The second change inspired by UDL was to allow students to see any show they are interested in, anywhere—including watching one online.

Finally, the grading criteria is now more detailed. In earlier versions, the grading rubric simply asked students to demonstrate an understanding of class concepts in specific areas, including acting, set design, costume design, etc. The only criteria was to appropriately use at least two vocabulary terms/class concepts when describing the theatrical choices. Each description of a design area was graded on a 10-point scale, with "Good" worth 8–10 points, "Developing" 4–7 points, and "Unsatisfactory" 0–3 points. No information was provided about how points within a grading level were awarded. In the updated version, the criteria is much clearer (for example, the acting criteria is "Two reasons you liked/didn't like the actors' performances, using vocabulary/ideas from class") and the grading scale is narrowly focused on three levels of achievement: present, not fully present, or not present.

One additional and important change to the rubric is that in the previous version, the number of points awarded for the quality of writing (sentence structure, correct grammar and spelling, etc.) was 10 points—nearly 17 percent of the grade. In the updated version, grammar is not an official criterion for grading. I advise students simply that there will be a 3-point penalty for major formatting errors or noticeable issues with writing/speaking mechanics. So far, I have not had students submit anything that required me to take off these points.

TILTed Assignment

Below are the details of the assignment.

Purpose

In this assignment you will demonstrate your achievement of these course learning outcomes: (1) Apply knowledge of theatrical components and practices to analyze a theatrical production from a subjective point of view, and (2) interpret main ideas of theatrical productions and plays. You will also demonstrate your development towards the following University Learning Outcome: Accurately recognize and understand visual and/or performance elements and principles within a given context.

Task

Your goal is to share your interpretation of the play's message ("theme") and how the production choices supported or failed to support that idea. Your review of the production can be done in writing (like a newspaper review), in a video (like a TikTok video) or via audio (like a podcast/radio broadcast). Regardless of the format, below are the steps you should take to complete this assignment:

- Attend/watch a theatrical production of a play. You can choose to see a live production (including the Boise State theatre department production, which students can attend for free), or watch one of the recordings that are posted on our Canvas course site.
- Take notes on, and share in your review, the following general information: 1) Title of the play and playwright; 2)Theatre company that produced the play; 3) Name of the director; and 4) a 3–5 sentence summary of the plot that includes the given

circumstances and the major conflict(s). Don't give away the end, though!

- Interpretation of the play: Based on your observations of the production, and what you have learned in class, what do you think is the theme of the play? One of the best ways to determine this is to answer a why question. Why did the characters act the way they did? If you say that "the characters were greedy," or "this is a story about greed" you are introducing a topic, which is only the beginning of interpretation. What about greed is the audience supposed to leave the theatre thinking about?
- Describe in detail at least two elements of the stage design (set, costume, lighting, sound) and how they supported the theme, using vocabulary/ideas from class.
- Acting: Give two reasons you liked/didn't like the actors' performances, using vocabulary/ideas from class. Be sure to name any actors you highlight.
- Recommendations: 1) One reason you would/would not recommend this show to a fellow student. 2) One reason why this play is/is not relevant to a [*university*] audience.

Criteria

This assignment is worth 20 points and will be graded using the following rubric:

Table 1.1. Assignment Criteria

Criteria	**Present (2)**	**Not Fully Present (1)**	**Not Present (0)**
Title of the play and playwright			
Theatre company that produced the play			
Name of the director			

3–5 sentence summary of the plot that includes the given circumstances and the major conflict(s)			
Clear and specific theme identified			
Clear and detailed description of how two elements of the stage design (set, costume, lighting, sound) supported the theme (points for each element)			
Two reasons you liked/didn't like the actors' performances, using vocabulary/ideas from class (points for each reason)			
Name of any actors highlighted in the review			
1 reason you would/would not recommend this show			
1 reason why this show is/is not relevant to a Boise State audience			
3-point penalty for major formatting errors or noticeable issues with writing/speaking mechanics.			

Consider the following tips for success:

- Viewing and collecting information: Experience the production first. Don't struggle with the review in your head while watching the show; enjoy the story and the storytelling. If you are watching a theatre production via video, stop the video to take

notes on the sets, costumes, and acting; If you are watching a live production, use any breaks between scenes and the intermission to jot down notes to yourself.
- Analyzing and interpreting: To develop a theme, start looking for patterns in your thinking. Once you have a theme statement, really look at it. Are you generalizing?
- Fine-tuning: Look critically at your work to see if it's clear how the production areas you focus on support the theme. Excellent work is not done on the first try.

Critical Reflection of the TILTed Assignment

From my perspective as an educator, the changes to this assignment have had important benefits. For one, giving students choice in both the production they review and the format in which they do it produces variety in the deliverables, making grading more interesting than reading about the same production multiple times. Using the TILT framework has also required me to clarify my expectations for myself and my students. This change made grading easier because, since my students know what I am asking them to do, the work they are submitting is aligned with my expectations, and importantly, the course learning outcomes. Now that students, and I, are clear on how this assignment connects to their learning, what they submit gives me a clear picture of whether they can "use knowledge of theatrical components and practices to analyze a theatrical production from a subjective point of view" and "interpret main ideas of theatrical productions and plays."

My students have also noted that this assignment offers them choice in which aspects of their learning they highlight. For example, one student shared in their end of semester reflection that "the production review assignment allowed me to apply [my] knowledge from class." They also appreciate the clear steps outlined in the task section, as noted by a student who commented that one of the aspects of the course that was most valuable to their overall learning experience was "that the professor always communicated clear expectations."

While the initial run of this assignment was a success, there are tweaks I am making as I prepare to teach this class again. Now that I have sample student assignments to draw from, I can provide current students with examples of past reviews that met the criteria. This addition will allow me to address a key component of the TILT framework: that students can "see examples of what work looks like when they meet" the assignment criteria (Winkelmes 2017, "Transparency Framework 3: Criteria").

In writing this chapter, I also identified that the purpose statement could be strengthened by adding some additional information about why the kind of learning this assessment measures is important and relevant for students. For the fall 2023 semester, the purpose section included the following:

> In addition to providing you with an opportunity to demonstrate what you have learned in this class, this assignment gives you a chance to practice using your new (or improved) skills of evaluating theatrical choices. While you might not become a season subscriber to your local theatre in the future, chances are you will see a play and have a chance to talk about it with friends, colleagues, and/or family—and when you do, you'll be ready to tell them what you think!

The changes I made to this assignment not only better aligned it with my learning outcomes, but it made my grading easier, and the student experience better. Now I can focus on how students are applying what they learn, which is the real fun of teaching. In fact, one of the great joys of teaching this class is introducing those students who have never been to the theatre to the power of this art form and giving them the tools to form their own opinions about a performance.

Modifying, Adapting, or Applying This Assignment for Other Contexts

Though this assignment is specifically designed to be a review of a theatrical production, the framework could be used in any kind of visual or performing arts course (music, painting, design, dance, etc.), as it asks students for direct observation of the form they are studying, rather than a subjective discussion of whether a piece of art was "good" or "bad." For example, instead of asking students to describe in detail at least two elements of the stage design and how they supported the theme, using vocabulary/ideas from class, an Art History professor could ask their students to give an example of how a certain painting reflects the style of that era.

Beyond the arts, this assignment could be modified for use in any situation in which students apply knowledge or skills learned to evaluate an observed application of those ideas. For example, a civil engineering student could be asked to identify a bridge or road near their home and analyze its construction using course vocabulary. In a chemistry course, students could choose a household cleaning product and use class concepts to discuss how it works. Beyond the topic, this assignment could be modified for use in a class of any size. The course I teach historically had a cap of eighty students, and the 3three-point analytical rubric is much faster than determining where in a ten-point range each element of the assignment falls, making this kind of assignment a good option for educators who are looking for an alternative to multiple-choice tests as an assessment in their large-enrollment classes.

References

Boise State University. Office of Institutional Effectiveness. 2021. "What Does NSSE Tell Us About How Much Time Boise State Students Spend on Work and Other Responsibilities (2018 Results)?" *Boise State University*. https://www.boisestate.edu/wp-content/uploads/sites/501/2021/10/What-Does-NSSE-Tell-Us-About-How-Our-Students-Spend-Time-rev-Oct-2021-PDF.pdf

Boise State University. Office of Institutional Effectiveness. 2023. "Student Enrollment Summary—Census Day." Boise State University. https://www.boisestate.edu/ie/data-and-reporting/university-enrollment-reports/

Boise State University. n.d. "Facts and Figures." Accessed June 29, 2024. https://www.boisestate.edu/about/facts/

CAST. n.d. "Universal Design for Learning Guidelines Version 2.2." Accessed June 29, 2024. https://udlguidelines.cast.org/

Mueller, Jon. n.d. "What Is Authentic Assessment?" Authentic Assessment Toolbox. Accessed June 29, 2024. https://jonfmueller.com/toolbox/whatisit.htm

National Survey of Student Engagement. 2018. "NSSE 2018 Frequencies and Statistical Comparisons: Boise State University." Boise State University. https://www.boisestate.edu/ie/wp-content/uploads/sites/501/2023/03/NSSE18-Frequencies-and-Statistical-Comparisons-Boise-State.pdf

Raymond, Jane E., Caroline S. E. Homer, Rachel Smith, and Joanne E. Gray. 2013. "Learning through Authentic Assessment: An Evaluation of a New Development in the Undergraduate Midwifery Curriculum." *Nurse Education in Practice* 13 (5): 471–76. https://doi.org/10.1016/j.nepr.2012.10.006.

Winkelmes, Mary-Ann. 2017. "Transparency Framework 1: Purpose." YouTube video. https://www.youtube.com/watch?v=PxndXE5_qMc

Winkelmes, Mary-Ann. 2017. "Transparency Framework 3: Criteria." YouTube video. https://www.youtube.com/watch?v=DXjR9qbvzF8

Winkelmes, Mary-Ann. 2023. "Introduction to Transparency in Learning and Teaching." *Perspectives in Learning* 20 (1): 4–12.

Wu, Xi Vivien, Mary Anne Heng, and Wenru Wang. 2015. "Nursing Students' Experiences with the Use of Authentic Assessment Rubric and Case Approach in the Clinical Laboratories." *Nurse Education Today* 35 (4): 549–55. https://doi.org/10.1016/j.nedt.2014.12.009

CHAPTER 2

Investigating the Unfamiliar

Medieval Manuscripts as Guides to Evidence-Based Claims

Sarah Pedzinski, *Indiana University Bloomington*
Madeline Keyser, *Indiana University Bloomington*

Navigation Tools

What: Analytical & Interpretive Work
Where: Arts & Humanities

This chapter explores an innovative assignment designed to enhance critical thinking and analytical skills in first-year composition and introductory general education courses. The "Medieval Manuscript Investigations" assignment leverages Universal Design for Learning (UDL) principles and the concept of "slow looking" (Tishman 2018) to engage students in the analysis of medieval manuscript pages. By annotating and discussing these unfamiliar texts, students practice identifying evidence, generating questions, and making evidence-based claims in a low-stakes environment. The chapter details the pedagogical frameworks supporting this approach, including UDL, Question Formulation Technique (QFT), and Visual Thinking Strategies (VTS), and provides insights into the assignment's success in fostering student engagement and confidence. Suggestions for adaptation include applying the framework to other disciplines, such as humanities, science, and math, to encourage critical observation and inquiry.

Description of Teaching/Learning Context

First-year composition courses might seem an odd venue for critical analysis of medieval manuscript leaves. Yet, these courses require a long list of interlinked and cumulative skills that scholars of medieval art, history, and literature must employ as they interact with early manuscripts. This type of analysis requires a careful understanding of context, author, and audience. Those who undertake it must identify key pieces of evidence, ask critical questions, generate thoughtful hypotheses, and articulate claims that link these components. With these skills in mind, first-year composition and foundational general education courses might be the perfect place for investigating medieval manuscripts.

Our courses, which are small gears in the large machine of our public, research-focused institution, are populated primarily with first-year students fresh from high school classrooms. Our institution is divided equally between men and women, and it is predominantly white, with just 19 percent of the 2022 freshman class coming from historically marginalized communities (Indiana University 2023). As instructors of introductory courses, our job is to educate this group of students on the processes of humanities-centered writing.

For Sarah Pedzinski, this venture manifests in detailed conversations about rhetorical audiences and a series of public-facing readings focused on topics such as race, gender, politics, and educational systems. Pedzinski's students' final essay requires them to identify a problem in their community, research it, and propose a complex solution. For Madeline Keyser, students must employ similar skills of critical thinking and analysis but apply these skills to a variety of literary texts that range from Ancient Greek tragedy to contemporary novels. Her students end the semester with an assignment that requires them to propose and develop a comparative literary analysis, finding and incorporating multiple secondary sources about each piece of literature into their own argument. While our courses use different materials and are listed in different departments (English and Comparative Literature,

respectively), both aim to instruct students on the mechanics of writing and establish strong critical thinking and analytical skills.

Many students, especially those in courses where essays are the primary means of assessment, struggle to understand writing as a process focused on building claims through specific evidence. This leads to student frustration and often counteracts the growth mindset instructors try to promote (Holmes 2001). To ease students into the process and build confidence, composition instructors often try to practice these skills in class. Using examples of material covered in class, instructors outline how different authors (both expert and novice) make effective arguments. While this strategy has proven effective, students (especially those in their first semesters of university courses) sometimes see the examples as unattainable and therefore do not engage in this crucial practice (Holmes 2001). Students in introductory-level courses also struggle to make connections between the examples they are viewing and their own writing.

In an effort to combat these common issues, Pedzinski began experimenting with ways to engage students and link critical analysis skills with future writing. As a medievalist by training, Pedzinski noticed similarities between her own academic research and the skills she was teaching. Armed with the pedagogical approaches of the Universal Design for Learning framework and Shari Tishman's (2018) concept of "slow looking," Pedzinski decided to ask her students to analyze some very unfamiliar objects: medieval manuscript pages. Pedzinski projected a medieval manuscript page and provided students with a handout of the manuscript. Students individually annotated the image, marking portions they found interesting or unusual, and made connections with prior knowledge. They then generated questions about the text based on their observations. In small groups, students created composite lists of the attributes they noticed and the questions they had. Finally, the class came together to discuss the manuscript, categorizing details, prioritizing questions, and making hypotheses about the page. The activity walked students through strategies for critical analysis, and used manuscripts to both engage students and allow them to practice fundamental

skills of analysis—identifying evidence, linking evidence with claims, and asking important questions—in a low-stakes space designed for exploration.

The activity developed further when we collaborated to introduce the activity to Keyser's introductory comparative literature class. Keyser faced many of the same challenges as Pedzinski. Keyser found that her students would jump to making a claim about a literary text but were unable to point to any textual evidence to support that claim. When they were able to identify relevant evidence, they were unable to articulate exactly how that evidence supported the argument that they were making. Through "Medieval Manuscript Investigations," as Pedzinkski called it, Keyser was able to model critical analysis and close-reading in a way that students easily translated to their later projects.

We decided to use the TILT framework in order to promote student agency throughout the activity, shifting the conversation from instructor-as-expert to instructor-as-guide. Initially, both instructors encouraged students to make thoughtful observations and ask questions, intervening to use student observations to demonstrate generating evidenced-based claims. After employing TILT, we were able to empower students to work together through the entire activity, including generating their own evidence-based claims. Since students were taking control of the activity, they were also able to make more explicit connections between analyzing medieval manuscripts and analyzing other written sources, increasing their confidence as they transferred the skills this activity developed into their own written work. We quickly realized by utilizing unusual texts, we could disrupt unproductive habits and encourage students to engage with new material critically and curiously.

Research/Evidence that Informs This Approach

Our success with "Medieval Manuscript Investigations" is due in large part to the ways we considered how particular pedagogical frameworks support the activity. The Universal Design for Learning (UDL) framework emphasizes multiple ways of engagement, representation,

and expression to develop self-actualized learners (CAST, n.d.). Built from the Universal Design (UD) framework in architecture that supports accessibility in public spaces, the UDL framework slowly transferred to primary education, centering on creating curricular and learning experiences that support the constant variability of student learners (Tobin and Behling 2018). By providing students with multiple ways to engage with materials and demonstrate their learning, instructors can create an inclusive and accessible classroom that actively engages and energizes students.

While many instructors often perceive UDL as a time-consuming process necessitated by law to accommodate differently abled individuals, the framework supports a wide range of learners. Offering transcriptions for lecture videos accommodates deaf and hard of hearing students, but it also supports students who are in noisy dorm lounges. Allowing students in an intermediate Spanish course to create a travel brochure focused on popular destinations in Spain not only provides students who struggle with reading equivalent ways to demonstrate their knowledge of vocabulary, but allows all students to demonstrate a new way of creatively engaging with course material (Tobin and Behling 2018). In their monograph, Reach Everyone, Teach Everyone: Universal Design for Learning in Higher Education (2018), Thomas Tobin and Kirsten Behling argue for a reframing of UDL as a "Plus-One Approach," where instructors can ask themselves if there is "just one more way that you can help keep learners on task, just one more way that you could give them information, just one more way that they could demonstrate their skills" (134). By considering ways to incorporate diverse ways of engagement, representation, and expression into courses, students are able to make meaningful connections; by using UDL frameworks as they design activities and assessments, instructors can provide agency to their students that helps solidify their learning.

Our activity also draws from the concept of "slow looking," a term used by Shari Tishman in her monograph Slow Looking: The Art and Practice of Learning Through Observation (2018). Tishman argues that slow looking is an act of dynamic cognition that inherently engages its

audience. Using examples from museum studies to psychology, she explains that the learned process "foregrounds the capacity to observe details, to defer interpretation, to make careful discernment, to shift between different perspectives, to be aware of subjectivity and to purposefully use a variety of observation strategies in order to move past first impressions" (6). By allowing students space to slow down and think deliberately about different objects, slow looking promotes different types of complexity: how features of an object interact, how features look from different perspectives and vantage points, and how the perceiver engages with the object. These complexities not only engage students, but promote critical thinking and analysis as well.

Recently, Tishman's work has been further linked with the Question Formulation Technique (QFT) and Visual Thinking StrategiesTM (VTS) (Beene and Thompson 2022). Professors Dan Rothstein and Luz Santana of the Harvard Graduate School of Education developed QFT to promote critical inquiry centered around a specific stimulus; the technique requires students to generate, improve, and prioritize questions to build research skills. Rather than supplying learners with questions to investigate, QFT shifts the onus onto the learners themselves, requiring them to generate questions. This shift helps novice learners begin their critical inquiry. The QFT method has been used through a variety of contexts including education, social work, and community organization. Similarly, VTSTM asks learners to critically analyze artworks through a specific process of listing details, constructing frameworks, classifying attributes, and interpreting the works. Through this process, VTSTM claims to foster "reflective communities of practice in education environments including classrooms, museums, and hospitals around the world" (Visual Thinking Strategies n.d.). By combining these frameworks for engaging with objects, we were able to create a focused activity that promoted and supported the quintessential skills of our courses.

Application of Research to Develop This Assignment

When Pedzinski began designing the Medieval Manuscript Investigations assignment, she focused heavily on the UDL framework, a structure that significantly shaped her teaching processes. She tried to locate unique materials that would cause her students to notice details and slowly move towards evidence-based claims. Pedzinski also wanted the activity to be as inclusive as possible, allowing students to engage in different ways. She was familiar with introductory-level students' tendency to rush towards unsubstantiated claims about materials in an effort to please her or appear intelligent for their peers, and she wanted an activity that countered this tendency. When Pedzinski settled on using medieval manuscript pages as her observation object, she began looking for ways to encourage students to visually engage. She happened upon Tishman's concept of slow looking, which framed the activity and provided the basis for its structure. The idea of guiding students through unfamiliar objects was exciting for Keyser, who often considers the way students engage with primary sources due to her background in library science. Keyser noted that her students struggled with the order of critical analysis steps, such as first identifying evidence and then using that evidence in their claims. This observation on Keyser's part led us to utilize a TILT framework, which made both the order and transferability of skills more clear to students.

Slow looking, QFT, and VTSTM work together within Medieval Manuscript Investigations. In strong alignment with UDL, "Medieval Manuscript Investigations" is a classroom activity designed to afford students agency and support them through developing skills they can continue to use beyond the activity. Students visually engage with the manuscript images and practice physically annotating the document. They actively make connections between the unfamiliar object and their prior knowledge. Students then work in small groups to verbally explain their findings. Collaboratively, they generate questions about their observations. Finally, they work as a class to explain, in their own words, their observations and create hypothetical answers to their questions. Rather than passively reading and observing a written document, students creatively work through a miniature research investigation both individually and collectively. The low-stakes environment also promotes curiosity throughout the process, and the flexible nature of the activity allows students to navigate courses of inquiry by their own design.

In addition to working within the UDL framework, "Medieval Manuscript Investigations" also aligns with the practices of slow looking by requiring students to practice skills of critical observation and think purposefully about the complexities of the object. Students are asked to critically observe a manuscript page, and because the language, form, and symbols are likely unfamiliar to them, they must slow down and focus on minute details. Because of its unfamiliarity, slow looking is instinctive, and the questions posed to students on the assignment sheet guide them through their process. Just as with VTSTM, students must examine and articulate their assumptions and link elements. While the assignment eventually culminates in students making evidence-based claims, it also asks students to generate questions as a method of inquiry, as seen in the QFT process. Through these pedagogical strategies, Medieval Manuscript Investigations engages students and organically moves them through strategies they will continue to use for the duration of their courses.

TILTed Assignment

Below are the details of the Medieval Manuscript Investigations assignment, which we predict could span 30–60 minutes.

Purpose

This activity will guide you through the process of critically observing a document, asking meaningful questions, and arguing evidence-based claims. Additionally, the activity will help you challenge any assumptions you may have when approaching unfamiliar texts and demonstrate the diverse ways you can mentally and physically engage with a text.

In this assignment, you will practice the following skills:

- "Visual close-reading," or noticing and taking inventory of details within the text
- Engaging with the text through written annotation
- Practicing asking questions (inquiring) based on critical observation (research)
- Making evidence-based claims

The skills you use in this classroom activity will illustrate strong reading and critical thinking practices that will be necessary for the remainder of our work this semester. Specifically, you will use your critical observation skills to analyze future visual and written texts, generate inquiry questions, and evidence thoughtful claims.

Task

Please complete the following steps:

1. On your own, analyze the provided manuscript page, and take time to annotate the page. You can underline, highlight, circle, draw images, and/or write short phrases directly on the page. Mark anything that you notice or that stands out, even if you're not sure why. Think about (and mark) the things you are familiar and unfamiliar with. Jot down any connections you can think of.
2. After you have finished annotating, come up with two questions about the page. Tip: If you find yourself making statements instead of questions, reword your statement as a question.
3. In groups of 3–4 students, review your annotations and questions. Discuss the things you noticed and work together to draft a composite list of everything you noted and all your questions. Be sure to add any additional questions that your group asks to your list.
4. As a class, we will make a master list of all the things you have observed and the questions you have. We will categorize the details, prioritize the questions, and begin to hypothesize and make claims that answer your questions.

Criteria

This activity is focused on practice, and it will not be evaluated. We will debrief the assignment as a group.

Critical Reflection of the TILTed Assignment

We employed "Medieval Manuscript Investigation" in our classrooms to actively engage our students in critical thinking and make clear connections between analytical skills and evidence-based arguments. While we teach distinctive introductory writing courses in separate departments and were trained in different disciplinary backgrounds, we were both were impressed by the effectiveness of the activity. Students were immediately interested in the manuscripts and eager to ask questions and articulate the points they were uncertain about, effectively modeling the inquisitive tone their instructors were striving for. By following the activity's specific instructions, students were able to understand and employ necessary skills. Importantly, students gained confidence throughout the activity, in part because their work visibly demonstrated the critical thinking skills they already possessed and could use in higher-stakes course assignments later. Students showed a strong understanding of analytical claims and the process of linking claims with evidence. Prior to the activity, students were reluctant to suggest answers during class discussions and struggled to generate questions in assigned reading responses. After this activity, we both noticed students were more willing to engage with unfamiliar or uncomfortable objects and topics. They posed thoughtful questions about course texts in class and in assigned reading responses. When asked to make a claim about a course text, students began to provide supportive evidence unprompted.

There were also a number of unexpected benefits from this activity. For instance, we both value tactile learning activities that allow students to physically move and explore materials, and this activity allows them to share physical objects. Pedzinski brought her students handbound books and parchment to handle, so participating in this tactile experience primed her students for later experience-based classroom activities.

Keyser wanted to introduce her students to the idea of thinking about the book as an object and the ways readers interact with texts outside of the typical classroom. Keyser's students noted that in one manuscript image, the Virgin Mary's face appeared smudged; they were surprised to learn that the paint had been worn away due to how often it had been kissed by devout readers. The ability to incorporate learning through physical experience was not an initial goal of the Medieval Manuscript Investigations assignment, but quickly became a strength of the activity. Not only that, but the activity also proved an effective model of physical annotation; we both noticed that students were more thoughtful about annotating other course readings after participating in the activity.

In addition to the success of the assignment providing a clear understanding of analytical thinking and introducing physicality and annotation skills, the specific ways in which the instructors engaged with their students while undertaking the activity allowed for unique classroom dynamics. With her training and research in medieval texts, Pedzinski enjoyed sharing her research with her students. She appreciated engaging with materials alongside her students in a way that allowed her class to build a strong classroom community. She learned which of her students had backgrounds in Latin, art, or history; her students learned about their instructor's research outside of their classroom. This groundwork laid the base for a collaborative and social learning community that continued throughout the semester.

Keyser found that this activity gave her students, many of whom self-identified as reluctant readers and writers, a new perspective on books and the act of reading. By thinking about the resources that went into making medieval books and the ways in which medieval readers engaged with their books, both as texts and as physical objects, students learned to think about reading as a process of active interaction with a text, rather than as a treasure hunt for "hidden messages" being imparted by the author. She initially introduced this activity into her classroom hoping to simply encourage students to engage in a full-class discussion and to become comfortable sharing ideas with one another. After her students completed the activity, she and her students discuss the skills

they used during the activity and the way those skills translate to the semester's assignments. Her students gained confidence in their ability to analyze literature after realizing that they already have the ability to think critically about a challenging text. Through UDL and slow looking, this activity accomplishes its goals of enabling students to practice critical thinking and generating evidenced-based claims through a structured and didactic process while simultaneously allowing for instructor individuality.

Modifying, Adapting, or Applying This Assignment for Other Contexts

The primary goal of the Medieval Manuscript Investigations assignment is to engage students in unexpected ways and encourage them to generate productive, evidence-based discourse even when they are unfamiliar or uncomfortable with the material. This goal makes the activity intrinsically transferable to a variety of disciplines. The activity hinges on exposing students to unfamiliar objects to create a low-stakes environment where students can practice active observation. Some observations may be more apparent than others, but all are of equal value. Thus, instructors can choose any object that allows students to practice drawing conclusions based on slow looking. For humanities courses, this may include short film clips, historical comics, or a piece of abstract art. For science or math courses, students might practice graphic interpretation. This activity could also transition into a broader discussion about working with primary sources if instructors provide context and demonstrate the importance of this practice within their discipline. We encourage instructors to select something that introduces a personal interest of the instructor to engage students and develop a positive classroom community. While we both implemented the activity in the beginning of the semester, it could work at any point in the course where instructors want to spark student curiosity, for example at the beginning of a unit or mid-semester. Additionally, while we insist on keeping this assignment low-stakes to discourage student fear of failure, we could also see this assignment modeled in

class and followed by a low-stakes written homework assignment to help students practice individually.

References

Bean, John, and Dan Melzer. 2021. *Engaging Ideas: The Professor's Guide to Integrating Writing, Critical Thinking, and Active Learning in the Classroom*. 3rd ed. Jossey-Bass.

Beene, Stephanie, and Dana Statton Thompson. 2022. "Focusing on Slow Looking: An Exploration of Techniques to Develop Critical Observation Habits." *Art Documentation: Journal of the Art Libraries Society of North America* 41 (1): 1–18.

Clemens, Raymond, and Timothy Graham. 2007. *Introduction to Manuscript Studies*. Cornell University Press.

Holmes, Lynda. 2001. "What Do Students Mean When They Say, 'I Hate Writing'?" *Teaching English in the Two-Year College* 29 (2): 172–78.

Hrach, Susan. 2021. *Minding Bodies: How Physical Space, Sensation, and Movement Affect Learning*. West Virginia University Press.

Indiana University. 2023. "Class Profile: The 2022 Freshman Class." Indiana University Bloomington Office of Admissions. Accessed May 10, 2023. https://web.archive.org/web/20230510142144/https://admissions.indiana.edu/education/class-profile.html.

Lang, James M. 2016. *Small Teaching: Everyday Lessons from the Science of Learning*. Jossey-Bass.

CAST. n.d. "Universal Design for Learning Guidelines Version 2.2." Accessed August 30, 2023. https://udlguidelines.cast.org/.

Rothstein, Dan. 2012. "Did Socrates Get It Wrong?" YouTube video, 13:40. Filmed May 19, 2012 at TEDxSomerville. https://www.youtube.com/watch?v=_JdczdsYBNA

Tishman, Shari. 2018. *Slow Looking: The Art and Practice of Learning through Observation*. Routledge.

Tobin, Thomas, and Kirsten Behling. 2018. *Reach Everyone, Teach Everyone: Universal Design for Learning in Higher Education*. West Virginia University Press.

VanDerHeide, Jennifer. 2017. "Classroom Talk as Writing Instruction for Learning to Make Writing Moves in Literary Arguments." *Reading Research Quarterly* 53 (3): 323–44.

Visual Thinking Strategies. n.d. "About Us." Accessed September 10, 2023. https://vtshome.org/about/

CHAPTER 3

Creative Assignments and Reflective Writing

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Navigation Tools

What: Creative & Representational Expression
Where: Arts & Humanities

When teaching a course that fulfills a general education requirement, it is often a challenge to illicit interest among all students in the course content since each student may enroll in the course for different reasons. This chapter shares a readily adaptable two-part assignment designed to give students choice and autonomy in assessment with an "Introduction to Popular Culture" course. The assignment includes both original creative work and a piece of reflective writing to enable students to think of their work holistically rather than as separate processes. I base this assignment in the Universal Design for Learning (UDL), creative assignments, and reflection literature.

Description of Teaching/Learning Context

The assignment was developed for a relatively small (35 students), 100-level undergraduate course in comparative literature, titled "Introduction to Popular Culture," at Indiana University Bloomington (IUB). IUB is the largest and flagship campus of Indiana University, a large, research

intensive, midwestern state university located in south-central Indiana. The majority of students at this primarily white institution (PWI) are from in-state (~54 percent), with roughly 5 percent of the student population for the 2023 freshman class being international students. Approximately one-third of the total number of students at IUB are first-generation college students.

Despite (or perhaps because of) carrying a 100-level course number and the title "Introduction," students who take this course (across all its sections) are at every level of matriculation, from first-year students through to final-semester seniors. This course satisfies several general education (Gen-Ed) requirements, at both the university and college level, including one college-level Gen-Ed requirement, "Diversity in the United States," that few courses at IUB satisfy. I note this requirement in particular because, as the data collected by my colleagues and I in beginning-of-semester surveys has shown us, students are universally enrolling in this course primarily because of the Gen-Ed credits it satisfies. Although students range in year, the majority are either freshmen or sophomores (though the proportion of juniors and seniors increased when the course was taught in spring) hoping (and advised to) complete all of their Gen-Ed requirements as soon as possible.

With this in mind—i.e., that students are coming to the course disinterested in the topic and primarily to satisfy a broad degree requirement unrelated to course content—I wanted to find an assignment that could offer students a different route to connecting with the course and its content. Therefore, this assignment aims to create space for the students to connect to the course material and the study of popular culture in general through creative response, and to give them an open-ended, low-stakes opportunity to explore their own responses and ideas about course texts. The reflective component is intentionally offered (and presented) as a means to model the process of moving from observation to evidence-based argumentation. This goal, and the desire to help students to think holistically about the assignment and the dual processes of creation and reflection, are what led to me adopting the

TILT framework for this assignment, in addition to my general desire to be as transparent as possible in my teaching and assessment design.

Research/Evidence That Informs This Approach

The literature on Universal Design for Learning (UDL), creative assignments, and reflection all support my pedagogical approach discussed in this chapter.

Universal Design for Learning

This assignment utilizes the Universal Design for Learning framework (UDL). The UDL framework is a set of guidelines aimed at creating learning environments that are accessible to all students, while simultaneously being intellectually stimulating, recognizing that there is a large amount of variation in how all learners respond to classroom instruction (CAST, n.d.). Developed by the Center for Applied Special Technology (CAST), a group of education researchers and neuroscientists, UDL emerged from research into ways to make learning more accessible to students with disabilities, but has developed into a framework that urges instructors to design "for learner variability ahead of time—before instructors even know their students" (Tobin and Behling 2018, 24–25) both as a way to reduce the need for individual accommodations, and to offer options to students with different learning preferences. For this assignment, the CAST UDL framework's third pillar, "provide multiple means of action and expression" with some form of critical reflection or some set of activities designed to foster metacognition (CAST, n.d.) is most relevant.

Creative Assignments

Creative assignments are any tasks or activities that offer new approaches to course content. Connor-Green et. al. (2005) define creativity in the context of classroom assessment as "introducing novel perspectives, trying unusual approaches to problems, experimenting with new ideas, and taking intellectual risks" (215). As Snyder (2013) puts it, this can be either "from the perspective of the teacher generating nontraditional

assignments that are appropriate for enhancing or evaluating learning or developing a skill (including experiential learning and other active learning techniques)" or "from the perspective of the student who is completing a product that is new and appropriate for the assignment" (Snyder 2013, 164). Creative assessments can take any number of forms, but in general are any kind of activity that productively and appropriately departs from students' expectations for what they will be doing in the classroom, or how they will be approaching course content.

Creative assignments can and have been used for a wide range of classroom purposes, for example: teaching practical skills, such as having conversations about difficult or charged topics; as a means to illustrate course concepts, often by placing them into different or analogous contexts (Good and Moss-Racusin 2010); to engage in modes of thinking specific to a field or discipline (Connor-Greene et al. 2005); or, as in the case of this assignment, to demonstrate engagement with course concepts and individual learning. Studies across disciplines suggest that creative assignments increase student motivation, enjoyment, engagement with course content, and metacognition, all of which correlate positively with student learning, performance, and critical thinking (Snyder 2013).

In-class creative assignments are a form of active learning, which research has consistently demonstrated leads to increased student academic success, retention of information, metacognition, and enjoyment of courses (Prince 2004). When graded for completion, or not graded at all, creative assignments align with research on low-stakes or "exploratory" writing that suggests these kinds of assignments increase student motivation, encourage them to engage more deeply with course content and ideas, and lead to greater levels of participation and discussion in class (Bean and Melzer 2021). Creative assignments are often paired with reflection as a way to help students make connections between their own artistic processes and writing, critical thinking, professional development, and course content (Snyder 2013).

Reflection

As Yancey (1998) describes it, reflection implicitly asks students to consider their cognitive, affective, and intuitive processes and to compare them both to completed work and to externally imposed or individual criteria for completion and success. By reflecting on the creative or writing process, students can "theorize from and about [their] own practices" and in doing so learn processes for further reflection and revision" (Yancey 1998, 6). Reflection can be limited to individual assignments (such as personal reflection or process letters) but can also offer a model for structuring an entire course (for example, course journaling, or course portfolios). Reflection is also closely related to the process of revision, and large-scale studies of writing programs suggest (though not necessarily using the language of reflection) that guiding students to think about their own writing processes can have significant benefits both to student learning and to submitted work (Anderson et al 2016; Bean and Melzer 2021).

Bean and Melzer (2021) note two factors that can significantly impact revision: the writer's ability to see their work from a reader's perspective; and the more complex ability to understand the academic conversations in which a piece of writing is situated. Reflection, in all contexts, offers students the opportunity to develop both of those skills and a framework within which to do so. Finally, whether specifically included in the grading structure of a course or not, reflection functions as a form of self-evaluation and assessment; as Bean and Melzer (2021) note, there is a wide range of research from writing studies, both on reflection and other forms of student self-assessment, demonstrating that self-assessment not only improves student performance and confidence, but also leads to an increase in skill-transfer across disciplines and broader contexts.

Application of Research to Develop This Assignment

The course for which I developed this assignment was my fifth semester teaching "Introduction to Popular Culture," and my seventh semester teaching as a graduate instructor, having taught composition for a year prior. I had spent the previous year reflecting on my own teaching

and expectations for students in these courses. Initially modeling my own courses on the syllabi I was given for my composition courses; it quickly became clear that my expectations for the course were not aligning with student expectations or needs for an introductory course at this level. This assignment is the result of a complete overhaul of my assessment structures—and approach to course design in general—borne of (at the time) new familiarity with evidence-based teaching practices. This assignment is also the product of two semesters of successful experimentation with small, low- or zero-stakes write-to-learn and reflective assignments.

Developed with the UDL framework in mind, "Creative Assignments and Reflective Writing" offers a distinctive means of engaging with course themes that emphasizes student autonomy and self-reflection. This assignment aims to highlight patterns and connections both across course material and between course material and the students' own learning and creative processes. At the same time, it provides open-ended means of representing student work and ideas, as well as a clear and structured model both for instructor feedback and student self-evaluation and reflection. In line with research on UDL, creative assessment, and reflective assignments, Creative Assignments and Reflective Writing promotes and prioritizes student agency, autonomy, and metacognitive processes that significantly enhance course engagement, understanding and, ideally, enjoyment.

As noted above, creative assignments are regularly paired with reflection in the form of process letters, course journals, or other forms of writing. Research suggests that creative assignments offer significant benefits to metacognition on their own (Prince, 2004; Snyder, 2013); with that in mind, I intended the reflective part of this assignment to make those implicit benefits more visible, by offering students that metacognitive framing at the time they receive the assignment (because they receive both the creative prompt and the reflective prompts at the same time). The assignment offers the opportunity for students to choose whether to tackle the two parts of the assignment either simultaneously or in series, recognizing that because students know

that they are being asked to reflect as part of the assignment they will, consciously or unconsciously, have begun the metacognitive process the moment they read the assignment.

In the reflective portion of the assignment, students are asked to explicitly state their initial intentions for the project, to narrate the process of developing their creative piece, to evaluate how well they achieved those independently determined goals, and to situate their piece within the landscape of course material and themes. In this way, the hope is that students are reflecting on the process and creating new connections between elements of the course that would not have been possible without the "third term" of their own creative piece. This reflective process then serves as a model for future classroom activities such as peer review and revision; aligned with research on writing revision, reflective writing guides students to think of their work holistically, rather than treating creativity (or critical thinking, or writing itself) and reflection as if they are separate processes (Bean and Melzer 2021).

TILTed Assignment

Below are the details of the Creative Assignments and Reflective Writing assignment.

Purpose

This assignment will involve producing an original creative work that speaks to or responds in some way to the course themes, ideas, or texts, and then critically reflecting on your experience and choices in producing that work. This assignment will guide you through the process of reflection and asks you to consider a number of factors in artistic creation and how they relate to each other: artist's intent and goals, successes and challenges in fulfilling that intention, and the potential for creating connections between different works. Reflection on the artistic process and its outcomes is one way to help us understand how texts, media, and art are both created and received, and can also be helpful when we think about other things we produce, such as essays, and how we can reflect, revisit, or revise those works.

In this assignment, you will practice the following skills:

- Planning and carrying out an independent creative project
- Reflecting on goals, the process, and your successes and challenges
- Making connections between your creative project and course themes and texts
- Explaining your decisions and reasoning to an audience unfamiliar with your process

In writing your reflection, you should imagine you are writing to your peers and classmates. You can assume your reader has read, watched, or engaged in the course texts and discussions at least as much as you have. You might even find it helpful to talk your ideas through with some of your classmates, in order to get a better sense for the amount of information, tone, and clarity you might need in this reflection.

Task

First, plan and make the creative piece itself. There is no limit to the form this can take: it could be, for example, a short story, poem, song, video, series of photographs, painting, sculpture, podcast, creative essay, etc. It should be inspired by, address, respond, or depict in some way the themes and ideas we've encountered so far in the course. Either during that process or once you've finished, you should write your reflection. You should make sure to answer the questions below, but as long as you do that, you can take it in any direction you like. Write as much or as little as you want, as long as you address the following.

- Goals: What were your goals for this piece?
- Method: How did you go about creating it?
- Connections: What parts of the course is your piece connected to, responding to, or addressing?
- Successes: What do you like best about your piece; what are you most proud of?
- Challenges: Which parts of the planning or process were the most challenging for you?
- Final thoughts: If you were to do this assignment over again, what would you do the same? What would you do differently?

Criteria

In order to receive full credit on this assignment, you will need to submit your creative piece, submit your reflection, and ensure your reflection answers all six questions listed above.

Critical Reflection of the TILTed Assignment

I have incorporated this assignment into two different versions of an introduction to popular culture course, one in-person course that focused on written text (primarily literature and journalism) and one asynchronous online course that focused on film, television, and new media. The assignment translated between the two modalities with minimal changes, with the exception of an additional set of instructions in the asynchronous course for photographing or otherwise digitizing any physical objects or artworks they chose to create — there did seem to be a larger proportion of students electing to use digital media (perhaps for ease) in the asynchronous course, but some still did produce things like paintings on canvas.

Aligned with current research on exploratory writing and creative assignments, this assignment utilized a modified version of completion-based grading, for two purposes: first, it allowed for a high degree of flexibility with the grading structure of the assignment; and, second, it allows students greater freedom for experimentation with new ideas, approaches, and play especially in the creative portion of the assignment. The two component parts of this assignment aimed to offer a balance between open-ended free expression and zero-stakes response in the creative portion, and a structured set of questions in the reflective portion. This allowed students to engage with the reflection as part of the creative process, and vice versa, offering a meta-reflection on their own approach to completing course assignments, and further modeling the iterative process of artistic expression the assignment intends to demonstrate. In both instances I found students to be excited about and engaged with the assignment, and to talk very positively about it to me, to each other, and in post-semester course evaluations. For example, a colleague of mine, who taught in the same classroom after me, overheard

two students talking about how excited they were for the chance to do something different and fun with this assignment, something they had not experienced in other classes.

In addition, perhaps because students were invested in the piece they were creating, they approached the reflection portion of the assignment not only with care and rigor, but also with a much higher level of candor, self-critique, and willingness to disclose uncertainties, lingering questions, challenges, or elements of the project they were still unsatisfied with. In the in-person course, while they were working on this assignment and in class after having received feedback on it, students were noticeably more confident in their ownership over and approach to course themes and ideas: more willing to venture questions and make connections between texts even when tentative. I hope that this is at least in part a result of having applied and demonstrated (to themselves) their ability to apply the critical analysis skills they had been utilizing in the earlier stages of the course. I did not notice the same shift in the asynchronous course, which may imply the need for further tweaks to either the assignment or, more likely, to the other modes of interaction and expression available to students in future asynchronous courses.

Modifying, Adapting, or Applying This Assignment for Other Contexts

The core goals of this assignment were (1) to give students choice in how they respond to the course in a way that (2) encourages them to find meaning and connections of their own in the course themes and material, (3) in a modality different from the analytical and discussion-based formats that make up most of the coursework; and (4) to guide students toward thinking critically about their own process of planning and creating.

I encourage instructors to consider the role of reflection and revision in their courses more broadly: for example, in concert with peer review or other revision-based work, the reflective portion of this assignment could be modified into a worksheet containing similar

questions that students might use to evaluate their peers' work (see: Supplemental Resources). There is significant research on utilizing individual reflection and even peer feedback in courses of all sizes, and crafted with that aim in mind this assignment could potentially be adapted even to large-scale lecture courses. In fact, I recently included a mid-semester reflective assignment in a 150-person lecture course and the students responded very well and enthusiastically.

I've also used this approach to reflective writing in history courses to teach both primary source analysis (of text objects and also of photographs), and for engaging with filmed oral histories and witness testimony. In these classes, we ask a series of initial questions about the conditions under which we (as a class and as individuals) are encountering these sources, to focus attention on the contexts that inform our understanding of historical data and sources. This is then followed by reflection modeled on the assignment outlined above, that asks students to share their experiences with what are often challenging and confronting sources, and what role this awareness of their own contexts played in that encounter (Sidky, 2022).

Outside of text- or media-analysis based courses, the underlying framework for this activity is the combination of an assignment aligned with CAST UDL framework's third pillar, "Provide multiple means of action and expression" with some form of critical reflection or some set of activities designed to foster metacognition (CAST, n.d.). Bean and Melzer (2021) note that there are four elements typical to "strong metacognitive thinking: (1) showing an awareness of alternative choices, (2) providing evidence from their own work of the fact that choices were made, (3) justifying the choices they did make, and (4) accepting the consequences of their various choices. As such, any activity that offers students multiple ways to express their ideas within it, and then asks them to describe and articulate the choice of one method of representation over another works toward the same set of goals.

Finally, I see this assignment as offering a broader template that can be overlaid onto existing assignment models or genres, either for framing the assignment itself or for post-facto reflection. For example,

approaching a traditional analytical essay as the product of a series of creative choices encourages students to think beyond argumentation and data to engage with other formal or stylistic elements that can impact the success of their writing both within and beyond the college classroom. This can provide a framework for engaging students in discussion of genre, voice, tone, audience, or general discussions of rhetoric and prose style that are often overlooked in non-composition courses. Although I am confident that upper-level and graduate students would relish the opportunity to do an open-ended creative response to course themes or ideas (i.e. the assignment as presented above), I can imagine some hesitation in courses that are working with advanced concepts, in a highly theoretical mode, or with particularly morally or emotionally loaded topics (something I regularly teach). With sufficient framing in terms of questions about the ethics of representation, I have used a version of this assignment modified to be a group project (for the creative portion) and individual reflection in course on film and television representations of the Holocaust to some success. Utilizing this assignment as a framework for thinking creatively and reflecting critically on the work they are already doing may provide one route toward varied forms of both expression of ideas and engagement with course themes and skills.

References

Anderson, Paul, Chris M. Anson, Robert M. Gonyea, and Charles Paine. 2016. "How to Create High-Impact Writing Assignments That Enhance Learning and Development and Reinvigorate WAC/WID Programs: What Almost 72,000 Undergraduates Taught Us." *Across the Disciplines* 13 (4): 1–18. https://doi.org/10.37514/ATD-J.2016.13.4.13

Bean, John C., and Dan Melzer. 2021. *Engaging Ideas: The Professor's Guide to Integrating Writing, Critical Thinking, and Active Learning in the Classroom*. 3rd ed. Jossey-Bass.

CAST. n.d. "Universal Design for Learning Guidelines Version 2.2." Accessed August 30, 2023. https://udlguidelines.cast.org/

Connor-Greene, Patricia A., Janice W. Murdoch, Art Young, and Catherine Paul. 2005. "Poetry: It's Not Just for English Class Anymore." *Teaching of Psychology* 32 (4): 215–21. https://doi.org/10.1207/s15328023top3204_2

Good, Jessica J., and Corinne A. Moss-Racusin. 2010. "'But, That Doesn't Apply to Me': Teaching College Students to Think about Gender." *Psychology of Women Quarterly* 34 (3): 418–21. https://doi.org/10.1111/j.1471-6402.2010.01586.x

Prince, Michael. 2004. "Does Active Learning Work? A Review of the Research." *Journal of Engineering Education* 93 (3): 223–31. https://doi.org/10.1002/j.2168-9830.2004.tb00809.x

Sidky, Sean. 2022. "Critique Beyond Judgment: Exploring Testimony and Truth in the Classroom." *Genocide Studies and Prevention: An International Journal* 16 (2). https://doi.org/10.5038/1911-9933.16.2.1871

Snyder, Heather T. 2013. "Designing Creative Assignments: Examples of Journal Assignments and a Creative Project." In *Teaching Creatively and Teaching Creativity*, edited by Mary Banks Gregerson, James C. Kaufman, and Heather T. Snyder, 163–73. Springer. https://doi.org/10.1007/978-1-4614-5185-3_12

Tobin, Thomas J., and Kirsten Behling. 2018. *Reach Everyone, Teach Everyone: Universal Design for Learning in Higher Education*. West Virginia University Press.

Yancey, Kathleen Blake. 1998. *Reflection in the Writing Classroom*. Utah State University Press.

CHAPTER 4

Two-pass Assignments for Guiding Students Through the Transition to Rigorous Logical Reasoning

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Navigation Tools

What: Analytical & Interpretive Work
Where: STEM & Social Sciences

This chapter presents a two-pass assignment strategy designed to support first-year university students in transitioning from computational problem-solving to rigorous logical reasoning within a mathematics course. The approach integrates Transparency in Learning and Teaching (TILT) principles and specifications grading to enhance students' logical reasoning and proof-writing skills. The two-pass assignments involve initial submission, detailed formative feedback, and resubmission for final evaluation, promoting reflection and improvement. The chapter includes practical examples, implementation details, and evidence of positive student outcomes. Suggestions for adaptation to other courses and contexts are provided, emphasizing the flexibility and effectiveness of the two-pass assignment strategy in fostering deep learning and reducing student anxiety.

Description of Teaching/Learning Context

The hardest part of university mathematics for a first-year college student, is often the transition from computational problem-solving to logical reasoning. MATH 1200 Problems, Conjectures, and Proofs is a multi-section first-year course at York University, a research-intensive institution in Ontario, Canada, with roughly 47,000 students (Office of Institutional Planning and Analysis 2024).

York University has a diverse student population, with citizenship from over 183 countries, and a large percentage of first-generation students, as well as a high percentage of students that rely on financial assistance (Munro 2022). The successful results of the TILTed approach, particularly, that "[f]irst-generation students and multi-racial students experienced medium-to-large effect size differences in the three domains that are critical predictors of students' success: academic confidence, belongingness, and mastery of the skills that employers value" (Winkelmes et al. 2016, 33) inspired us to implement a TILTed approach.

MATH 1200 is a core requirement for all first- and second-year undergraduate mathematics and statistics majors who are enrolled in one of the seven programs offered by the Department of Mathematics and Statistics. As a result, the vast majority of students in the course are math or statistics majors. Occasionally, we have one or two students majoring in computer science or a natural science.

The learning goal of MATH 1200 is logical reasoning. At the successful completion of the course, students should be able to employ formal mathematical logic to write logically rigorous arguments, called proofs in mathematics. A proof is a written record of a sequence of thoughts where each step can be justified by true logical implication. For example, "If n is an even integer, then n+6 is an even integer" is a logical implication, also known as an "if... then..." statement.

The course learning objectives demand personalized attention to details from the instructional team. The small class size of MATH 1200 sets itself apart from other first-year courses. Other first-year mathematics course at York University typically have roughly 150

students. In a typical 12-week term, students self-enroll into a section of MATH 1200. Two or three sections of the course are typically offered in a term, and sections are loosely coordinated. Each section is supported by one instructor and two to three graduate teaching assistants. Each section meets synchronously (typically in-person) three times a week, two 80-minute lectures and one 50-minute tutorial. Each section is further divided into two small tutorial groups, each supported by their own graduate teaching assistant.

To help describe the learning context, we briefly describe the challenges from a student's point of view. In high school mathematics, where most homework and test questions are computational, students are often given practice problems like the ones presented in class, which often have definitive right or wrong answers. Students apply the algorithms taught in class to solve practice problems. The challenge is to learn to combine various tools to solve more complex problems. Students think they reasoned correctly if their final answer matches the answer key. Understanding why such algorithms should produce correct answers is often not the emphasis.

Writing a proof requires a different type of thinking process. Students are not asked to find the answer to something they do not know. Students are told a certain statement is true and are asked to write an argument convincing instructors that their reasoning process also allows them to believe such a statement is true. Writing a proof demands students to reflect on their thinking process. There are no algorithms to apply. To succeed in MATH 1200 and their majors, students must adapt to a thinking process with automatic reflection at every step. The answer to "Why is this true?" should not be "We have always done it this way" or "The instructor said so," but should be a sequence of arguments that can be traced to commonly agreed upon truth, called definitions and theorems in mathematics.

"Prove that if n is an even integer, then n+6 is even" is a typical question. Many students would answer, "because the sum of two even integers is even." This is an acceptable answer in high school but not in MATH 1200. An even integer is defined to be an integer that can

be written as a product of 2 and some integer. A logically rigorous proof requires students to explicitly express n+6, through algebraic operations, as a product of 2 and an integer and justify the correctness of every single step.

The challenge is that the development of logically rigorous reasoning skills requires a learner to be conscious of their reasoning process. In the above example, many novice learners can successfully finish the proof with rigor when asked, "How can you verify that the sum of two even integers is even using the definition?" This type of guiding question is the kind of feedback students receive when their assignment is first returned. Then, students are asked to update their proof before resubmitting their assignments for the final evaluation. Our teaching strategy is an example of the TILTed approach applied not only to the assessment design but also to the entire course design.

We have attached a sample assignment sheet that highlights our application of the TILTed approach with clear descriptions of the purpose, task, and criteria. We emphasize that our application of the TILTed approach encompasses all aspects of the course including lectures, tutorials, and assignments in that we share the purpose, task, and criteria of each lesson.

Research/Evidence That Informs This Approach

The main inspiration for the structure of our TILTed assignment comes from the special issue of PRIMUS: Problems, Resources, and Issues in Mathematics Undergraduate Studies on Implementing Mastery Grading in the Undergraduate Mathematics Classroom (Campbell, Clark and O'Shaughnessy 2020). Mastery grading takes many forms, including mastery-based testing, standards-based grading, and specifications grading. We chose specifications grading due to its flexibility in choosing which features work best in any instance (Nilson 2016). The main features of specifications grading to choose from include:

- Specifications, or clear, detailed statements of what is required for a successful submission
- Opportunity to revise any submissions to meet the specifications

- Pass/fail grading
- Course grades being determined by bundles of assignments or modules based on learning outcomes and skills (Nilson 2015)

There are many variations of these features, including using a token system for students to earn opportunities for resubmission or late submission, and incentives to earn more tokens (Carlisle 2020; Prasad 2020). Specifications grading is also applied across a course on all assessments, or just on some assessments, including quizzes, tests, and exams, as well as assignments, like problem sets, writing assignments, and portfolios (Fernandez 2021; Prasad 2020). Since this form of grading is new and can be complicated, it takes time and thought to explain the approach to students and to achieve buy-in. There are a variety of ways to do this, from writing and discussing a detailed syllabus, to engaging in activities for students to try out the grading themselves, work through scenarios, reflecting and writing about them, as well as revisiting throughout the term (Carlisle 2020; Cooper 2020; Curley and Downey 2023; Prasad 2020; Williams 2018).

There are a variety of motivations for instructors to choose specifications grading. Awarding partial credit for incorrect or incomplete work means that students can pass courses without achieving the learning outcomes for the course. Specifications grading, where specifications are provided that must be met to pass the course, can help avoid this issue, and was motivating for some implementations (Carlisle 2020; Curley and Downey 2023). Instructors want to promote a growth mindset in their students by focusing on learning and feedback over grades and results to demonstrate that with practice they can improve and learn from mistakes (Curley and Downey 2023; Epstein 2023; Fernandez 2021). Variations or structures of specifications grading are designed so that resubmissions are of high quality, focused on engaging with and applying the feedback received instead of just trying to earn a higher grade through multiple resubmissions of barely revised work (Prasad 2020; Williams 2018).

There are positive effects of specifications grading on students, as well as some challenges, as identified by students. Students recognize that they learn more, particularly learning from their mistakes and feel

specifications grading reduces their stress and anxiety (Cooper 2020; Curley and Downey 2023; Fernandez 2021; Prasad 2020). The transition to this different grading system can be challenging for some students. Some appreciate being "…in control of [their] own grade" (Williams 2018, 140). Other students express frustration in not receiving partial credit and the effort needed for success, while recognizing the benefit to their learning (Curley and Downey 2023; Prasad 2020).

Application of Research to Develop This Assignment

As we mentioned, transitioning students are just learning how to self-evaluate their own arguments beyond "right or wrong", and need support with reading, understanding, and applying feedback. The two-pass assignments are a key part of our strategy in MATH 1200. The key feature of our assignment strategy applies a variation of specifications grading (Nilson 2015). The provided assignment sheet demonstrates our approach in detail. Each assignment has two parts, and the students' work from part one to part two has elements of specifications grading. For example, the purpose and the criteria section of the assignment sheet provides transparency to help students meet specified requirements.

Some of the specified requirements help improve students' logical reasoning and proof-writing skills. Descriptive, formative feedback is provided to indicate how students have met, or not yet met the specifications to help them improve. The feedback prompts students to reflect on their thinking and writing process. In the assignment sheet, the paragraph between part one and part two of the criteria indicates the type of feedback students can expect to receive. Students can then revise their assignments and resubmit. The resubmission is part two of the assignment, which is then more formally graded.

The idea in our two-pass assignments can be applied more broadly to other aspects of the course. We combine a few transparent methods including sharing the learning goals and criteria in advance of each activity, and discussing any questions students have about the

expectations, as well as engaging them in peer activities to practice solving problems and communicating complete logical arguments.

The purpose, goals, criteria, and expectations for the assignments are provided from the beginning of the course in various forms, including in the course outline, and via an infographic shared in the learning management system. The goals and criteria for individual assignments are shared with the assignment itself in writing as well as orally as we work toward assignments in class. Students practice the skills and apply the concepts through activities with peers in class and tutorial. The work and activities they engage with are connected to the course and lesson learning outcomes, before being connected to the individual assignments themselves.

On the first day of class, we engage in group problem solving with a problem that combines computational problem solving with logical reasoning and communication to demonstrate what we are working toward in writing proofs. We use this activity as preparation for the two-pass assignments. In addition to students practicing using the submission portal, we prepared mock solutions with feedback so that students could engage in the feedback review and submission of part two. The mock solutions were designed with common gaps in communication and common errors in logical reasoning and the kind of feedback that will accompany these gaps and errors. The purpose is for students to experience the kind of feedback they may receive and how to apply the feedback to improve their assignments. In class, students discussed what they think the feedback means and how to apply the feedback to adjust the solution. Collectively we applied their ideas and produced a complete proof and "ideal solution" that models the assignment criteria. This sample was posted as a resource to assist students with their assignments.

TILTed Assignment

A sample assignment is provided below to illustrate this approach. It reflects how transparency, structured feedback, and iterative revision are embedded in the design of MATH 1200 assignments.

Purpose

Problem solving and proof writing require strong mathematical logic and reasoning skills. The purpose of this assignment is for you to practice your logical reasoning and communication skills, building from understanding and applying the definition of conditional statements, to applying your mathematical logic to identify and explain the validity and invalidity of arguments, and then applying these arguments to solve a mathematical logic puzzle. Problem-solving also requires strong mathematical logic, reasoning, and reflection skills. You will receive feedback on your mathematical communication in two passes. See the criteria section for details.

Task

Prepare your solution to each question using LaTeX, export as a PDF, and submit via Crowdmark in eClass.

1. Suppose your friend makes the following promise: "if we study, then we can go to the movies." For each scenario below, decide whether your friend's promise has been kept (e.g. where the conditional statement is true) and explain your reasoning for each decision.
   - You and your friend go to the movies.
   - You and your friend study now and then you go to the movies.
   - You and your friend go to the movies instead of studying.
   - You and your friend study, but you miss the movies.
   - You and your friend study if and only if you go to the movies.
2. Determine whether each of the arguments below are valid conclusions based on the given true statement. Explain your reasoning for the validity or invalidity of each.
   - True Statement: If we go downhill skiing, then we eat lunch in the ski chalet.
   - Argument: We do not go downhill skiing. Therefore, we do not eat lunch in the ski chalet.
   - True Statement: We go downhill skiing, or we eat lunch in the ski chalet.

- Argument: We do not eat lunch in the ski chalet. Therefore, we go downhill skiing.
- True Statement: If we eat lunch in the ski chalet, then we go downhill skiing.
- Argument: We eat lunch in the ski chalet. Therefore, we go downhill skiing.
- True Statement: If we eat lunch in the ski chalet, then we go downhill skiing.
- Argument: We do not go downhill skiing. Therefore, we do not eat lunch in the ski chalet.

3. A group of five talented friends are trying out for a talent show. They do not want to compete for a spot against each other so will try out for different talents. Each talent has its own tryout day, which take place Monday through Friday. Given the following information, determine one possible schedule of tryouts for these five friends (there may be more than one possible schedule) and explain your conclusions.
   - Mohammed is equally talented in juggling and mathematical calculations.
   - If Peace tries out for mathematical calculations, then Mohammed tries out for juggling.
   - Adam tries out for singing.
   - Singing tryouts will be on Monday or on Wednesday.
   - If singing tryouts are on Monday, then gymnastics tryouts are on Wednesday.
   - Peace tries out for mathematical calculations and mathematical calculations tryouts will be on Tuesday.
   - Gymnastics tryouts are not on Wednesday.
   - If Tracy tries out for robotics, then robotics tryouts are on Monday.
   - Nguyen will try out for gymnastics or gymnastics tryouts will be on Wednesday.
   - Gymnastic tryouts will be on Thursday or robotics tryouts will be on Monday.

Criteria

Each question on this assignment (1, 2, 3) will be evaluated using the following criteria.

Part 1

Due: *Insert Due Date*

Submission (1 point) includes: A complete and honest attempt of the exercise, including all subparts, and a PDF produced by LaTeX with correct typesetting for mathematics and text. You can expect to receive feedback on the clarity of your writing that allows you to improve your mathematical communication and detect potential logical reasoning misconceptions.

Part 2

Due: *Due Date Range One Week After Initial Due Date*

Communication (2 points)

- Use of complete sentences to accurately and precisely indicate your conjecture at the beginning of your solution, or as a conclusion at the end of your solution.
- Complete and clear explanation for why your conjecture holds, or how you arrived at your conclusion.

Correct Logical Reasoning (2 points)

- Correct identification of the given information (the hypothesis) of the question and what you are asked to determine in the question (the conclusion).
- Use of correct and rigorous logical reasoning to connect the given information (the hypothesis) and arrive at the correct result(s) (the conclusion).

Total points per question: 5

Total points for the assignment: 15

Critical Reflection of the TILTed Assignment

The two-pass assignment was implemented on all four assignments of MATH 1200. On each assignment, students work out several

mathematical logic-related questions and submit their answers in the form of mathematical proofs. We broadly observed qualitative improvements in students' progression of their development of logical rigor. Compared to other evaluation approaches designed to engage a student's logical thinking and reflection skills, such as in-class presentations and critiques, we found that two-pass assignments are a more effective approach. Students are less stressed about "on-stage performance" and are given time to digest and discuss the feedback they received. More importantly, students can ask, "What does this comment mean?" and introspect to bridge the gap between their perception of logical rigor and the desired learning outcomes. Students gained clarity in their thinking processes and made necessary adjustments. In turn, graders observed better organization of thoughts and fewer gaps in logical reasoning in resubmitted proofs.

Over the years we have found that the unknown creates undue stress and distraction from learning for students. They often spend more energy trying to anticipate assignments instead of learning material and applying their learning. By being transparent we hoped to reduce stress and anxiety and have similar results as other courses that implemented transparency. Namely, we hoped for increased motivation (Winkelmes et al. 2015), increased confidence in both their ability to succeed in mathematics, as well as learn on their own, and we also hoped they would feel a greater sense of belonging in the classroom, field, and University (Ou 2018; Winkelmes et al. 2016).

Over the course of a semester, the transparency in an instructor's expectations witnessed the development of a deeper appreciation of logical rigour and motivation to study the course material despite its difficulty. MATH 1200 with the two-pass assignments also used a flipped learning approach (Talbert 2017), where the content for the course was posted online, in the form of short, instructional videos, and the class time was used for problem solving and other activities. Although some students did rely on the online content and did not attend class regularly, many students regularly attended the class sessions and tutorials. This demonstrates internal motivation by students who believe in the value of group problem solving and other activities. Beyond attending, students actively

engaged both in and outside of class time. They worked together, supported, and taught one another, as well as challenged one another. They posed their own problems, and identified how to apply our problem-solving, logical reasoning, and proof writing methods to their other mathematics and statistics courses. They embraced our class agreements particularly when providing feedback to their peers. Instead of evaluating their peer's solution as "right or wrong" and providing feedback in this way by, for example, correcting mistakes and showing "the solution," they gave hints, and posed questions to help their peers think through their process. They recognized the value of the two-pass assignments and accompanying feedback, demonstrating this through their own applications.

In our planning and design of the two-pass assignments we anticipated there would be a higher quantity of work for both students and graders, and so we reduced the number of assignments. Given the learning gains we observed in students, having fewer assignments that students spend more time with through the two-pass evaluation is better than a higher quantity of assignments. Two-pass assignments encouraged students to reflect on and focus on their logical reasoning and communication skills, the key outcomes for MATH 1200. This also reduces the workload for instructors in terms of designing assignments, as there are fewer assignments that need to be designed. This also means the quality of the assignments are better because more time is spent designing fewer assignments. It is important to note that two-pass assignments take more time for graders, and even more time than we anticipated. In the future, we do need to consider how to manage the grader's time. It may be that more time is allocated to grading the assignments, or the instructor and grader share the workload.

Some ideas come to mind for future implementation of the two-pass assignments. While first-year students are considered novice learners and practitioners in logical rigor, we believe there are benefits in asking students to be involved in the grading process. The process of giving peer feedback demands a student to focus on gaps in deduction in their peers' submissions. The final one or two assignments in the course can

transition to using peer feedback as the first-pass evaluation. What we observed in class for how students supported each other in the preparation of their assignments and in engaging in other activities indicates they are prepared to offer peer feedback in this way for the final one or two assignments. This not only adds learning opportunities for students but is also an option to respond to the elevated workload of graders with the two-pass assignment. Another option is the effective alternative of engaging in group discussion with the instructor and other students. Discussing the submission instead of resubmitting had a greater effect on quiz scores and confidence (Epstein 2023). This approach, of replacing some resubmissions with discussion with the instructor would balance the workload between grader and instructor.

Modifying, Adapting, or Applying This Assignment for Other Contexts

The two-pass evaluation strategy can be adapted to large courses, such as most first-year survey courses, and be mixed with peer feedback. For example, an instructor can use the two-pass assignment on a writing-intensive question or a project report in an introductory calculus class.

The two-pass assignments can be applied with gradually less feedback throughout the semester to reduce students' reliance on feedback. For example, suppose an instructor plans to have four assessments for a course. Then, the two-pass assignment can be applied only to the first two assessments.

The two-pass assignment can be combined with peer feedback to further enhance a student's learning experience, although one must be careful in such implementation. Some past offering of the course implemented unsupervised peer feedback for assignments in their evaluation with less than desirable outcomes. Most students are novice learners, new to thinking with logical rigour and inexperienced in reading proofs. In reviewing others' solutions, students could not effectively identify issues with clarity and could not provide helpful comments. A student's solution may contain too many clarity issues or mistakes that a reviewing student is overwhelmed with the challenge.

We suggest a gradual approach to incorporate peer feedback into the two-pass assignment through a series of reading exercises. Instructors lead in-class discussions of some flawed writing samples and ask students to identify clarity issues and to provide comments. We suggest, as take-home assignments, that students read sample proofs with a controlled number of flaws. Students are evaluated on the number of flaws correctly identified and the quality of comments. These reading exercises help students ease into the role of a peer reviewer and give them the confidence and tools to review effectively. One can think of this series of reading exercises as practice peer feedback. An instructor can then implement peer feedback on the last assignment of the semester.

References

Campbell, Robert, David Clark, and Jessica O'Shaughnessy. 2020. "Introduction to the Special Issue on Implementing Mastery Grading in the Undergraduate Mathematics Classroom." *PRIMUS: Problems, Resources, and Issues in Mathematics Undergraduate Studies* 30 (8–10): 837–48. https://doi.org/10.1080/10511970.2020.1778824.

Carlisle, Sylvia. 2020. "Simple Specifications Grading." *PRIMUS: Problems, Resources, and Issues in Mathematics Undergraduate Studies* 30 (8–10): 926–51. https://doi.org/10.1080/10511970.2019.1695238.

Cooper, Andrew A. 2020. "Techniques Grading: Mastery Grading for Proofs Courses." PRIMUS: Problems, Resources, and Issues in Mathematics Undergraduate Studies 30 (8–10): 1071–86. https://doi.org/10.1080/10511970.2020.1733151.

Curley, Brenna, and Jillian Downey. 2023. "Implementation of Alternative Grading Methods in a Mathematical Statistics Course." *Journal of Statistics and Data Science Education*. https://doi.org/10.1080/26939169.2023.2249956

Department of Mathematics and Statistics. n.d. "Undergraduate Programs." York University. Accessed February 21, 2024. https://www.yorku.ca/science/mathstats/programs/

Epstein, R. 2023. "Revisiting Past Assignments: Do Precalculus Students Learn More from Revising or Discussing Their Work?" *PRIMUS: Problems, Resources, and Issues in Mathematics Undergraduate Studies*, 1–17. https://doi.org/10.1080/10511970.2023.2250764

Fernandez, Oscar E. 2021. "Second Chance Grading: An Equitable, Meaningful, and Easy-to-Implement Grading System That Synergizes the Research on Testing for Learning, Mastery Grading, and Growth Mindsets." *PRIMUS: Problems, Resources, and Issues in Mathematics Undergraduate Studies* 31 (8): 855–68. https://doi.org/10.1080/10511970.2020.1772915

Munro, Yvette. 2022. "Overview of York Students and Strategies for Success." Presentation at York University New Faculty Orientation, August 24, 2022.

Nilson, Linda B. 2015. *Specifications Grading: Restoring Rigor, Motivating Students, and Saving Faculty Time*. Routledge.

Nilson, Linda B. 2016. "Yes, Virginia, There's a Better Way to Grade." *Inside Higher Ed*, January 18, 2016. https://www.insidehighered.com/views/2016/01/19/new-ways-grade-more-effectively-essay

Office of Institutional Planning and Analysis (OIPA). n.d. "Undergraduate Student Headcount." York University. Accessed February 21, 2024. https://www.yorku.ca/oipa/quick-facts/undergraduate-student-headcount-2/

Ou, Jack. 2018. "Board 75: Work in Progress: A Study of Transparent Assignments and Their Impact on Students in an Introductory Circuit Course." In 2018 ASEE Annual Conference & Exposition, 1–11. https://doi.org/10.18260/1-2--30100

Prasad, Priya V. 2020. "Using Revision and Specifications Grading to Develop Students' Mathematical Habits of Mind." *PRIMUS: Problems, Resources, and Issues in Mathematics Undergraduate Studies* 30 (8–10): 908–25. https://doi.org/10.1080/10511970.2019.1709589

Talbert, Robert. 2017. *Flipped Learning: A Guide for Higher Education Faculty*. Stylus Publishing.

Williams, Kristopher. 2018. "Specifications-Based Grading in an Introduction to Proofs Course." *PRIMUS: Problems, Resources, and Issues in Mathematics Undergraduate Studies* 28 (2): 128–42. https://doi.org/10.1080/10511970.2017.1344337.

Winkelmes, Mary-Ann, David E. Copeland, Ed Jorgensen, Alison Sloat, Anna Smedley, Peter Pizor, Katharine Johnson, and Sharon Jalene. 2015. "Benefits (Some Unexpected) of Transparently Designed Assignments." *The National Teaching & Learning Forum* 24 (4): 4–7. https://doi.org/10.1002/ntlf.30029.

Winkelmes, Mary-Ann, Matthew Bernacki, Jeffrey Butler, Michelle Zochowski, Jennifer Golanics, and Kathryn Harriss Weavil. 2016. "A Teaching Intervention That Increases Underserved College Students' Success." *Peer Review: Emerging Trends and Key Debates in Undergraduate Education* 18 (1–2): 31–36.

SECTION 2

Engaged Learning

This section illustrates how the assessment strategies shared through each of the TILTed pedagogy chapters herein support engaged learning. Encouraging students to become and remain engaged in their learning is the second grand challenge for SoTL. Engaged learners are intentional and active, using metacognitive strategies to connect with the material and become more appreciative of the learning process itself. There is often a disconnect between educators' and students' perceptions of learning. While educators view learning as a complex process requiring effort and engagement, students often see it as merely remembering information.

Chapter 5 explores the use of a case-study approach known as backcasting within an introduction to sociology course at a community college, aimed at engaging students in future-oriented thinking

Chapter 6 focuses on the student learning benefits of simulation-based learning that leverages cross-institutional simulation to enhance realism in a role-playing negotiation simulation between undergraduate students at four universities. Matching students across institutions increases simulation realism by removing established peer relationships and mutual or shared knowledge of course concepts. This approach enhances collaborative learning experiences by expanding diversity of backgrounds, increasing relationship and communication uncertainty, and introducing confusion and complexity to the environment. These challenges are mitigated by transparency and structure in the assignment, combined with a flipped classroom format, post-simulation formative assessment and feedback, and student-led self-reflection.

Chapter 7 provides a structured peer review process that models the academic publishing process, giving students the opportunity to engage in academic discourse with other novices in a low-stakes environment. This peer review assignment is based on peer review pedagogical literature and the literature on academic discourse socialization. It is easily adaptable to any discipline requiring a research paper, not just social science.

Finally, chapter 8 presents a reflective poster assignment used in an introductory environmental science service-learning course to improve student learning, teaching effectiveness, and meaning-making. This assignment creates cognitive and affective onramps to learning, while also improving clarity and transparency. The chapter discusses the current and future use of this TILTed assignment and its adaptation to other experiential learning contexts.

Through these authentic assessment approaches, these chapters demonstrate instructors' commitment and dedication to engaging their students in the complex processes of learning. Unlike more traditional forms of assessing student work, the content in this section highlights the ways through which students may demonstrate their learning through personally meaningful assignments.

CHAPTER 5

Backcasting

Engaging with Course Content via Future Planning

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Navigation Tools

What: Synthesis, Reflection & Metacognition
Where: STEM & Social Sciences

Case studies engage students in applying course content to real-world situations. Backcasting, which refers to defining a desired future outcome and identifying ways of achieving it, is a method of doing a case study that engages students in shaping their own perspectives on the future. This chapter explores the use of backcasting to engage students in future-oriented thinking within an introduction to sociology course at a community college. The assignment integrates Transparency in Learning and Teaching (TILT) principles to help students apply course readings to real-life situations, fostering critical thinking and ownership over future outcomes. The chapter discusses the importance of future-oriented teaching in preparing students for rapid social and technological changes, emphasizing the development of skills necessary for adapting to these changes. It also addresses the challenges and benefits of using backcasting and provides suggestions for adapting the backcasting assignment to other disciplines and contexts are provided, highlighting its versatility and potential for fostering student engagement and critical thinking across various fields.

Description of Teaching/Learning Context

A future focus is a major aspect of the courses I teach at my institution, which is a mid-size urban community college, where the majority of students plan to obtain an associate's degree with the intent of transferring to a university for a bachelor's. As a community college sociology instructor, I primarily teach Introduction to Sociology, which is a general education course. Because students from almost all majors are required to take six credits in social and behavioral sciences general education courses (of which Introduction to Sociology is one 3-credit option) in order to graduate with their associate degree, the students in this course represent a wide variety of majors, the vast majority of which are not sociology.

Because my institution is a community college, students enrolled in the institution (and in this course specifically) represent a wide variety of backgrounds. Many students are first generation and/or belong to groups historically underrepresented in higher education. In addition, students vary in their prior educational and work experiences, with some students enrolling in the college directly after high school, some non-traditional students enrolling later in life, and an increasing number of dual enrollment students, who concurrently attend high school and community college, enrolling. A number of students work full time while attending school. In order to support the diverse student population, Introduction to Sociology is available in both asynchronous online and hybrid modalities, and classes are small, with about 25–30 students enrolled in each section.

Because the TILT model is based on explaining to students the purpose of the learning activities and goals they will encounter in a course, this model is especially useful when engaging students in future-oriented projects. Many people are unfamiliar with logical futures thinking (i.e., making inferences based on data, as opposed to wishful thinking); therefore, making a future focus explicit in a course

or in a particular activity encourages students to explore a variety of possibilities for the future, as well as builds students' sense of ownership over the future (Pouru-Mikkola and Wilenius 2021). Furthermore, I elected to use the TILT model to guide students through this activity, in order to better engage the diverse student population. Because of the wide variety of majors and prior educational experiences that community college students bring to each class, the TILT framework serves to both make explicit learning goals and processes that may be more familiar to some students than to others, as well as to encourage students to connect course content to their own experiences and academic goals.

Research/Evidence That Informs This Approach

A "case study" refers broadly to including real-world information into an educational setting in order to have students improve their critical thinking skills, engage deeply with course content, and use course content to construct solutions (Puri 2022). Case studies effectively engage students in exploring specific examples that help them understand more abstract course content ("Using Case Studies to Teach," n.d.). Cases have been used in a variety of fields in order to encourage students to apply course content to real-life problems and issues (Montrosse-Moorhead, Ensminger, and Roseveare 2022). In particular, cases can allow students to make connections between research and practice.

Backcasting is a method of doing case studies. "Backcasting" refers to beginning a project by defining a desired future outcome, and following by considering who can be involved in making this outcome happen, and how (Bengston, Westphal, and Dockry 2020). A notable characteristic of backcasting is that it is active, encouraging students to acknowledge their own goals and to identify ways in which relevant stakeholders can be a part of achieving them. Backcasting can be contrasted with "forecasting," which refers to attempting to predict a likely outcome, often one that is not under humans' control (e.g., a weather forecast). Backcasting, being an active process, is used to shape our understanding of how human beings can create positive change.

People have a tendency to see the future as in terms of two options: maintaining the status quo or losing what they have accomplished to date (Inayatullah 2020). However, in a complex world of exponential technological growth, it is also possible to construct a vision of a more ideal future and work to achieve it. A complex global society requires students to not only be able to seriously consider the long-term future, but also to do so creatively and in collaboration with others (Pouru-Mikkola and Wilenius 2021). The backcasting method, with its central focus on goals, enables students to begin building these skills.

I developed the TILTed backcasting worksheet in order to help students move forward from a scarcity mindset and adopt an abundance mindset. An abundance mindset moves beyond just being concerned about problems and emphasizes solution building, in particular solutions based on reliable evidence and collaboration (Kizer and Hinueber 2023). This mindset is not the same as happiness, optimism, or a sense that things work themselves out; instead, it is about actively identifying ways of creating change.

Application of Research to Develop This Assignment

When looking at course titles in my discipline of sociology, I am often concerned about the fact that these titles frequently refer to the things that we don't want instead of those we do: Social Problems, Juvenile Delinquency, Social Inequality, and so on. This type of focus illustrates a scarcity mindset: the idea that resources, whether physical, intellectual, time, or anything else, will always be limited, and one person or group can only benefit at another's expense. A scarcity mindset fixates on problems, and it tends to be the default way people look at an issue (Inayatullah 2020).

I constructed the backcasting worksheet to encourage an abundance mindset in students, beginning with step one, which asks students to consider a goal. The worksheet continues to encourage students to consider multiple people and groups who can support the goal, as well as a variety of actions these people can take to do so. Furthermore,

because this TILTed backcasting worksheet leads students through a step-by-step process, it provides a structure, thus minimizing some of the anxieties about futures planning that have been acknowledged in the research. In addition, this worksheet enables students to share their own views, while also requiring them to use course content to support their views, thus encouraging students to get in the habit of using evidence to make a conclusion.

I first engaged students with a backcasting assignment many years ago. The primary challenge I encountered when beginning to use this tool was that students had a tendency to predict a negative scenario in step one of the template, as opposed to constructing a positive goal. This was my rationale for constructing the Goal Setting Worksheet, in order to emphasize the importance of goals for positive future change.

Another hurdle my students have experienced when using the backcasting worksheet is a tendency to use passive voice, which obscures or ignores who should take the actions that contribute to the goal. This was my motivation for constructing the stakeholder analysis worksheets, which require students to be specific about the living human beings who can take action. These exercises support my students in achieving one of the course learning outcomes for Introduction to Sociology, which is to identify how a variety of people can work together to create positive change.

TILTed Assignment

This template can be used for the instructor's choice topic. The instructor will tailor this assignment sheet to appropriate course-specific knowledge.

Purpose

After doing this assignment, you will be able to (1) Develop realistic goals for the future, based on research evidence, (2) acknowledge how a variety of stakeholders play a role in achieving a goal, and (3) build upon research evidence to articulate your own ideas for improvement and change.

Task

Complete the following prompts, using material from the required research articles for this unit to support your views.

Step 1: State your goal for the future (pertaining to the current unit in our course). State the target time frame for completion.

Step 2: List stakeholders (people and groups) who play a role in your goal. These can be stakeholders mentioned in the required research articles, and/or other stakeholders you think are relevant. Stakeholders must be alive; in other words, an entire organization (like a school or a company) is not a stakeholder, but it has stakeholders in it. This step should just be a list; you'll elaborate on what all these stakeholders should do in the sections that follow.

Step 3: Which stakeholders from your list do you think are most significant to accomplishing your goal, and why? What do you think these stakeholders can do between now and the year you put in step one to help accomplish the goal? Paraphrase and cite material from the required research articles that suggest ways in which these stakeholders can act in support of the goal.

Step 4: In this step, you'll consider the other stakeholders in your list. What do you think their roles should be between now and the year you put in step 1 in helping to achieve your goal? Again, paraphrase and cite material from the required research articles that suggest ways in which these stakeholders can act in support of the goal.

Step 5: What are some steps you think people should take immediately in order to get started on this goal? Make sure to articulate who should take these steps.

Criteria

How you will be graded:

- 20 points: Responding to all portions of the assignment prompt
- 20 points: Using specific details from the required reading to support your response
- 20 points: Paraphrasing the majority of the information from the reading, as opposed to quoting word for word

- 20 points: Including in-text citations
- 20 points: Meeting the length requirement
- Total: 100 points

Critical Reflection of the TILTed Assignment

In addition to the challenges that have come along with engaging students in backcasting, there have also been benefits. The most important of these has been the opportunity to engage students in making connections between assigned research articles. In the final week's course wrap-up assignment, I have requested that students complete the backcasting worksheet using multiple course reading materials that pertain to a goal of their own choosing (i.e., students have the opportunity to pick the topic, from any issue explored through the semester). In using multiple course reading materials to consider how to achieve the goal, students accomplish another course learning outcome in Introduction to Sociology, which is to make connections between different social problems or issues. For example, one student in a previous semester used both a research article about sustainable transportation and a research article about crime prevention to consider ways of improving livability in their neighborhood in the coming decades.

As a sociology instructor, I have used the backcasting worksheet as a way of having students apply assigned readings to real-life situations. I have used backcasting in a variety of course contexts, ranging from short homework assignments, to lengthy research papers, to in-class brainstorming among groups of students. In a research project I conducted about teaching students about the future, survey data from students showed that backcasting enabled students to acknowledge a variety of potential future outcomes, as well as to develop a sense of ownership over the future (Davidson 2017).

I use this TILTed assignment because future-oriented teaching is one of the foundational aspects of the Introduction to Sociology course. It is important for me to introduce students to future-oriented thinking because the use of automation technologies is predicted to replace a variety of tasks currently done by humans, across a wide range of occupations

(Frey and Osborne 2017). Rather than being a risk to employment, however, this automation can be used as an opportunity to broaden the scope of existing occupations, as well as to create a space for humans to meet currently unmet needs via creating new types of work (Bessen et al. 2020). The types of work humans will be doing in the future will require more creativity and cooperation, and less routine data entry (Frey and Osborne 2017); as a result, it is essential that while in college, students learn skills that allow them to adapt to rapid social and technological changes. My course, particularly this assignment, supports students in having an evidence-based perspective on rapid change.

Modifying, Applying, or Adapting This Assignment for Other Contexts

Instructors can introduce case studies in a wide variety of ways (Vanderbilt Center for Teaching, n.d.). Instructors may want to find and use pre-written cases in their course. In that case, there are a variety of open access repositories in which instructors can search for cases relevant to their discipline or to a particular course topic; for example, Merlot and OER Commons.

Instructors can also construct their own cases when presenting them for a backcasting exercise. Depending on factors such as the course learning goals, students' prior knowledge of a topic, and the length of the assignment (Vanderbilt Center for Teaching, n.d.), instructors may engage students with relevant material in a variety of ways, such as lecturing, showing a news video, or having students conduct their own research.

Furthermore, the backcasting worksheet is set up in such a way that the topic is not mentioned on the sheet itself. This enables each instructor to tailor the worksheet to their own course context. The worksheet specifies that students should reference the required journal articles that were assigned for the unit; however, if that type of material does not apply to a particular situation, instructors can edit this backcasting worksheet to reflect other types of course material (textbooks, lecture notes, etc.) is a part of the case study at hand.

In addition, instructors can add to or edit the five steps in this backcasting template in the way that makes the most sense for their own course context. As a sociology instructor, I often discuss long-term social change with my students; however, other instructors may need to address shorter-term-future time frames (weeks or months). In these cases, it may make sense to add sections or subsections that allow students to fill in particular time checkpoints. These could show day-by-day, week-by-week, or month-by-month task lists that allow stakeholders to meet a deadline. Instructors may also insert particular types of course content into the template before providing it to students, in order to ensure that students address specific things in their project (e.g., filling in stakeholders students are required to discuss, or course materials that must be referenced in particular sections).

Modifying the TILTed assignment sheet can support instructors in tailoring backcasting to their own disciplinary learning goals. For example, a history instructor may replace step one with a historical event (e.g., a war or a revolution). Then, they can lead students through identifying historical figures, governmental decisions, and prior events in history that ultimately led up to this historical event. This would be a creative way to adapt backcasting to thinking about the past. Or, an instructor in the health sciences could set a goal pertaining to achieving a particular public health outcome (e.g., reducing the incidence of a particular disease). Such an instructor could add sections to the TILTed assignment sheet that ask students to provide a rebuttal to misinformation that has been heard in the media about the disease, prior to addressing ways that community members, government leaders, and students themselves can learn the facts and reduce risk.

References

Bengston, David N., Lynne M. Westphal, and Michael J. Dockry. 2020. "Back from the Future: The Backcasting Wheel for Mapping a Pathway to a Preferred Future." *World Futures Review* 12 (3): 270–278.

Boston University Center for Teaching & Learning. n.d. "Using Case Studies to Teach." Accessed February 20, 2026. https://www.bu.edu/ctl/teaching-resources/using-case-studies-to-teach/.

Davidson, Skylar. 2017. "Futurology in the College Classroom." *InSight: A Journal of Scholarly Teaching* 12: 51–63.

Frey, Carl Benedikt, and Michael A. Osborne. 2017. "The Future of Employment: How Susceptible Are Jobs to Computerization?" *Technological Forecasting and Social Change* 114: 254–280. https://doi.org/10.1016/j.techfore.2016.08.019.

Inayatullah, Sohail. 2020. "A Castle Surrounded by Hungry Wolves: Toward a Stage Theory of the Uses of the Future." *World Futures Review* 12 (1): 40–54. https://doi.org/10.1177/1946756719878792.

Kizer, Megan, and Jesse Hinueber. 2023. "When Confronting Poverty, Think Abundance, Not Scarcity." *Educational Leadership* 80 (4): 47–51. https://www.ascd.org/el/articles/when-confronting-poverty-think-abundance-not-scarcity.

Montrosse-Moorhead, Bianca, David C. Ensminger, and Christine Roseveare. 2022. "How Do We Teach and Learn with Cases?" *New Directions for Evaluation* 172: 53–67. https://doi.org/10.1002/ev.20483.

Pouru-Mikkola, Laura, and Markku Wilenius. 2021. "Building Individual Futures Capacity Through Transformative Futures Learning." *Futures* 132. https://doi.org/10.1016/j.futures.2021.102804.

Puri, Sandeep. 2022. "Effective Learning Through the Case Method." *Innovations in Education and Teaching International* 59 (2): 161–171. https://doi.org/10.1080/14703297.2020.1811133.

Vanderbilt Center for Teaching. n.d. "Case Studies." Accessed February 20, 2026. https://cft.vanderbilt.edu/guides-sub-pages/case-studies/.

CHAPTER 6

Re-TILTing the Scale

Use of Cross-Institution Simulation-Based Learning

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Navigation Tools

What: Collaborative, Dialogic & Feedback-Oriented Practices
Where: Interdisciplinary & Integrative

Disclaimer: The views expressed in this article, book, or presentation are those of the author and do not necessarily reflect the official policy or position of the United States Air Force Academy, the Air Force, the Department of Defense, or the U.S. Government. PA#: USAFA-DF-2023-681

This chapter focuses on the student learning benefits of simulation-based learning that leverages cross-institutional simulation to enhance realism in a role-playing negotiation simulation between undergraduate students at four universities. Matching students across institutions increases simulation realism by removing established peer relationships and mutual or shared knowledge of course concepts. Cross-institution simulation enhances collaborative learning experience by expanding diversity of backgrounds, increasing relationship and communication uncertainty, and introducing confusion and complexity to the environment. Added confusion and complexity is mitigated by transparency and structure

in the assignment. When combined with a flipped classroom format, post-simulation formative assessment and feedback, and student-led self-reflection, the use of cross-institution simulation-based learning is a powerful and inclusive practice that deepens student learning and transfer of critical thinking and communication skills beyond the simulation context.

Description of Teaching/Learning Context

The U.S. Air Force Academy is a unique learning context different from most national and international undergraduate institutions of higher education. It is a military service academy, meaning that enrollment is limited to students nominated from across the country's congressional districts. Undergraduates embark on a four-year, in-resident immersive experience consisting of a robust liberal arts education, military and physical training, and a five-year obligation to serve in the armed forces. Despite these context differences, praxis-based skill development exists in widely varying educational and disciplinary contexts from undergraduate negotiation to graduate-level professional certifications.

Learning new skills takes practice. Thus, in our Principles of Negotiations course at the U.S. Air Force Academy, our students get lots of it. Our course serves as an introduction to negotiation skills learned through an iterative learn—practice—reflect model of at least thirteen unique negotiation role-playing simulations throughout the semester. The course is built on providing frequent and varying low-stakes opportunities to negotiate and reflect on performance. Students learn a concept through pre-class self-guided study, in-class negotiation with each other, and then post-class reflection on how it went. After students have the opportunity for praxis to apply new knowledge, the instructors then debrief the class, providing formative assessment in a loose flipped classroom structure.

The learning context is incomplete without first acknowledging the privilege that our students are generally motivated to improve their negotiations skills. We know this from course feedback and because they choose the course among many other options to satisfy advanced

core requirements. The course is taken primarily by seniors across many academic disciplines in our military undergraduate program. Between 30–40 percent of all cadets (a student body of roughly 4,000 students) take the course during their four-year undergraduate experience and it has historically been the most over-enrolled and popular course at the Academy.

As instructors, we want to ensure our students' initial enthusiasm is maintained throughout the full semester to maximize its benefits. To this end, we strive to offer a wide variety of actual and potential situations in which students can experiment with strategies they learn. They can also analyze the response from role-players and their own substantive results. Our class sizes range from 12–18 students, which means they will typically negotiate with every other member of the class during the course of the semester.

Students are assessed based on their preparation, implementation of course concepts through simulation, and quality of post-simulation reflections. Course concepts are the use of the seven elements of principled negotiation from Roger Fisher, William Ury, and Bruce Patton's (2011) Getting to Yes. Our assessment model is common for many simulation- and praxis-based skill-building courses and contexts.

As the opportunities for practice increase in the course, unfortunately so does the predictability of the exercises and the role players. Students get to know each other and the classroom community. They start to shy away from conflict, or praxis that makes the experience difficult for the other person (Zainurrahman 2021). They may also anticipate what their fellow student simulation-based learning (SBL) role players will do based on what they have learned in the course, reducing the simulation's realism and benefits. Unfortunately, real life is chock-full of tough negotiators. SBL depends on mimicking real life; reduced realism negatively impacts opportunities for learning.

Collaborating across institutions is an inclusive and effective way to infuse realism in simulation-based learning (SBL). We match our students with counterparts from other undergraduate programs and law schools (in this case West Point, the U.S. Coast Guard Academy, Southern

Methodist University, and Elon Law School). The cross-institution assignment infuses realism because it introduces additional variables such as cultural differences, communication challenges, and a spirit of competition (Esler et al. 2016). Using cross-institution SBL, especially when implemented with transparency as to purpose, task, and criteria (the TILTed pedagogy framework), is an especially effective way to renew SBL realism and achieve learning objectives of building negotiation competency (Jones 2018).

Research/Evidence That Informs This Approach

SBL activities enable students to detect gaps in their comprehension of concepts and correct them before applying them in real-life circumstances (Salas, Wildman, and Piccolo 2009). SBL creates a setting that mimics real-world tasks and situations, allowing students to test their knowledge and apply principles. Simulation is "a technique that creates a situation or environment" that allows students "to experience a representation of a real event for the purpose of practice, learning, evaluation, testing, or to gain understanding" (Lioce et al. 2020, 44). An SBL activity is defined as "an array of structured activities that represent actual or potential situations in education and practice…that allow participants to develop or enhance their knowledge, skills, and attitudes, or to analyze and respond to realistic situations in a simulated environment" (Lioce et al. 2020, 2).

The power of SBL lies in providing learners practical insights into a subject through a realistic, immersive experience. It is a powerful training method used by doctors, pilots, surgeons, and other professionals to swiftly gain expertise in addressing challenging situations, regardless of their line of work. Simulation refers to mimicking a real-life process to deliver a realistic experience in a controlled setting. It is a place where students can learn from mistakes without causing harm. SBL allows students to try out various scenarios and learn what works and what does not. Learning is deepened and reinforced through a post-simulation instructor-led "debrief" that includes formative assessment and feedback as well as student self-reflection (Kapur et al. 2022).

SBL is beneficial for student learning because it mirrors real-life context but supplies low-stakes opportunities for the application of knowledge. Student learning through SBL is enhanced with preparation and critical reflective practice (Morris 2020). SBL paired with reflective practice promotes metacognition and students' ability to identify and understand gaps in their learning approaches (Wessels, du Plessis, du Plessis, and Bouman 2019). An important component of critical reflection for praxis-oriented learning is how a student's practice affects others involved in the praxis (Tiessen 2018). Thus, it is important for the SBL to be realistic, to have genuine role-players, and for students to conduct critical reflection.

Application of Research to Develop This Assignment

The simulations we use throughout our course are conducted almost exclusively with fellow students as role-players. Cross-institutional SBL utilizes students from other colleges and universities as role-players. Thus, our students are paired with students they have never met and for whom they have little idea what their counterpart has learned or what they are applying in the simulation.

Engaging with other institutions brings together diverse learners and enhances the collaborative learning experience (Nerantzi 2012). Learners from West Point Military Academy, United States Coast Guard Academy, Southern Methodist University, and Elon Law make the experience multi-disciplinary and bring more diverse backgrounds to the simulation, therefore enriching "the exchange of ideas and co-construction of knowledge." The additional uncertainty of the exercise enhances student learning by elucidating the need for more transparency of ground rules in the conversation, a particularly important teaching point for the negotiations course. Finally, the email and Zoom communication platforms introduce confusion and complexity that students must sort through, which adds realism to the exercise and adds to learning (Nerantzi 2012).

The nature of the course and the assignment are high-structure (Eddy and Hogan 2014). Students have graded preparatory assignments and graded reading questions (Sathy and Hogan 2022). Frequent SBL requires high in-class engagement. Student reflections after each simulation are also graded. High-structure courses in which the work is not optional increase student performance (Casper, Eddy, and Freeman 2019). High structure can be uncomfortable for students, and a best practice to reap its benefits are to be transparent by frequently explaining "the reasoning behind your teaching choices" (Sathy and Hogan 2022).

Our cross-institutional assignment is no exception. We are transparent about why we engage them with a peer from another institution ("because it is more like real life, which builds your competency"). We are transparent about the criteria for success (a detailed rubric is included with the assignment). We are transparent about what success looks like (achieving their role's interests through good communication and a better relationship with the counterpart than they started with). This is the purpose-task-criteria framework of TILTed pedagogy (Winkelmes, Boye, and Tapp 2023).

The cross-institution exercise utilizes primary aspects of the transparency framework and the transparent assignment template. Namely, the written assignment explicitly includes the purpose of the assignment (what skills are practiced and what knowledge is gained), the task (what to do and how to do it), and criteria (a checklist and rubric for self-evaluation) (Gambill 2016). The assignment explicitly describes the specific negotiations principles expected to be demonstrated through use of the seven elements of principle-based negotiation. These same substantive elements are reflected in the attached grading rubric.

The assignment also prescribes mandatory and recommended timelines of communication in the time-constrained simulation. Students are only allotted one week to accomplish the negotiation. Finally, students are expected, through the use of specific prompting, to explain through self-reflection and meta-analysis how they employed (or could have better employed) the seven elements in their post-negotiation written analysis.

This structure assures an inclusive and equitable assignment that supplies rich insights into our students' application of knowledge through praxis. It is high-structure and provides a transcript

illuminating the students' choices throughout the simulation. For SBL courses, it can be difficult to supply individualized, formative assessment while simulations run simultaneously. This assignment allows an asynchronous experience for the student and a method for the instructor to read every word of the students' email and Zoom conversations, as well as the student's own self-reflection of their performance. For these reasons, the assignment is a wonderful "gate check" (or progress indicator) to gauge learning for both the student and the instructor.

TILTed Assignment

The details of the Email & Zoom Negotiation Exercise Soc/Sci 483-1 are outlined below.

Purpose

For this exercise, you are given a problem to negotiate and resolve exclusively through an unlimited exchange of emails and via Zoom video chat that can be no longer than ten min. There are two parties to this problem, Manager of Live 8 Galleries and Manager of the Internet Department.

The purpose of this assignment is to match you with a counterpart from another institution in order to infuse greater realism into the simulation, which enhances student learning. The communication constraints to email and limited Zoom are designed to build your proficiency with asynchronous communication within time constraints. Email and video conferencing are increasingly used for communication in negotiations and in your future role as military leaders. Finally, the written reflection promotes metacognition and the likelihood of long-term lessons learned.

Task

Your negotiation counterpart's contact information has been posted on Teams and Blackboard. Please negotiate with the person in the same row on the spreadsheet. Note that the Internet Department representative must send the first email. Plan for the negotiation by preparing a USAFA Negotiation Prep Sheet (provided on Blackboard).

Means of Communication

All substantive negotiation between the parties must be email and via Zoom only (no other phone calls, texts, chat rooms, video chats, FaceTime, Instant Messages, SIC drops, personal conversations, etc.). Please remember to limit the Zoom call to a maximum of ten minutes. You must save all emails and record and auto-transcribe the Zoom call (instructions attached). Include all correspondence in the transcript, Appendix B. Instructions on how to record and automatically transcribe your Zoom call is included below. Failure to follow these instructions can result in losing the substance of your negotiation and receiving a zero on the assignment. You are responsible for testing your recording and transcription to make sure it is working properly. The quality of the transcript is a part of your grade; therefore, you should ensure you submit a sufficient product.

Communication Timelines

The Internet Department manager will send the first email within 24 hours of the start time of the negotiation period, but no earlier. A failure of the Internet Department manager to initiate the negotiation within 24 hours of the start time noted above will result in a 10 percent grade penalty. The Live 8 Gallery then has 24 hours to respond. If Live 8 Gallery fails to respond within 24 hours from receiving the Internet Department's email, they will receive a 10 percent grade penalty. After this point, it is encouraged to avoid 24-hour lapses between communications. Additionally, if you fail to communicate with your counterpart within 24 hours, please provide an explanation in your written report. The negotiation ends at the date and time noted above. Communication made after this time will not be considered.

Stay in Role

All emails you send and receive should be in role, meaning your email as the manager of the Internet Department, not as you in real life. Stay in role starting with your first contact until the dispute is settled or you

reach a final impasse. *Save all emails* (sent and received) relating to this negotiation for purposes of your transcript and analysis.

- Individual Effort Only, Full Participation Expected. This is not a group negotiation. Do not consult with other cadets/students about your strategy or progress. Full participation in this exercise is expected as it impacts not only your reputation but that of USAFA.

Submission Documents (Submit as a PDF Document)

- The attached cover sheet with highlighted areas completed
- Appendix A: USAFA Negotiation Preflight Prep Sheet
- Appendix B: Transcript i. All emails (in chronological order—please keep all emails in one thread and print that thread) ii. Zoom video chat transcript (with names and time stamps, instructions below)
- Appendix C: Your reflection and analysis of the negotiation with word count

Criteria

See Email/Zoom Negotiation Exercise Rubric on the book site.

Critical Reflection of the TILTed Assignment

From an instructor's assessment of learning perspective, our cross-institutional simulation remains the most valuable exercise we use. It supplies our cross-disciplinary instructors (from the disciplines of law, management, and behavioral sciences) an opportunity to assess every choice our students make throughout the course of a negotiation because the structure of the assignment allows for recording all communication between the parties. The timing of the assignment falls at the midway point of the semester, which gives an opportunity to make adjustments to address deficiencies or highlight strengths. It is also the least instructor-reliant and most realistic simulation from a student behavioral perspective because with no prior relationship between the students, and no instructor involvement, it mimics the unpredictability of real-life interactions.

We have refined the assignment over the course of the decade we have collectively used it. Collaborating institutions have changed,

introducing greater cross-disciplinary insights. We have adapted the subject matter of the negotiation to make it more realistic (changing it from a domain-name negotiation into a social media handle), albeit the current substance of negotiating over an Instagram handle is vulnerable to changing social media trends. We have added a Zoom transcript component, showcasing students' skills outside of purely written communication and allowing for synchronous oral communication. These evolutions have allowed us to maintain the exercise's relevance to students lives and increased inclusivity by providing multiple modalities.

Anecdotally, students often express frustration during the negotiation period, which we believe is a demonstration of the enhanced realism of the simulation. Students might be frustrated by their counterpart's response delays, or lack of implementing substantive (principled negotiation) course concepts. Despite these frustrations, which are to be expected in a more realistic simulation, students also express at the end of the course a high level of appreciation for the assignment because they understand why it is necessary and valuable for their learning and future lives. At the end of the course, we ask students to identify the "best" (favorite or most impactful) simulation and this cross-institutional simulation consistently ranks at the top.

As a logistical matter, the assignment presents several challenges for successful implementation. First, it requires coordination among multiple professors and teaching aides across multiple institutions, and an even matching in numbers of students. The planning time required to identify willing institutions, coordinate timing of the assignment, and match students is not trivial. Second, it requires overcoming technical challenges such as access to Zoom and navigating potential firewalls across networks (which might present equity challenges in contexts where not all students have ready access to technology). Third, the assignment can cause some amount of student frustration when the counterpart is not behaving in a way that is consistent with what the student is learning in the course. These concerns are greatly alleviated by using the transparent assignment template and explaining that a

certain amount of "fog and friction" may be experienced more akin to real-life problem-solving. The frustration presents an opportunity to reiterate the purpose of the assignment to enhance student learning through enhanced realism, the very reason for matching them with someone outside their established social network and classroom community.

Modifying, Adapting, or Applying This Assignment for Other Contexts

This chapter focuses on the teaching and learning context of realistic simulation-based learning (SBL), common within highly technical and specialized professional educational programs such as aviation and medicine, but not as common in less specialized higher education. The benefits of realistic simulation-based learning are not confined to highly specialized professional fields but can also be realized in broader, more generalized contexts in higher education. In this case, we employ realistic SBL using cross-institutional simulation to achieve benefits in learning negotiations skills. These negotiation skills also transfer to improve students' critical thinking, oral communication, and interpersonal relationship skills (Jones 2018).

The specific benefits of cross-institutionalizing the role-playing can be utilized in any course that uses SBL or role play more broadly. An additional modification that would enhance assignment transparency would be to supply a model transcript or video with annotations. However, this modification runs the risk of students using the same language as the model answer to start the simulation, rather than thinking critically and embracing their own authentic style.

One adaptation of the assignment might be to match students not across institutions but across instructors at one institution. The trade-off might be some diminished realism, but at schools with very high enrollment or large classroom sizes, there is likely greater diversity among students and less likelihood that the students know or have previously interacted with each other, thus achieving the same characteristics that make the assignment realistic. Of course, the substance each student has learned in the course up to that point would be high. Thus, an additional modification might be to pair students across interdisciplinary programs such as business and behavioral sciences, or law and psychology.

References

Casper, Anne M., Sarah L. Eddy, and Scott Freeman. 2019. "True Grit: Passion and Persistence Make an Innovative Course Design Work." *PLOS Biology* 17 (7): e3000359. https://doi.org/10.1371/journal.pbio.3000359.

Eddy, Sarah L., and Kelly A. Hogan. 2014. "Getting under the Hood: How and for Whom Does Increasing Course Structure Work?" *CBE—Life Sciences Education* 13 (3): 453–468. https://doi.org/10.1187/cbe.14-03-0050.

Esler, Karen Joan, L. Downsborough, D. J. Roux, J. Blignaut, S. Milton, D. Le Maitre, and Martinus Petrus De Wit. 2016. "Interdisciplinary and Multi-Institutional Higher Learning: Reflecting on a South African Case Study Investigating Complex and Dynamic Environmental Challenges." *Current Opinion in Environmental Sustainability* 19: 76–86. https://doi.org/10.1016/j.cosust.2015.12.002.

Fisher, Roger, William L. Ury, and Bruce Patton. 2011. *Getting to Yes: Negotiating Agreement without Giving In*. Penguin.

Gambill, Sandy. 2016. "Transparent Assignments." *Inclusive Teaching*, November 30, 2016. https://reinertcenter.com/2016/11/30/transparent-assignments.

Jones, Alex. 2018. "The Effect of Negotiation Role-Play on Critical Thinking Skills." *International Journal of Scientific & Engineering Research* 9 (6): 1294–1300.

Kapur, Manu, John Hattie, Irina Grossman, and Tanmay Sinha. 2022. "Fail, Flip, Fix, and Feed—Rethinking Flipped Learning: A Review of Meta-Analyses and a Subsequent Meta-Analysis." *Frontiers in Education* 7: 956416. https://doi.org/10.3389/feduc.2022.956416.

Lioce, Lou, ed., and Jeffrey Lopreiato, founding ed., with David Downing, Teresa P. Chang, Jennifer M. Robertson, Michael Anderson, Daniel A. Diaz, and Amy E. Spain, assoc. eds., and the Terminology and Concepts Working Group. 2020. *Healthcare Simulation Dictionary*. 2nd ed. Agency for Healthcare Research and Quality. https://doi.org/10.23970/simulationv2.

Morris, Thomas Howard. 2020. "Experiential Learning—A Systematic Review and Revision of Kolb's Model." *Interactive Learning Environments* 28 (8): 1064–1077. https://doi.org/10.1080/10494820.2019.1570279.

Nerantzi, Chrissi. 2012. "A Case of Problem-Based Learning for Cross-Institutional Collaboration." Electronic Journal of e-Learning 10 (3): 277–285.

Salas, Eduardo, Jessica L. Wildman, and Ronald F. Piccolo. 2009. "Using Simulation-Based Training to Enhance Management Education." *Academy of Management Learning & Education* 8 (4): 559–573. https://doi.org/10.5465/amle.8.4.zqr559.

Sathy, Viji, and Kelly A. Hogan. 2022. Inclusive Teaching: Strategies for Promoting Equity in the College Classroom. West Virginia University Press.

Tiessen, Rebecca. 2018. "Improving Student Reflection in Experiential Learning Reports in Post-Secondary Institutions." *Journal of Education and Learning* 7 (3): 1–10. https://doi.org/10.5539/jel.v7n3p1.

Wessels, Quenton, Anneli du Plessis, Adéle du Plessis, and Denise Bouman. 2019. "The Use of Reflective Practice to Promote Pharmacy Students' Metacognition in a Foundation Anatomy Course." *Anatomy Journal of Africa* 8 (1): 1474–1481.

Winkelmes, Mary-Ann, Allison Boye, and Suzanne Tapp, eds. 2023. *Transparent Design in Higher Education Teaching and Leadership: A Guide to Implementing the Transparency Framework Institution-Wide to Improve Learning and Retention*. Taylor & Francis.

Zainurrahman. 2021. "The Structure of Peer-Feedback: A Proposal to a Systematic Peer-Feedback Implementation." *Langua: Journal of Linguistics, Literature, and Language Education* 4 (1): 14–34.

CHAPTER 7

Becoming Part of the Scientific Community via Peer Review

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Navigation Tools

What: Collaborative, Dialogic & Feedback-Oriented Practices
Where: STEM & Social Sciences

A common summative assessment in social science research methodology courses is a student research paper. Instructors frequently implement peer review prior to the assignment deadline, but students and instructors alike are often less than satisfied with the results. This chapter provides readers with a more structured peer review process that models the academic publishing process, giving students the opportunity to engage in academic discourse with other novices in a low-stakes environment. This chapter will discuss how the TILTed peer review assignment is based in the peer review pedagogical literature as well as the literature on academic discourse socialization. The peer review assignment is easily adaptable to any discipline requiring a research paper, not just social science.

Description of Teaching/Learning Context

While my primary role is an academic developer, it is important to me to remain in the classroom on a regular basis. The way I do this is by serving as an adjunct instructor outside of my primary institution,

allowing me flexibility in taking on the additional work. It is from this role that I share the following peer review assignment. The university context for the course of focus for this chapter is a mid-size (i.e., ~8,000 students), public university in the midwestern region of the United States. Students can earn a bachelor's degree from four schools within the university (Liberal Arts; Science, Engineering, and Education; Business; and Nursing and Health Professions). Within Liberal Arts, students may choose among about thirty majors, including psychology.

A common degree requirement in undergraduate psychology programs regardless of institution is both a research methods and statistics course. At the institution described above, these two courses are integrated into one course that spans two semesters rather than as two independent courses. As a degree requirement for all psychology majors, there are multiple sections of the course offered by multiple instructors each semester. The class size is small (less than twenty students) and while a common textbook and final assessment (an APA style research paper) is used across sections, all other aspects are up to the instructor.

I chose to teach the course in a hybrid modality with asynchronous virtual class modules within the learning management system (LMS), interspersed with synchronous on-campus class meetings. On-campus class meetings consisted of an evening class block of three hours used as workshop time. This workshop time included guided group activities, consultations with the instructor, and demonstrations to support students in applying asynchronous material to their research project.

Student research projects that culminate in a paper or class presentation are assigned with the goal of allowing students to experience the researcher role. While we have been successful in developing students' ability to develop research questions and design experiments, we have been less successful developing their ability to follow this through to the end, communicating their process and findings in a scholarly venue. This contributes to the lack of awareness students have about the products of research being seen as conversation (Parks 2022).

An additional challenge with assigning research papers is related to the iterative nature of the writing process and demands on the instructor's time to provide formative feedback in a timely manner. This is where many instructors implement a peer review activity in class, but often students and/or instructor are left displeased with the process and/or the feedback (Stellmack et al. 2012).

How can an instructor enhance the quality of the research project experience for students in a way that continues to meet the course goals and learning objectives? In reflecting on this question myself, I identified a desire to not just have students perform research, but to understand the research article (and paper) more holistically; to view it as part of a conversation rather than as a static and infallible prose, including providing more transparency to the peer review process (Hyland 2005). In thinking through the best approach to help students meet the learning goals, I primarily drew on the work around academic discourse socialization and peer review.

Research/Evidence That Informs This Approach

While there is a vast literature base for peer review in undergraduate student writing, the inclusion of disciplinary discourse socialization to this work provides deeper support for this pedagogical approach.

Peer Review

Peer review occupies a firm foundation in disciplinary spaces as well as more applied pedagogical spaces with instructors choosing this approach for a multitude of reasons (Mirick 2020; Cook et al. 2021; Riley and Spurling 2023). Students report putting more effort into assignments that will be viewed by peers than assignments only seen by the instructor, thus peer review should lead to a better final product (Cathey 2007; Parks 2022; Tyndall and Baker Powell 2023). Viewing peers' work allows students to self-assess their own work from a broader perspective, identifying gaps in their arguments or organization (Huisman et al. 2019; Parks 2022).

Despite the benefits of peer review, without guidance from the instructor, students tend to focus on surface level editing issues such

as sentence-level or global style issues (Zhang, Yu, and Yuan 2020; Hoogeveen and van Gelderen 2013). The peer review process can be improved when students are provided with qualitative reviews from three or more peers trained on the review criteria (Huisman et al. 2019) and given practice applying the review criteria to example work (Yalch, Vitale, and Ford 2019).

Disciplinary Discourse Socialization

Socialization is the term given to the process through which we become members of a given community; adopting the values, skills, attitudes, norms, and knowledge of the community (Gardner 2010). Applying this to the academic community, socialization researchers examine how novices learn to think and communicate as academics (Gardner 2010; Kobayashi, Zappa-Hollman, and Duff 2017). Much of academic communication occurs within the discipline, resulting in many academic communities within an institution, across types of institutions, or disciplines. Applying a disciplinary discourse lens to socialization, academics value the "diversity of subject-specific literacies and research practices across different discipline[s]…[and] recognize the unique linguistic characteristics, discursive expectations, and rhetorical conventions that characterize the discourse community"(Liu, Yuan, and Du 2023, 1). A primary way in which we engage in this disciplinary discourse is through academic writing using our disciplinary language norms, research practices, and cited scholars (Hands and Tucker 2022; Liu, Yuan, and Du 2023; Chick et al. 2021).

Application of Research to Develop This Assignment

Reflecting on my goals for the student research paper along with the literature on peer review and disciplinary discourse socialization I wondered if formalizing the peer review piece of the assignment could serve as a mechanism for deeper learning rather than simply as an accountability tool to keep students on time and encourage iterative writing. As professional academics we engage in discourse regularly

through disciplinary conferences and peer reviewed writing. We should be able to scaffold this experience to the student level by making the connection between peer reviewing each other's work with the peer review the scientific community undergoes to produce the articles they've been reading all semester.

The TILTed assignment discussed in this chapter is the culmination of multiple, smaller scaffolded opportunities to learn about and engage in review. Students choose a peer reviewed published article to read each week implementing the course content for that week. They then post an annotated bibliography on the discussion board of the LMS and are asked to comment "I like… I wonder…" on peers' posts. Prior to the peer review assignment, we also conduct an article critique in small groups with a large group debrief to provide practice peer reviewing. These activities allow students to enter the peer review assignment with focused experience critiquing research and comfort having these types of conversations with their peers (Brammer and Rees 2007).

The TILTed peer review assignment is conducted in groups of 3, resulting in 2 reviews per draft. Student groups are created in the LMS where group members upload their paper draft. This format allows students to not only comment on each other's draft, but to have asynchronous discussions within the group space.

Students are provided a modified version of Gottfried, Vosmik, and Johnson's (2009) analytical rubric for evaluating a psychology research report. This comprehensive rubric uses the sections of a research paper as criteria with advanced, effective/developing, less effective/introductory, and poor as quality anchors. Each of the cells includes a description such as "abstract is missing essential information from two paper sections or is significantly over the word limit" for the cell intersecting abstract and less effective/introductory (Gottfried, Vosmik, and Johnson 2009, 13). The rubric is modified so that students only receive the criteria they are to provide feedback on as well as the quality anchors I expect at that stage. For example, during the peer review of the research proposal, the advanced anchor is not included and only the section's introduction, methodology, and references are included.

This modified rubric is used by students to provide both a quality judgement on each criterion as well as comments explaining this judgement. In addition to the rubric, students are to provide comments throughout the draft from the lens of a critical friend (Tyndall and Baker Powell 2023). This is done asynchronously using word reviewing tools. Following the asynchronous review, student groups spend time in a synchronous class session discussing this feedback and asking clarifying questions. Any sections requiring improvement by a majority of the class are addressed by the instructor during this time as well.

TILTed Assignment

Below are the details of the peer review assignment.

Purpose

The purpose of this assignment is two-fold. First, it will allow you to experience what it is like to serve as a peer reviewer in the publication process. As we've discussed, published articles undergo a blind peer review and revision cycle before being accepted by a journal. To experience what this process is like, you will review a peer's draft and provide formative feedback to help them improve their final draft before submitting it to me. Second, you will receive feedback on your own work, allowing you to revise your work before submitting to me.

Task

Follow these steps:

- Using the group tools in the LMS, share your results and discussion draft with your group by [*insert deadline*].
- Read your partner's draft. Use the New Comment tool under the Review heading in Word to provide in-text feedback. Save your comments as a new file.
- Complete the accompanying feedback worksheet by placing an X in the appropriate cell of the table. Refer to the full APA

rubric in the Information tab on the LMS for criteria for each cell. Answer the questions below the rubric and save this completed file.
- Using the reviewing tools in the LMS share this worksheet and the draft with your comments with the author.
- Submit this worksheet to me in the assignment drop box.

Criteria

Your peer review of your classmate's paper is worth 50 points. This assignment focuses on the review itself; your review of someone else's paper. This assignment is graded pass fail on the following criteria:

- Completed the rubric for both peers assigned
- Provided justification for each score given on the rubric
- Provided "I like…" and "I wonder…" comments throughout the manuscript
- Actively participated in the group discussion of the reviews

Critical Reflection of the TILTed Assignment

While I have regularly utilized peer review in my courses, I sheepishly admit it was not the most intentional or effective until I went to the literature and created this TILTed assignment. By thinking about peer review holistically across the span of the course as an opportunity for deeper learning rather than as an accountability mechanism, this assignment resulted in the best peer review experience I've encountered as an instructor. The final products were stronger than in courses before I implemented this approach and the quality of peer reviews were more helpful for students, resulting in them viewing this as a worthwhile activity rather than busy work. I suspect it is due to changing the narrative from simply a one-off peer review activity to an ongoing scholarly conversation with peer review being one aspect.

Not only did I increase transparency around why I ask students to engage in peer review (i.e., modeling the scientific publication process), but we practiced critically examining published articles each week and practiced applying the peer review rubric to published work. In addition to implementing these best practices for peer review from the literature

on transparency, these activities allowed students to build rapport with one another, increasing trust and confidence in engaging in conversations as critical friends (Brammer and Rees 2007).

Modifying, Adapting, or Applying This Assignment for Other Contexts

This assignment can be modified for use in a number of other disciplines, modalities, or learning goals. Any course that includes an iterative writing component could either update the rubric to include the disciplinary standards for publishing in one's field or a rubric may already exist for your discipline that could be modified. The peer review process could be modified to occur completely asynchronously, synchronously digitally, or synchronously on campus using the technology tools available to your campus.

When considering peer review with graduate students, the assignment can be applied as-is to student work, but could also be incorporated into activities teaching graduate students to serve as peer reviewers for journals. In this instance, it may be possible to work with a journal in your discipline to conduct mentored group reviews of actual submissions (Mårtensson et al. 2023).

An adaptation I am considering applying in future courses is to combine peer review and disciplinary discourse with information literacy to encourage students to apply peer review skills to outputs such as an academic poster, an article written for a news outlet, or a social media post (Stachowiak, n.d.). The peer review can also be broadened to include aspects of critique used in fine arts (Choi and Rhoades 2022) or audience analysis to discuss how discourse changes to meet the needs of the audience and (Warner 2018) .

References

Brammer, Charlotte, and Mary Rees. 2007. "Peer Review from the Students' Perspective: Invaluable or Invalid?" *Composition Studies 35* (2): 71–85.

Cathey, Christie. 2007. "Power of Peer Review: An Online Collaborative Learning Assignment in Social Psychology." *Teaching of Psychology* 34 (2): 97–99.

Chick, Nancy L., Sophia Abbot, Lucy Mercer-Mapstone, Christopher P. Ostrowdun, and Krista Grensavitch. 2021. "Naming Is Power: Citation Practices in SoTL." *Teaching and Learning Inquiry* 9 (2). https://doi.org/10.20343/teachlearninqu.9.2.2.

Choi, Min-Seok, and Mindi Rhoades. 2022. "Ways of Seeing through Desk Critique: Intertextuality as a Pedagogical Tool for Learning Opportunities." *Teaching in Higher Education* 27 (7): 923–42. https://doi.org/10.1080/13562517.2020.1759527.

Cook, Brian R, Peter Kamstra, Thomas Savige, Le-Anne Bannan, Elena Tjandra, Andreas Alexandra, and Isabel Cornes. 2021. "The Impact of Peer-Review on Undergraduate Grades When Students Decide Whether to Participate." *Journal of Geography in Higher Education* 45 (2): 238–54. https://doi.org/10.1080/03098265.2020.1804844.

Gardner, Susan K. 2010. "Contrasting the Socialization Experiences of Doctoral Students in High- and Low- Completing Departments: A Qualitative Analysis of Disciplinary Contexts at One Institution." *The Journal of Higher Education* 81 (1): 61–81.

Gottfried, Gail M., Kathy E. Johnson, and Jordan R. Vosmik. 2009. *Assessing Student Learning: A Collection of Evaluation Tools*. Office of Teaching Resources in Psychology.

Hands, Africa S., and Virginia M. Tucker. 2022. "Fostering Doctoral Student Socialization and Research Expertise through Writing Pedagogy." *Journal of Education for Library and Information Science* 63 (1): 64–79. https://doi.org/10.3138/jelis-2020-0115.

Hoogeveen, Mariëtte, and Amos van Gelderen. 2013. "What Works in Writing with Peer Response? A Review of Intervention Studies with Children and Adolescents." *Educational Psychology Review* 25 (4): 473–502. https://doi.org/10.1007/s10648-013-9229-z.

Huisman, Bart, Nadira Saab, Paul van den Broek, and Jan van Driel. 2019. "The Impact of Formative Peer Feedback on Higher Education Students' Academic Writing: A Meta-Analysis." *Assessment & Evaluation in Higher Education* 44 (6): 863–80. https://doi.org/10.1080/02602938.2018.1545896.

Hyland, Ken. 2005. "Stance and Engagement: A Model of Interaction in Academic Discourse." *Discourse Studies* 7 (2): 173–92.

Kobayashi, Masaki, Sandra Zappa-Hollman, and Patricia A. Duff. 2017. "Academic Discourse Socialization." In *Language Socialization*, edited by Patricia A. Duff, 3rd ed., 239–54. Encyclopedia of Language and Education. Springer International Publishing.

Liu, Luda, Yue Yuan, and Zhongquan Du. 2023. "Discoursing Disciplinarity: A Bibliometric Analysis of Published Research in the Past 30 Years." *Journal of English for Academic Purposes* 66. https://doi.org/10.1016/j.jeap.2023.101317.

Mårtensson, Katarina, Kelly Schrum, Karin Watson, and Collins Fleischner. 2023. "Encouraging New Scholars: The SoTL Peer Reviewer of Journals Mentor Program." Workshop presented at the ISSOTL23, Utrecht, The Netherlands, November 10. https://www.uu.nl/sites/default/files/ISSOTL_Daily%20Programme_0.pdf.

Mirick, Rebecca G. 2020. "Teaching Note—Online Peer Review: Students' Experiences in a Writing-Intensive BSW Course." *Journal of Social Work Education* 56 (2): 394–400. https://doi.org/10.1080/10437797.2019.1656582.

Parks, Emily L. 2022. "Joining the Conversation: Teaching Students to Think and Communicate Like Scholars." *Scholarship of Teaching and Learning in Psychology* 8 (1): 70–78. http://dx.doi.org/10.1037/stl0000193.

Riley, Holly, and Brenna Spurling. 2023. "Relational Peer Review Practices in the Honors Research Methods Classroom: Toward a Scaffolded and Multidisciplinary Model." *Honors in Practice* 19: 45–61.

Stachowiak, Bonni. n.d. "Yes, Digital Literacy, But Which One." *Teaching in Higher Ed*. https://teachinginhighered.com/podcast/yes-digital-literacy-one/#transcriptcontainer.

Stellmack, Mark A, Nora K Keenan, Rita R. Sandidge, Amy L. Sippl, and Yasmine L. Konheim-Kalkstein. 2012. "Review, Revise, and Resubmit: The Effects of Self-Critique, Peer Review, and Instructor Feedback on Student Writing." *Teaching of Psychology* 39 (4): 235–44. https://doi.org/10.1177/009862831245658.

Tyndall, Deborah, and Shannon Baker Powell. 2023. "Good Critical Friends Are Hard to Find: Promoting Peer Review among Doctoral Students." *Studies in Graduate and Postdoctoral Education* 14 (2): 186–200. https://doi.org/10.1108/SGPE-11-2021-0081.

Warner, John. 2018. *Why They Can't Write: Killing the Five-Paragraph Essay and Other Necessities*. John Hopkins University Press.

Yalch, Matthew M., Erika M. Vitale, and J. Kevin Ford. 2019. "Benefits of Peer Review on Students' Writing." *Psychology Learning & Teaching* 18 (3): 317–25. https://doi.org/DOI: 10.1177/1475725719835070.

Zhang, Yiran, Shulin Yu, and Kaihao Yuan. 2020. "Understanding Master's Students' Peer Feedback Practices from the Academic Discourse Community Perspective: A Rethinking of Postgraduate Pedagogies." *Teaching in Higher Education* 25 (2): 126–40. https://doi.org/10.1080/13562517.2018.1543261.

CHAPTER 8

Tilting Towards Learning Through Reflection

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Erin Rausch, *Boise State University*
Mike Stefancic, *Boise State University*

Navigation Tools

What: Creative & Representational Expression
Where: STEM & Social Sciences

Service-learning (SL) is a high-impact pedagogical strategy that has been linked to increases in student learning and engages a more demographically diverse spectrum of students. However, SL implementation can be complex, involving multiple constituents and processes, and this can lead to misalignment of expectations among students, educators, and community partners. The use of a TILTed Reflective Poster Assignment, which is grounded in service-learning peer-reviewed literature, serves to create cognitive and affective onramps to learning, while also improving clarity and transparency. This chapter provides readers with an example of a culminating service-learning Reflective Poster Assignment used in an introductory environmental science SL course to improve student learning, teaching effectiveness, and meaning-making. The chapter discusses the current and future use of this TILTed assignment and its adaptation to other experiential learning contexts.

Description of Teaching/Learning Context

Experiential learning is at the core of the teaching approaches I employ as an instructor of environmental studies at a large, public, metropolitan university. For the past eleven years, I have taught a large-enrollment, introductory-level, non-majors environmental science course and have included an integrated service-learning component. Students in the course complete fifteen hours of hands-on SL with one of eight to ten community partners. These projects address local environmental needs and engage students in activities such as community gardening, habitat restoration, and event recycling. Reflection and assignments related to the SL experience are integrated throughout the semester to help bridge connections to course content. The culminating activity for the course is a reflective team poster, which students create and present at a university-wide exhibition that includes the community partners.

This general education course enrolls students from an array of academic and demographic backgrounds. In a typical semester, this course routinely has a range of students that can include both first-semester first-year students and senior engineering students. Students also come from a range of cultural, linguistic, and socioeconomic backgrounds, and many are first-generation and/or underrepresented college students. I developed this course to include a central SL component to help increase both transparency and accessibility and allow for differentiation among learners. Using SL gives students who have limited prior scientific knowledge a hands-on context to apply abstract course concepts. Upper-division students are able to apply previous coursework and often act as peer mentors to other students. At the SL sites, students network with professionals and connect with their peers, which builds community in the course and promotes career-readiness skills.

Because of the complexity of coordinating different learning pathways at each project and the diverse range of student backgrounds in the course, students can easily become confused or overwhelmed by the SL process. I have developed strategies to improve transparency, course content connections, and student collaboration. This has been essential

to maximize learning for students and facilitate structured reflections. To mitigate some of the challenges students face in linking complex course concepts to experiences at the site, I created the SL Reflective Poster Assignment as a culminating reflection activity. This assignment is a TILTed assignment that has been adapted and designed specifically for the SL context by adding key information about the SL such as links to poster templates and the rubric in one accessible document.

Research/Evidence That Informs This Approach

The service-learning course described in this chapter and the Reflective Poster Assignment used as the culminating activity were developed based on the theoretical foundations of Experiential Learning Theory (ELT) and evidence-based research/best practices for experiential learning and reflection.

The breadth of research on integrating experiential learning (EL) is growing as scholars develop more explicit definitions of learning experiences. The theoretical ideas of John Dewey (1938), who advocated that learning is an extension of life and believed that all experience translates into knowledge, form the basis of EL. Paulo Freire (1970) further emphasized the value of active engagement, noting that reflection is transformative to one's understanding of an experience. The structure and design of the experience, as well as how students engage within it, has been identified by scholars as important variables in the success of learning experiences. The introductory environmental science course highlighted in this chapter uses a high-impact EL pedagogy defined as service-learning (SL). SL is pedagogy where students apply course content to community-defined needs. SL is grounded in the theoretical foundations of David Kolb's (2015) Experiential Learning Theory (ELT), which provides educators with a four-step cyclical learning model that helps students draw meaning from learning in experiential contexts. The ELT Cycle consists of four core aspects. These include:

- Concrete Experience (the experience)
- Reflective Observation (thinking about the experience)

- Abstract Conceptualization (drawing informed conclusions about the experience in an academic context)
- Active Experimentation (adapting the experience to new situations)

Following this cycle engages students throughout the process, creating repeatable learning opportunities (see figure 8.1).

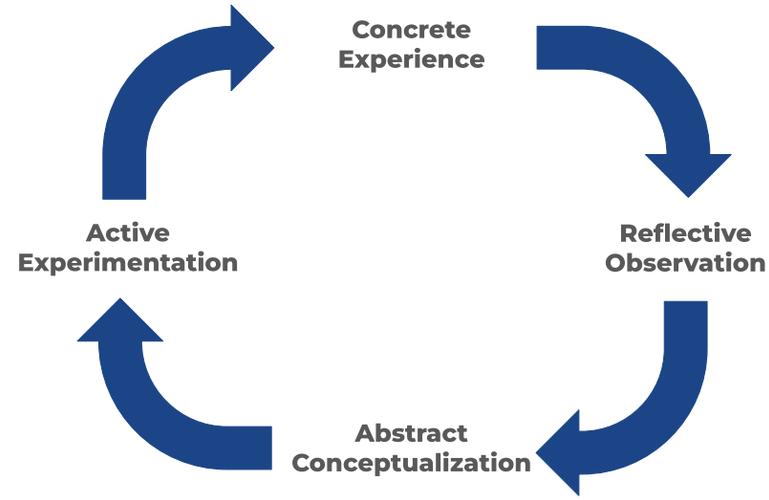

Figure 8.1. Kolb's Experiential Learning Cycle

In addition to the theoretical foundations of ELT, the SL course we describe is also grounded in best practices for EL, which have been outlined by the Society for Experiential Education (SEE 1998). These include eight "Principles of Good Practice for all Experiential Learning Activities" (SEE Principles) that outline the effective application of ELT and design for EL courses. SL pedagogy draws upon ELT to provide a structure to guide student learning and build capacity with

community partners. SL has emerged as a high-impact practice because its application of the ELT cycle through integration of course content, community-based experiences, and reflection has led to increased student learning.

Evidence also shows this integration creates significant educational benefits for historically underrepresented populations in higher education because it allows students to access prior knowledge and apply it to real-life contexts (Kuh 2008). Low-income and first-generation students can face unique challenges in college, such as unfamiliarity with the academic culture of college and decreased academic self-efficacy. Differentiating learning pathways, using Universal Design for Learning (UDL) principles, centers inclusion for all student populations. UDL leverages different ways of learning course materials to improve the educational experience by introducing more flexible teaching methods, assessment, and service provision to cater to the diversity of learners in classrooms (CAST, n.d.).

Student engagement in their educational experience can be characterized by everything from full participation to being completely "checked out." In this context, student agency gives students the sense that they have a role to play in the issues their projects address. This is made easier when the ELT cycle is applied because of its capacity to affect change and take action in a social context (Bandura 2000). When students develop agency within the experience, they can be drivers of their learning.

Reflection is the element that transforms a life experience into a learning experience. By focusing on inter- and intra-personal perspectives, reflection links the learning so that the meaning of that experience isn't missed and students can adopt new insights (Eyler and Giles 1999). For knowledge to be discovered and internalized, the learner must first test assumptions and hypotheses about the outcomes of decisions and actions taken. Then weigh these outcomes against past learning and future implications. This reflective process is integral to all phases of experiential learning, from identifying intention and choosing the experience to considering preconceptions and observing how they change as the experience unfolds.

Ash and Clayton's (2009) DEAL Model provides guidance to make reflection more impactful using frameworks that can help scaffold students' processes to be more critical, derive deeper learning, and the agency to be life-long learners. Instructors that use the DEAL Model to facilitate reflection take students deeper into their thoughts and build more critical skills by not only describing (D) what happened but examining (E) experiences through academic, personal, and civic lenses to be able to articulate their learning (AL) clearly for the students themselves. The actions that allow one to apply this model of reflection center on transparency and seeking understanding throughout interactions before, during, and after experiences to ensure course goals are met. Providing the right level of transparency and expectation clarity creates meaningful learning experiences.

Application of Research to Develop This Assignment

Setting clear expectations between educators, community partners, and students throughout the SL experience and having consistent, guided reflection structures are essential to maximizing the benefits of ELT. To facilitate this process, I worked collaboratively with staff members from the campus Service-Learning Program to create a TILTed assignment that serves as the culminating reflection assignment in the class. This assignment, known as the Reflective Poster Assignment, is a team-based project where students who participated in the same SL project use a poster template to reflect upon their experiences at the site and draw connections to what they are learning in class. They also consider how the experience has affected them as learners and share their experiences with other students so that they can compare and contrast their experiences with others.

The eight SEE principles described above advocate for reflective, transparent communication to students about their experience by prioritizing clear intentions, making connections to course content, and celebrating learning. The Reflective Poster Assignment implements these practices by articulating the purpose of the poster, the role of

the reflection, project tasks, timelines, and evaluation of learning. By integrating these practices into the course, and clarifying the rationale and purpose of them, students have a better understanding of why SL was integrated into the course and how it can be translated and applied to their lives beyond the course. For some students, this may be the first time they have experienced self-directed learning, so it is even more essential to have specific information and resources presented to them in an accessible format.

For students to fully engage in a learning experience, ELT integration, which includes providing detailed instructions, allows for meaning-making to occur and helps students identify how to apply the new knowledge they have gained. Specifically, the reflective steps in the ELT cycle prompt facilitators to guide students through the process in a way that challenges their thinking. Expecting students to know when and how to challenge their thinking is an area in the Reflective Poster Assignment connectivity to learning outcomes. For instance, it would be easy for a student to leave their experience with easily generalizable ideas of the environmental impact of humans on the landscape without understanding the nuances of policies, land management, and climate. Leveraging the step-by-step process in the Reflective Poster Assignment makes the learning process connected and repeatable for students in other EL contexts.

ELT integration, which includes providing detailed instructions, allows students to fully engage in a learning experience, helps foster meaning-making, and assists them in identifying how to apply the new knowledge they have gained. Specifically, the reflective steps in the ELT cycle prompt facilitators to guide students through the reflection process in a way that challenges their thinking. The Reflective Poster Assignment assists students with knowing when and how to challenge their thinking by structuring clear intentions and connectivity to learning outcomes. For instance, it would be easy for a student to leave their experience with easily generalizable ideas of the environmental impact of humans on the landscape without understanding the nuances of policies, land management, and climate. Leveraging the step-by-step process in the

Reflective Poster Assignment makes the learning process connected and repeatable for students in other EL contexts.

Integrating reflection, one of the SEE principles, is critical for student agency to occur. Integrating it into the Reflection Poster Assignment helps students synthesize the learning gained from their SL experiences. The Reflection Poster Assignment also provides opportunities to showcase the unique benefits of SL pedagogy's reflective components. Reflection isn't always intuitive, so with a structured process, there are opportunities to strengthen the practice and advance student learning. Process is at the core of reflection and using the DEAL Model of Reflections ensures that clear structure is adapted to each course situation. Using each step of the DEAL model in the Reflective Poster Assignment provides a predictable process for students in their reflective thinking that helps them transfer reflection into practice. Using it throughout the semester's reflection assignments builds to the final Reflective Poster Assignment, making it easier for students to take ownership over the process. Guiding students through reflection by sharing the context, goals/expectations, and perspectives creates opportunities for deeper outcomes.

Finally, designing the Reflective Poster Assignment in the TILTed format increases clarity and guidance, which helps students maximize their learning within the ELT cycle and makes the experience more meaningful and equitable for all involved. Students come to this course with different levels of experience, so the assignment can appropriately differentiate pathways to empower students. With this agency, students can take the initiative to ask questions and further reflect with their peers and instructors. Laying out the expectations and requirements in one document helps students at this point of their learning journey step in and find their meaning through reflection.

TILTed Assignment

Below are the details of the Reflection Poster Assignment.

Purpose

The goal of service-learning in this class is for students to develop practical knowledge about local environmental issues, network and gain job skills with local agencies, and have a hands-on context to translate academic course concepts.

Your service has played a valuable role in addressing environmental challenges in our community! Now that the semester is coming to a close, you will create Service-learning Reflection Posters to reflect on those experiences, draw connections to course concepts, consider new perspectives and skills gained at the sites, and share this learning with the class and community.

In this assignment, you will work in small teams to articulate your learning in a digital poster format. Students will then vote for the top posters in the class and the winning posters will be displayed in the University-Wide Service-Learning Exhibition (SLx) during the last week of the semester. Grading: 25% of the Service-Learning grade (see details below for point breakdown.)

Table 8.1. Learning Objectives Acquired Through Service-Learning Poster

Service-learning Poster Objectives	**Learning Activities**	**Learning Assessment**
University Learning Objective 8 (Natural Science): Apply knowledge and methods characteristic of scientific inquiry to think critically about and solve theoretical and practical problems about physical structures and processes. In this class we are considering how scientific inquiry is applied in hands-on settings.	Service-learning in-class reflection activity	In-class reflection participation

Service-learning Poster Objectives	**Learning Activities**	**Learning Assessment**
Communicate Clearly: Students will articulate and synthesize course concepts about nature and society gained through direct work with local agencies using a digital format.	Creation of digital service-learning reflection posters	Digital poster submission evaluated with SLx rubric and team assessment
Create Networks: Students will reflect on connections made with a broad array of communities through their work with local agencies and the community. Students will reflect on career knowledge/job skill development. Students will collaborate and reflect with each other in a formal team setting.	Poster presentations to class and community; Team/self assessment	Poster presentation participation and articulation of learning

Task

What will I be doing in this poster assignment? When are things due? How will it be assessed? You will work in a small team of students to reflect on your service experience, create a digital reflection poster articulating your learning from your service, and present these to the class and community. This assignment has several key components/tasks detailed on the next page.

Table 8.2. Service-Learning Exhibition Rubric

Assignment Components	Due Date	Grading
Attend/be engaged in the in-class reflection session	4/4	10%
Create the digital posters in small teams during class • Review the expectations & student submission requirements on the SLx website • Choose a digital template and make a copy • Work as a team to complete the poster, assign equitable roles • Use SL reflection logs & personal images to enhance your poster • Look at the poster examples for ideas • Use the SLx Rubric to guide your work	4/9	65% (Poster work day participation & final submission. Based on SLx rubric)
Edit and finalize your posters, submit them in the shared poster folder • Exchange contact information • Write a 150-250 word written summary of the project and add this to the shared drive poster folder	4/10	
In-Class poster presentations and voting • 5 minute, informal class presentation about your poster & SL experiences • Each person on the team should present a section of the poster	4/11	20%
Self and team assessment on Canvas • Give constructive feedback on your participation & team member contributions • This will be used to adjust individual grades as needed	4/16	5%
Attend the SLx poster show, earn extra credit! • April 24th, 4-6pm • SUB Simplot Ballroom • Sign-in for points	4/24	Extra credit: 10 pts for presenters 5 pts for non-presenters

Criteria

This assignment is based on several grading criteria. In order to be successful in this project and earn an "A", you will need to do *all* of the following:

- Be in attendance and engaged during the in-class reflection poster session.
- Be a team player. Assign roles ahead of time, designate who will do what on the poster, and be accountable to one another by exchanging contact information.
- Look through the Service-Learning Exhibition Rubric (table 8.1) and look at sample posters from previous years to get ideas.
- Take pictures at the site (if you are able) and document your experience in your reflection log throughout the semester.
- Incorporate thoughtful and personal reflection from each team member into the poster—the exhibition judges love this!

If you have any questions throughout this project or if you will be gone from class for any part of this project, please reach out to the class TA or instructor as soon as possible to make alternate arrangements. We are happy to help proactive students!

Critical Reflection of the TILTed Assignment

Teaching with SL can be daunting for educators and students alike. Before using the Reflective Poster Assignment, students sometimes struggled to connect course concepts and their SL experience because the goals of the project and its connection to the course learning objectives were not clearly articulated. Adding the Reflective Poster Assignment to the course and aligning it with ELT and SEE's principles and applying the DEAL model has greatly improved transparency in the course by helping facilitate the SL impacts.

Students can access key information about the SL Reflective Poster Assignment project in one easily accessible document that includes resource links (poster templates), team expectations, and assignment components. The Reflective Poster Assignment has also provided an opportunity for community partners to see the culmination of the students' experiences and formalizes their role in the ELT process. As a result, the Reflective Poster Assignment has increased the overall sustainability of SL projects by clarifying expectations, emphasizing course learning, and articulating these goals to the community partner.

Since adding it, students are also more accountable to how SL has impacted their learning and have higher rates of overall completion at community sites. Qualitative evaluation data also indicates that students are more invested in pursuing additional community-based experiences and 94 percent of students state that this class ought to be taught using SL experiences in the future. This transparency has also resulted in students having an increased sense of agency about their role and purpose at the project sites. The Reflective Poster Assignment has helped improve students' likelihood of leaving the course with the feeling that they can play a role in addressing environmental challenges beyond the course. This student comment really highlights this, "I can't imagine this class without the service-learning. The service-learning allows us to get out to really see the impacts of humans in both sustainable and less-sustainable ways. We also get to assist our community in a meaningful way." Use of the Reflective Poster Assignment has also helped mitigate barriers such as feeling a lack of connection between the SL experience and course

content that previously existed. Coupling the integration of SL with the Reflective Poster Assignment increases learning while reducing barriers and, as Kuh (2008) notes, can increase retention.

Use of the Reflective Poster Assignment has also strengthened community partnerships in the course. For example, some students serve at a community garden, which has a long-standing partnership with the course. This community partner regularly attends the final poster event held by the Service-Learning Program, allowing student participants to articulate their learning with the partner, which builds deeper connections to their service and learning. As a result of using the Reflective Poster Assignment, students have expressed interest in continuing their involvement with this project in the future. Overall, the Reflective Poster Assignment has increased partner investment in the SL projects, allowing them to see the impact on student learning. This has resulted in more community partners staying with the course over multiple semesters. Having sustainable partnerships leads to continuous improvement of the SL experience for all involved, and several partners have expanded their engagement with the university to include other courses or internships.

Initial data on using the Reflective Poster Assignment shows that students who did access the assignment found it to be a helpful tool because it made learning expectations and course connections clearer. Students have commented that the assignment helped them understand the greater purpose of SL and found that it was inspirational to see the cumulative impact of their work in the community. Implementing the Reflective Poster Assignment has strengthened students' roles as active learners and helps them see how their learning connects to the whole picture. I hope to continue to see an increase in student's ability to use the Reflective Poster Assignment as a tool to facilitate connections between course content and reflection. I also hope it will serve as a resource for students to find answers to their own questions about the assignment. This will increase overall agency for their learning in the course.

Modifying, Adapting, or Applying This Assignment for Other Contexts

The SL format and Reflective Poster Assignment used in the introductory environmental science course described in this chapter provide educators with a model that can be adapted to EL courses in other disciplines. With the integration of ELT into the TILTed assignment, this format contains the necessary components, in alignment with SEE Principles, that support strong student learning outcomes in experiential settings.

On our campus, the Service-Learning program, which is part of our Center for Teaching and Learning, has adopted an amended TILTed assignment called the Service-learning Transparent Assignment (SLTA), which is used to improve communication and course level planning. The SLTA has been piloted in multiple courses across the university as a model for all service-learning designated courses. SEE best practices are also integrated into the SLTA template to support inclusive EL course design with increasingly equitable student and partner experiences. Increased transparency through these types of assignments helps facilitate communication between students, educators, and community partners, reinforces the role of community partners as co-educators, provides clear expectations, and strengthens student learning. The SLTA is a tool that SL courses across all disciplines can use to become both increasingly aligned with SEE best practices and transparent for all stakeholders.

I developed the Reflective Poster Assignment as a subset of the SLTA. The SLTA template helps educators draw connections between the transparency framework and SEE best practices. Educators can either customize a Reflective Poster Assignment for their course or access the larger framework of the SLTA. Using either template can help educators work through the necessary planning and course alignment when designing or modifying SL or EL courses and results in an assignment that provides guidance and transparency to both community partners and students.

On our campus, this SLTA template now guides educators from any discipline who want to use the SL pedagogy as part of their course. The creation of the SLTA template, grounded in the ELT cycle and SEE principles, pushes the TILT model in a new direction by serving as

a tool for course development and a resource that ties both logistical details and learning concepts together for everyone involved. Our goal is to build a community of educators who use this template and tools in course development and share them with others within their departments and with their community partners.

References

Ash, Sarah L., and Patti H. Clayton. 2009. "Generating, Deepening, and Documenting Learning: The Power of Critical Reflection in Applied Learning." *Journal of Applied Learning in Higher Education* 1: 25–48. https://doi.org/10.57186/jalhe_2009_v1a2p25-48.

Bandura, Albert. 2000. "Exercise of Human Agency through Collective Efficacy." *Current Directions in Psychological Science* 9 (3): 75–78. https://doi.org/10.1111/1467-8721.00064.

CAST. n.d. "Universal Design for Learning Guidelines Version 2.2." Accessed August 30, 2023. https://udlguidelines.cast.org/

Dewey, John. 1938. "Criteria for Experience." In *Experience and Education*. Free Press.

"Eight Principles of Good Practice for All Experiential Learning Activities." 1998. Paper presented at the Annual Meeting, Norfolk, VA.

Eyler, Janet, and Dwight E. Giles Jr. 1999. *Where's the Learning in Service-Learning?* Jossey-Bass.

Freire, Paulo. 1970. Pedagogy of the Oppressed. Continuum.

Kuh, George D. 2008. "High-Impact Educational Practices." *Peer Review* 10 (4).

Kolb, David A. 2015. *Experiential Learning: Experience as the Source of Learning and Development*. Pearson Education.

SECTION 3

Process of Learning

This section delineates how the assessment strategies shared through each of the TILTed pedagogy chapters herein, syncopates with Grand Challenge #3, where SoTLers explore teaching and learning in a postsecondary education context for the purpose of both understanding and improving the complex processes of learning. Chapters 9–12 showcase a variety of assessment strategies in direct response to the complexities of learning, but from a perspective that is holistic (cognitive, affective, physiological, social, and cultural) and in alignment with Grand Challenge #3.

Understanding the learning process is essential for both learners and educators to effectively support and engage in learning. The challenge underscores the need for resources and research to better comprehend the multifaceted nature of learning and learners. This grand challenge is important because it aims to enhance the overall quality of teaching and learning by fostering a deeper understanding of how learning occurs, ultimately contributing to the transformation and advancement of individuals and societies.

Content in this section highlights how course instructors have developed and (re)designed their assessment strategies and practices from a student-centered perspective, prioritizing the learning process and overall student experience. Chapter 9 highlights a readily adaptable Unessay assignment that utilizes a Universal Design for Learning (UDL) approach. Chapter 10 showcases how the TILT framework for repertoire assignments in music can enhance students' clarity of expectations and processes while also improving their sense of belonging. A synthesis or

learning assignment is presented in Chapter 11, highlighting opportunities for students to reflect on course content, and (re)engage with key concepts, core curriculum, and potential gaps in understanding, resulting in deeper and more meaningful learning. Finally, Chapter 12 uses Knowledge surveys (KS) to foster transparency in learning and teaching by providing students with explicit and specific ability statements of learning objectives.

Through these non-conventional approaches to assessment of student learning, these chapters demonstrate instructors' commitment and dedication to improving the complex processes of learning. Unlike more traditional forms of assessing student work, the content in this section highlights the ways through which students may demonstrate their learning through meaningful, albeit alternative, forms. In doing so, these chapters wholistically reflect the exploration into teaching and learning in a postsecondary education context for the purpose of both understanding and improving the complex processes of learning.

CHAPTER 9

The Unessay

Making Room for Student Choice in a Writing Classroom

Emily Esola, *Indiana University, Bloomington*

Navigation Tools

What: Creative & Representational Expression
Where: Arts & Humanities

This chapter shares a readily adaptable Unessay assignment that utilizes a Universal Design for Learning (UDL) approach. Unlike the traditional academic essay, the un-essay allows students to demonstrate their learning in alternative, and often more meaningful, forms. Along with the assignment, I cover success tips for teachers and students honed through trial and error, ideas for modifying this assignment to suit the needs of different teaching contexts and further reading on the pedagogical approaches used.

Description of Teaching/Learning Context

I created this Unessay assignment for two different writing-intensive courses that I teach at a public research university in the Midwest United States: a first-year seminar and a business communications course.

First-Year Seminar
This introductory course asks students to consider how beauty standards in popular culture influence our self-perception. As part of a three-week summer bridge program, this three-credit hour course enrolls eighteen first-year students who meet every day for three weeks. I am the sole designer and instructor of this course.

Business Communications Course
This 200-level course teaches sophomore business majors the foundations of effective professional writing. The course enrolls around twenty-five students and meets twice a week for a full sixteen-week semester. As part of the core required curriculum, the course follows general guidelines that each instructor may modify.

The purpose of my Unessay assignment is straightforward—to offer students a choice in the way they wish to demonstrate their learning for our writing course's final project. Both courses mentioned above are a good fit for this TILTed approach because they each aim to provide students with the foundational skills needed to: a) begin their first year or b) enter upper-level classes. The courses thus come at critical moments in students' academic careers, when both self-efficacy and understanding of criteria for success heavily impact their persistence.

I use a flipped classroom approach to content delivery whereby students encounter information prior to class (lectures and readings) and actively apply this knowledge in individual and team-based activities, including writing workshops. The structured writing process used in these active learning sessions is crucial to the success of this project. In the 40/20/40 method students spend 40 percent of their time planning, 20 percent drafting, and 40 percent revising. This methodical approach provides the space and time for ideas to develop and for continual revision to occur.

The Unessay assignment results from my experiences teaching undergraduate writing courses for over a decade. I have taught introductory writing courses for two bridge programs, a variety of 100

and 200-level general education composition courses for all majors from all class standings, and 200-level business communication courses for sophomore students. As a cis-gender, white woman positioned within a primarily white institution (PWI), I adopted a TILTed framework after recognizing that I had been unconsciously reproducing the pedagogical methods I had experienced as an undergraduate and graduate student—methods which upheld the "hidden curriculum" and erected barriers to success. The hidden curriculum refers to "unstated norms, policies, and expectations that students need to know to succeed in higher education but are often not taught explicitly" (Gonin et al. 2023). Prior to this I had led all my classes (of 15–24 students each) in a conventional format where students completed the bulk of their reading and writing tasks outside of class, attended class three times a week for lectures accompanied by slide decks, class discussion, and occasional small group work, and wrote three to four major essays. I graded by ranking student work (with a letter grade system) in terms of how effectively they reproduced the academic conventions and rhetorical norms of my field, and the semester culminated in a complex research paper meant to demonstrate students' mastery of a specialized, narrow writing genre.

The problem with this approach is that it privileges conventional knowledge production over student experience and unique connections to the content. The final project disrupted class culture right at the point in the semester when students started to open up, develop a voice, and take some control of their learning. As the end of the semester approached and students completed their longest, most involved work, whose only intended audience was me, their instructor, I would witness a dramatic reduction in motivation and engagement. If students experienced a sense of achievement, it was merely from surviving the grueling process.

The Unessay assignment represents a paradigm shift in my teaching practice toward a more thoroughly inclusive and evidence-based approach to assessment. This shift was influenced by two major moments in my teaching career that prompted me to question what else might be possible.

First, the four summers I spent teaching a six-week intensive composition course for the Groups Scholars Program, a bridge program that enrolls first-generation students with contingent acceptance to the university. The program was designed to equip students with the academic skills they would need to succeed in the college classroom and their degree programs. This teaching experience differed from those prior in significant ways: 1) the racial demographic make-up of the classroom (most of the students were Black and/or Latine) and 2) the explicit focus on sense of belonging and acknowledgement of the hidden curriculum. To meet these students' needs, I developed what I now understand as a foundation in TILTed pedagogy.

Second, the experience of teaching amidst the ongoing, but newly visible, racial crisis in our society and the start of the COVID-19 pandemic. At this time, the possibility for change in an academic culture based in white supremacist tradition and rigid hierarchical norms was heightened. When COVID-19 hit, educators made changes to make things more accessible for everyone: I removed one-third of course content, used lecturing more strategically to engage students, and developed a more flexible, growth-oriented grading approach. As part of a "Radical Inclusivity" series, Asao Inoue introduced "anti-racist assessment," positing that traditional grading "work[s] to create failure in particular places and associate it with particular bodies" (Asao 2015, 4). His workshop challenged me to think more critically about how power operates in the writing classroom and apply new assessment methods to disrupt the hierarchical relationship between teachers and students.

These experiences prompted me to move beyond a teaching method based on reproducing the conventions I encountered as a student and instead understand my responsibility to create the conditions for my students' success.

Research/Evidence That Informs This Approach

The research that supports my pedagogical approach derives from two main areas: 1) the history of writing instruction and 2) Universal Design in Learning (UDL).

The history of writing instruction in higher education helps us understand why frameworks like TILT are essential. The traditional approach to writing instruction requires students to master a highly-specialized and disciplinary-specific writing genre, a genre for which they often have no use beyond the college classroom. As writing instructors, we have inherited a "120-year-old complaint about student writing" (Russell 1991, 6). Every semester, I hear new theories about *why this generation of students cannot write*: The internet! Social media! Phones! Artificial intelligence! While the blame-worthy technologies may be new, this complaint echoes a long-held belief that "students whose writing [does] not conform to a particular community's standards…exhibit some deficit, which [has] to be remedied before they [can] be admitted to the community" (Russell 1991, 15). Such thinking impedes students' access to higher education based on their socioeconomic and educational backgrounds. In Teaching to Transgress, bell hooks articulates our basic responsibility: "as teachers—on all levels, from elementary to university settings—we must acknowledge that our styles of teachings reflected the notion of a single norm of thought and experience, which we were encouraged to believe was universal" (1994, 35). If we want to create inclusive classrooms, we have to admit that part of our resistance to taking practical steps toward change is rooted in a "fear [of] losing control in a classroom where there is no one way to approach a subject—only multiple ways and multiple references" (hooks 1994, 35). In this way, the Unessay marks a shift away from traditional styles of college-level writing instruction because it explicitly invites students to express themselves in "multiple ways and [with] multiple references" as a member of a learning community where difference is intrinsically valued.

In concert with TILT, the larger Universal Design for Learning (UDL) movement informs my pedagogy. UDL principles involve making changes to the learning environment using intentional design to reduce

barriers. If TILT focuses on transparency, UDL focuses on flexibility, offering students options and choices both in the ways that they access materials and course content and the ways they demonstrate what they know. Rather than assuming sameness among all students and making ad hoc accommodations for specific students, a UDL framework assumes learner variability and provides multiple options and formats for all students. Using scientific insights about how humans learn, UDL broadens the concept of learner variability through a focus on three areas of our brain where key processes involved in learning come together to create a meaningful learning experience:

- The "Affective Network" is about engagement: "Learners differ markedly in the ways in which they can be engaged or motivated to learn."
- The "Recognition Network" is about representation: "Learners differ in the ways that they perceive and comprehend information that is presented to them."
- The "Strategic Network" is about action & expression: "Learners differ in the ways that they can navigate a learning environment and express what they know" (CAST, n.d.)

In a UDL framework, no single approach will be "optimal" for all learners in all contexts. Rather than try to change the learner to suit a single imagined "optimal" state, you change the learning environment. Behling and Tobin start from the same premise in their "plus-one" approach to UDL in assessment: "[W]hen we ask learners to show their knowledge and skills in only one way, we are excluding a number of people from showing what they know" (Tobin and Behling 2018, 179). Offering students choice "ensures [they] are able to demonstrate what they know to the fullest extent possible without being penalized by the method of demonstration" (Tobin and Behling 2018, 182). On a larger scale, using a more capacious understanding of learner variability and expanding an assignment even by one method "provides students with opportunities to engage with the course material in ways that are meaningful to them and that reflect their learning

preference" (Tobin and Behling 2018, 182–183). This idea is the core of my Unessay assignment.

Application of Research to Develop This Assignment

This section outlines the research-informed instructional approach used to design the assignment, with particular attention to student choice, iterative drafting, peer feedback, and specifications-based assessment.

How the Unessay Assignment Works

The Unessay is a point of focus from day one of class. I project a poster, "This is a Body Positive Space," which lists appropriate and inappropriate behaviors regarding body positivity in shared spaces. Student pairs study the poster closely, identifying details and questions they would like to discuss. In a wide-ranging conversation, we break down the poster's textual and visual elements. Students free-write about what topic and format they might like to choose for their final project. Including multiple check-in points allows students to narrow their project in terms of format, topic, and whether to work individually or with a team.

Peer review occurs many times during the process. All drafts are stored on a collaborative platform like Google Drive for ease of access—this helps students self-assess their work in comparison to their peers and exchange ideas and tips.

Examples of Student Work

Half of my eighteen students chose to write essays, and the other half chose to create unessays. One student wrote an essay analyzing the complex beauty standards of K-pop culture, particularly its focus on whiteness. As she worked, however, she realized she had a lot of thoughts on her own relationship to K-pop, both as a fan of the genre and fan community and as a person who identifies as multiracial. In the end, she produced a two-part essay, one half offering an informational analysis of beauty standards in K-pop, and the other half a critical reflection on her fandom. Another student's 3 ft x 5 ft poster focused on educating its audience about the role that media and beauty industries play in

perpetuating narrow and harmful beauty standards for women. After extensive summary that synthesized main ideas and information from our main course texts, she offered a list of further reading, and a final section including ways to affirm yourself and others such as "Look in the mirror and give yourself a compliment," and "Unfollow social media accounts that make you feel inferior."

I have since run this assignment as the "Unreport" in my business communication classes for two semesters. Every student chooses the unreport option, either because it sounds interesting or because they want to gain more skill in a particular format. Most choose topics relevant to their lives. For example, a team of three created a slide deck explaining how sports betting worked and how the industry's addictive social media platforms target and harm young men. They share information about mental and physical health and tips and how to help a friend who is struggling. Another student created a 10-minute video about her experience as a first-generation student at the business school, including common challenges and tips and resources for students. Many projects center on mental health or balance as a college student, both generally (a slide deck on mental health, including sections on anxiety vs. stress, post COVID-19 effects, and college education and mental health) or for specific sub-groups of students (a blog on mental health and college athletes including sections defining mental health, unique stressors faced by athletes, and NCAA's response).

Evaluating and Grading Using a Specifications (Specs) Rubric

I grade the Unessay using a specifications rubric with eight criteria. For instructors worried about how they will grade projects in different formats, specs grading supports the project of creating "UDL informed assessment" because it helps you to define "consistent and measurable learning objectives to streamline the process of helping students choose the best option and to grade projects in different formats efficiently" (Tobin and Behling 2018, 182).

Prior to designing this assignment, I had developed a non-traditional grading system for my business communication classes over

four semesters that includes two components. Sixty percent of the work submitted is graded incomplete/complete, and 40 percent of the work is formally evaluated with a specs rubric whose criteria does not change throughout the semester or from assignment to assignment. Depending on the number of criteria met (out of 8), assignments graded with a specs rubric can earn a 0 (Needs Revision), a 1 (Low Pass), or a 2 (High Pass). These major assignments also include a revise and re-submit option.

By the time students begin their project, they have experienced consistency in the way their writing has been evaluated and therefore have a very clear understanding of my expectations in a few key areas: overall audience awareness, including sentence-level clarity and conciseness, paragraph-level coherence, unity, and development, and selection and integration of evidence and outside source material. As they perform each successive peer review, they build their own expertise in judging the work of others as well as their own.

TILTed Assignment

Below are the details of the assignment.

Purpose

After completing this assignment you will understand how to apply a knowledge base and use audience-focused communication and writing skills to identify and respond to social issues in your community (practice a creative form of being civic minded). After completing this assignment you will be able to:

- Use the 40/20/40 Method of planning, drafting, revising
- Explore, clarify, and clearly communicate ideas and information to diverse audiences in specific contexts
- Develop intercultural competence (the ability to communicate and work with people who have backgrounds or ideas different from one's own)
- Explain the context(s) of social problems and the concept of intersectional social identity

- Increase awareness of social and cultural difference by reflecting critically on your own social and cultural perspectives

Task

You've been honing your ability to clearly and concisely communicate ideas and information to various audiences in different contexts. You've developed a knowledge base about a complex social issue—beauty standards and identity—through a cultural studies lens. *Choose one of the two options below to demonstrate your knowledge and apply your skills.*

Unessay Option

Create a campaign for students in your dorm and/or floor to teach them about something you learned in our course. As you enter your first year and share a living space with your peers (a dorm, a specific floor), how would you teach them about what you have learned? Who would you specifically address? What is your purpose? What do you want them to know? There are no rules or formal requirements—use whatever style of writing, presentation, or media that speaks to you. The choice of format/presentation should help (rather than hinder) your exploration of the topic.

Essay Option

Do deeper research on an issue related to our course inquiry and write an argumentative essay on the subject (5–6 pages). This paper should integrate the writing and research skills practiced in class (summary, claims, evidence, paragraph structure, overall logic, MLA or APA style). Present an issue and take a position on it. Develop an argument to convince the reader that this position is correct. Use the essay template below:

- Introduction: Clearly introduce and define your topic. Give any necessary background information. Make a claim about the issue (a thesis statement)
- Body paragraphs: Clearly present the main arguments that support your thesis statement. Include facts, evidence, and examples that

support each main argument. Present one or more counterarguments to show that you understand the issue completely. Acknowledge counterargument(s) where appropriate, and respond to them with refutations. Use transitions so that your ideas flow together in logical order.

- Conclusion: Summarize all the arguments made and remind readers why they should agree with your position. Give your readers something to think about: make a final statement in the form of a suggestion or prediction.

Criteria

The assignment will be evaluated using a specifications-based rubric that emphasizes clear, measurable writing and communication outcomes. Each criterion below reflects core expectations for academic writing, including sentence clarity, paragraph structure, organization, audience awareness, and completeness of response. This assignment includes two options—Essay and Unessay—and each option is evaluated using a distinct set of criteria aligned to its format and learning goals.

Essay Option Criteria

The Essay Option is assessed using the following specifications rubric (table 9.1). Each criterion must be met for work to be considered successful under the grading system described.

Unessay Option Criteria

The Unessay is evaluated using the same specifications-based grading system and general writing expectations described for the course (see table 9.2), with criteria applied flexibly depending on the chosen format. Students are expected to demonstrate clear communication of ideas, intentional design choices aligned with purpose and audience, and full engagement with all required components of their chosen project.

Table 9.1. Essay Option Criteria Specifications Rubric

Specifications Rubric	Met	Not Met
Sentences. Words are spelled and used correctly. Writing is grammatically correct.		
Sentences. Writing style is concise and direct. Avoids filler words and uses plain language.		
Paragraphs. Each paragraph has a clear and coherent topic sentence.		
Paragraphs. Each paragraph has one clear and coherent main idea—communicated in the topic sentence—that is developed (supported, clarified, demonstrated, etc.) by the rest of the sentences in the paragraph.		
Paragraphs. The order and flow of paragraphs is clear and logical. Uses strong transitions.		
Audience. Clearly addresses the intended audience (someone interested in the topic but who has not seen/read the text being summarized). Demonstrates understanding of the audience's background by including relevant information/detail.		
Purpose. Clear and direct purpose statement articulates the primary reason for writing.		
Completeness. Responds to all parts of the assignment.		

Description of Grading System on Syllabus

The course uses a specifications-based grading system for final drafts of the six core assignments. The system is summarized below and should be read alongside table 9.2 to understand how specifications performance translates into final course grades.

Final Drafts of 6 Core Assignments are evaluated with a rubric of 8 "specifications" (criteria)

- For a High Pass (2), meet 7 or 8 specifications
- For a Low Pass (1), meet 5 or 6 specifications
- For an Unsatisfactory (0), meet 4 or fewer specifications.
- Revise/Resubmit Option: You will have an opportunity to revise & resubmit these assignments.

Table 9.2. Description of Grading System on Syllabus

Final Grade	**Labor/Process Work 30+ Assignments**		**Final Drafts 6 Core Assignments**	
	Graded as 1-point assignments		*Graded as (2) High Pass, (1) Low Pass, (0) Unsatisfactory*	
	Peer Review (5 total)	Other (# varies)	Small 1, 2, & 3	Large 1, 2, & 3
A	5 out of 5	90%	High Pass 6 out of 6	
B	4 out of 5	80%	High Pass 5 out of 6	
C	3 out of 5	70%	High Pass 4 out of 6	
D	2 out of 5	60%	High Pass 3 out of 6	

Critical Reflection of the TILTed Assignment

The Unessay assignment, and its later iteration in the Unreport, have both had a profoundly positive impact in my classrooms, in terms of student motivation, engagement, and the quality of work produced. The feedback I receive from students highlights their appreciation for the freedom this assignment offers. An option for choice not only acknowledges them as individuals, but also provides them with a rare opportunity to complete a complex assignment with high levels of interest and motivation throughout the process. Many students have remarked that the process of creating their projects has changed their attitude toward writing and their sense of their own abilities for the better.

Prior to a few key experiences—many of which involved engagement with the programming offered by my university's teaching and learning center—an assignment like this would have been incomprehensible to me. Despite the fact that I was training as a feminist research scholar, I did not view teaching with a scholarly lens until around 2020, largely due to a lack of formal training and the prevailing norm that research should take absolute precedence over teaching. Whatever teaching was, I thought, it was self-evident and the only real variable was instructor personality.

I have found a new sense of agency as an educator by creating a successful and meaningful assessment task that is in line with my values and contributes to my broader goal of building a truly welcoming and inclusive classroom culture. When incorporating an evidence-based practice like the Unessay I have found that the extra labor and time put into the beginning of the process in fact sets you up to significantly streamline your teaching and grading work in the future. You, too, can tackle a project like the Unessay if you give yourself permission to try something new and to trust that with trial-and-error it will improve over time.

Modifying, Adapting, or Applying This Assignment for Other Contexts

By providing clear guidelines, criteria for evaluation, and structured support throughout the process, the Unessay can be adapted to suit various teaching contexts and course objectives. When starting out, consider limiting your assignment to just two choices for students. For example, in a business communication course, you could offer the choice between a traditional case report or a blog. In larger classes, teaching assistants (TAs) can be tasked with facilitating the scaffolding process, monitoring progress, and managing the logistics of the assignment.

Another alternative is to integrate the Unessay into a multi-day or multi-week class activity that gives students the opportunity to engage with course materials creatively. For example, students can work in teams to summarize key takeaways from assigned readings and choose one of two format choices to present their work to the class (TikTok *vs.* Instagram Reels, blog *vs.* podcast, slide deck *vs.* infographic).

References

Gonin, Madeleine, Mary Helen Truglia, Sarah Pedzinski, and Sean Sidky. 2023. "Unspoken Expectations and Student Success: Revealing the Hidden Curriculum." *Center for Innovative Teaching and Learning* (blog), January 11, 2023. https://blogs.iu.edu/citl/2023/01/11/hidden-curriculum/.

hooks, bell. 1994. *Teaching to Transgress: Education as the Practice of Freedom*. Routledge.

Inoue, Asao B. 2015. *Antiracist Writing Assessment Ecologies: Teaching and Assessing Writing for a Socially Just Future. Perspectives on Writing*. The WAC Clearinghouse; Parlor Press.

Russell, David R. 1991. *Writing in the Academic Disciplines, 1870–1990: A Curricular History.* Southern Illinois University Press.

Tobin, Thomas J., and Kirsten Behling. 2018. *Reach Everyone, Teach Everyone: Universal Design for Learning in Higher Education.* 1st ed. Teaching and Learning in Higher Education. West Virginia University Press.

CAST. n.d. "Universal Design for Learning Guidelines Version 2.2." Accessed June 3, 2024. https://udlguidelines.cast.org/

CHAPTER 10

Applied Music Studio Through TILT

Transparent Onboarding Assignments

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Navigation Tools

What: Creative & Representational Expression
Where: Arts & Humanities

The university applied music lesson experience is correlated with lineage and accessibility. Teachers impart the influence of their musical lineage and strategies developed from positive personal experiences. However, current students are culturally diverse and removed from the geographical locations implied. The result is a decrease in clarity regarding professors' expectations and professors' subjectivity to implicit bias in assessing students' progress, both having an impact on students' sense of belonging. Utilizing the Transparency in Learning and Teaching (TILT) framework for repertoire assignments enhances students' clarity of expectations and processes while reducing the teachers' subjectivity, therefore improving students' sense of belonging.

Description of the Teaching and Learning Context

Music studios, or applied classrooms, are cohorts (undergraduate and graduate) of students (in multiple degree programs) who engage with an applied professor (instrumental or vocal) in face-to-face, one-on-one instruction. Unlike traditional classroom experiences, students study with their designated applied teacher for multiple successive semesters, often throughout their entire degree program. The applied teacher cultivates a particular studio culture, including inclusive relationship building, skill acquisition, collaboration, community, work ethic, problem-solving, artistic expression, goal setting, and more.

The goal for any applied music teacher is to empower each student to be their own best teacher. In the undergraduate setting, this may be a more dramatic shift: a student may enter a program with expectations of replicating the teacher's musical ideas or simply relying solely on musical indications from the printed music and, over time, develop into an artist performer/educator who transcends a strong technical and pedagogical foundation to embrace and communicate personal creativity, intentionally within or beyond the boundaries of musical lineage and tradition.

The first semester of study with a new applied music teacher is often the most uncertain because of a studio's "unwritten expectations." First lessons, regardless of status as graduate or undergraduate, are often teacher assessments of students' skills and receptivity to new ideas. The personalities of the teacher and student contribute to the development of rapport and learning outcomes. It's like going to a physician for the first time, as exemplified in James McKinney's The Diagnosis and Correction of Vocal Faults (2005). The teacher is discovering the student's background, and the student is discovering the teacher's expectations. As a result, every student will have a unique relationship with their teacher. The variety in skill level requires that each student have individualized assignments throughout their study. However, teachers do have standardized teaching and learning strategies cultivated through their personal and professional experience as musicians. The challenge is that not all students will have access to teachers who

make those standards explicitly clear or that align with those of a new or different teacher.

The university applied music lesson student experience is correlated with lineage and accessibility. Whether teaching secondary or university students, teachers often teach from their lineage (Oleson and Hora 2014), combined with strategies developed from positive personal experiences (Cox 2014). As a result, students may hear reference to a lineage (i.e., the "French School" or the "German Tradition"). However, current students are culturally diverse and removed from the geographical locations implied. Many entering higher education lack access to applied lesson teachers due to living in rural or low-income communities (Prest 2011). Moreover, though they may likely have been enrolled in a high school music elective, students' band, orchestra, and choir directors lack resources to support individualized instruction. The result is college students' lack of clarity regarding professors' expectations and professors' subjectivity to implicit bias in assessing student progress, impacting students' sense of belonging (Elliott 1995). The Transparency in Learning and Teaching (TILT) framework can improve the clarity of expectations and processes while reducing the teachers' subjectivity and, therefore, enhance students' sense of belonging.

Transparency in the applied music studio pertains specifically to the "what," "why," and "how" of the individual lesson assignments, as well as the overall course content. Transparency benefits all students, particularly those in underserved and neurodivergent populations and students unfamiliar with success strategies, the "unwritten expectations" of college, or, by extension, the studio lesson and learning environment. Transparent onboarding assignments will improve perceived and actual student competence (demonstrated through higher grades), and a higher sense of belonging (leading to retention and openness).

Utilizing the TILT framework for applied music studio repertoire preparation requires that, in addition to providing an effective and consistent process for all students, we consider the lived knowledge of the individual student (often provided by the student). One way to acquire this information is through a new student survey like the one provided

in Example 3: Voice Studio Onboarding Exercise. The best method of communication for each student may require some trial and error. Because each student is an individual, and we are not instructing them in a traditional classroom but in a studio or "laboratory" setting, we must adjust the expectations accordingly—our response is to use a TILT assignment template that allows for flexible, individualized expectations that also adhere to a broad and objective assessment model.

In the laboratory setting of the studio, the "assignment" is not necessarily a one-time turn-in but a semester-long process they will repeatedly undertake with end goals the student and instructor determine in tandem with one another. These goals might be malleable, and students' needs and challenges may change throughout their studies. Returning to the assignment template with each new repertoire piece allows for a renewed self-assessment each time. It fosters a process-oriented growth mindset rather than a results-oriented outcome (Claro, Paunesku, and Dweck 2016).

Applied music study often has a high attrition rate (Gavin 2012). Traditionally, this is framed as natural selection: only the truly talented and hard-working student will survive the first few years of study. Recently, teachers have begun to realize that many students' barriers (socioeconomic, accessibility, neurodivergence, etc.) are encountered long before their college study. These barriers may impact a teacher's perception of students' natural ability or work ethic. Rather than "weeding out" students we feel are unprepared, how can we foster students who may "think outside the box," approach learning or music in an untraditional way, or have different learning needs? Even students with a record of success in high school classes may need help with critical thinking and practice skills in this newly applied music context (Helding 2020).

Based on the authors' perspectives, the most significant barriers to new student success in the applied studio are the "unwritten expectations" of applied lesson preparation. Teachers often make assumptions about what incoming students know, their level of independence, and their facility with technical lingo or the technique itself (Cox

2014). In the discipline of music, it is possible, and somewhat common, that a student with raw talent can make successful and beautiful sounds and progress without knowing details of how their instrument or voice works, how to read music, or without any formal training whatsoever. The "unwritten expectations" often function as moving goalposts that the students must unthinkingly aim for, creating frustration, burnout, and attrition. These assumptions are particularly true among the more vulnerable collegiate populations: underserved minorities, first-generation students, and students from lower socioeconomic status backgrounds.

All students, but particularly these demographics, could benefit from a more transparent approach to "onboarding" in the studio, weekly assignments, methods of assessment, and the entire course of study. A transparent approach would also benefit teachers, as they cannot assume anything about a student's previous experiences: All students begin on a level playing field. As students progress through their studies, a transparent approach to goal setting, expectations, and assessment will help keep them on track from week to week and set clear parameters for a successful semester of study. The first step in this process is establishing the declarative portion of the information: Students must understand expectations. Second, they must understand how to meet those expectations and be involved in determining how that effort will be assessed. This clarity also helps to build autonomy from the beginning: If students are a part of the assessment conversation and process from the first step, they will be more willing and able to achieve the goals set forth (Helding 2014).

Research/Evidence That Informs This Approach

Little qualitative or quantitative research on the scholarship of teaching inside the traditional university music studio setting exists (Helding 2014). However, ample literature on instrumental and vocal pedagogy includes anatomical understanding (Pherigo 2014) and pedagogical theory (Wright and Froehlich 2012). About twenty years ago, due to developments in science and research, there was a shift in pedagogy from focusing on the information passed down from previous generations and schools (lineage) to evidence-based and scientifically informed pedagogy

(Helding and Ragan 2022; Moore 1988; Ragan 2018). Furthermore, emphasis arose on how a teacher might best communicate that information by introducing several teaching strategies. Alongside the focus on teaching, strategies appeared with an emphasis on objective and subjective assessment and assessment methodologies, including rubrics, self-reporting, and journaling (Asmus 1999; Wesolowski 2012). A more recent shift acknowledges how each student best receives information and increases efforts to identify and remove student barriers to success (Fetokaki 2023; Helding 2014; Helding 2020). An effective pedagogy today will require understanding and synthesis of approaches, awareness of the barriers to accessibility and equity in higher education for various student populations, and creativity in bridging those gaps.

The authors' primary concern is the experienced and witnessed classical music studio teacher's assumed knowledge of the student. Stephanie Cox (2014) confirmed not so much that teachers teach the way they were taught but that "teachers teach the way they themselves preferred to be taught or the way they think students learn best" (2). More accurately, a combination of faculty identity, individual characteristics, acquired knowledge over time, social context, and other personal influences determine how a faculty member teaches (Oleson and Hora 2014). Likewise, understanding that students have unique experiences that contribute to how they learn is critical to inclusive teaching.

A secondary but equally important consideration is that assessing musical skills has been historically subjective and likely influenced by implicit bias related to gender (Abeles and Porter 1978; Delzell and Leppla 1992; Griswold and Chroback 1981), socioeconomic class (the accessibility of private lesson costs due to financial means), pedigree (access to pre-college conservatory training due to location or cost), race (Elliott 1995), attractiveness (Purkiss 2017), and even the incorporation (or lack thereof) of body movement (Silveira 2014). Race and gender contribute to the listener's perceived preferences for performer and style (Fetokaki 2023; Purkiss et al 2006). Furthermore, teacher

expectations (influenced by race and gender) impact student performance, predominantly minority students (Rist 2000).

Author and teacher Lynn Helding has written many articles on cognition in the studio and adjusted the focus from how a teacher teaches to how a student learns (Helding 2014). Within some of her most recent articles, particularly written since the COVID-19 pandemic, she has acknowledged that some student populations are unaware of the "unwritten expectations" of music study at the collegiate level. She has attempted to rectify this situation by introducing more transparent expectations and a weekly journaling exercise, and this is where her research dovetails nicely with the TILTed pedagogy model. While her method, introduced in "Cognition in the Age of Corona," requires a weekly assignment turn-in from each student based on their activities in the practice room (Helding 2020), our TILTed onboarding assignment takes on a more wide-lens approach, introduced at the beginning of each term of study and laying out the process and expectations on the front end.

Application of Research to the TILTed Assignment

Our TILTed assignment is designed to be utilized with incoming students at the beginning of their study in an unfamiliar applied music studio to demystify instructor expectations. Our approach is one of transparent instructional design grounded in relevant research-based tasks. Through the provision of an assignment template, New Student Preliminary Preparation of Instrumental Wind or Vocal Performance Repertoire, we aim to 1) allow for repertoire assignment flexibility in response to variability in students' lived experiences, learning preferences, and neurodiversity; 2) reduce the impact of teachers' potential implicit bias related to expectations and assessment, and; 3) enhance students' confidence and success through the incorporation research-based assignment tasks. The template can be used with any applied student, regardless of degree plan, and in conjunction with any assigned music genre.

Music education is rich with evidence-based pedagogical practices for the K–12 and university music classrooms. However, university applied

studio teachers, whose personal education is rooted in performance, often could be more aware of this research base. Otherwise, they rely solely on their lived experience to inform their teaching (Oleson and Hora 2014). Such studies include practicing both slower than performance tempo (Allingham and Wöllner 2023) and faster than required tempos (Belkin and Eliot 1997), listening as a practice component, and score study (Ferrin 2023; Madaule 2001). Memorization, an often-required part of musical performance, is potentially enhanced by intentional memory retrieval practices (Telesco et al. 2021). Planned and systematic approaches to practice sessions lead to expertise (Hallam 2001; Rhoodie and du Toit 2020; Sikes 2013; Rainero 2012), and lastly, more frequent practice sessions spaced over a period of days, rather than fewer but lengthy practice sessions on a single day, promote retention and progress (Shea et al. 2000). These research-based practice strategies inform the assignment's seven detailed tasks.

The authors understand that the text-heavy nature of the TILTed assignment template may create challenges for neurodivergent students. For example, students with ADD or ADHD may find the volume of text overwhelming (Armes, Harry, and Grimsby 2022), and therefore, a simplified checklist is included at the beginning of the assignment. The authors also recognize that students may experience motivation for learning in different ways, and in response, have provided options for the presentation and/or demonstration of learning. Examples include the presentation of information through collages or Google Slides, using direct links to online resources in place of formal citations, the choice to use bullet points or prose, the opportunity to access recordings of the work in which they may see themselves represented, and the permission to develop a practice plan that works with their schedule and preferences for learning.

The balance of clarity of expectations with student autonomy will enrich the student preparation process. After completing several of these assignments in the first semester as part of the onboarding process for new studio members, students will be equipped to prepare repertoire

free of an assignment and in even more individualized ways in response to the discoveries made.

TILTed Assignment

Below are the details outlining the New Student Preliminary Preparation of Instrumental Wind or Vocal Performance Repertoire assignment.

Purpose

The purpose of this activity is to provide you with the initial steps in learning a new piece of repertoire. The measures include learning about the composer of the work to provide historical context and relevance, understanding the language of all terms and vocal text in the score to guide interpretation, listening to the work with the full score to create an aural understanding of the whole piece, making musical choices regarding phrasing, and anticipating the challenges you might encounter in learning and create a practice strategy to work through towards your performance of the work.

Task

Follow these steps:

1. At the top of the assignment, include your name, due date, and composer and title of the piece assigned. Beyond this information, you may be creative in formatting the required information. For example, you can create a physical or digital collage with music snippets and composer photos or make a slide deck using any tool such as Google Slides, PowerPoint, or Canva.
2. Provide a short biography of the composer: Include specific information about the work you are studying, if available (i.e., commissioner, premiere, compositional form). You may quote bibliographies, webpages, or other resources. Cite all sources. You may use citations or direct links to web pages as well as utilize bullet points, timelines, or prose.
3. If applicable, translate all foreign text and musical terms (and English words for which you are unfamiliar with the definitions)

in the solo part and the piano score. This will assist your collaborative pianist if you are studying an accompanied work. Use a Music Dictionary or a translation application such as Google Translate. For vocal texts, many online and print resources exist for your use. You will need to access or create both a poetic translation and a word-for-word translation of your sung text. Poetic translation sources include www.lieder.net and www.oxfordsong.org. Word-for-word translation sources include www.ipasource.com and Google Translate.

4. Find and listen to two recordings of the assigned work through either library resources or your preferred listening application such as Spotify, iTunes, YouTube*, etc.. Confirm that the artists you select are reputable by Googling their names, reading their bios, and noticing their affiliations (i.e., where they teach, the orchestras they play in/with, reviews, etc.). Reference recordings are suggested here to inspire creativity while also clarifying your understanding of phrasing and form in a broader context. Please do not use the recordings as a crutch to bypass the opportunity to hone your musical reading skills. Try to learn all the notes, rhythms, and textual components accurately, away from the recordings. Record the names of all performers (including the collaborative pianists), the names of the albums, and the online link, if applicable. Take a few moments to learn about the performers. Where are they from? What social identities do you see represented through the performers or their affiliations? Acknowledging the performers will assist you with recognizing and respecting our global community of musicians while enhancing awareness of representation. **YouTube performances can be a resource but understand that the availability of a recording on YouTube does not speak to the quality of its representation of the work. You are looking for performances you can trust to be accurate with pitches, rhythms, intonation, and diction as well as representative of a sonority and energy that inspires you.*

5. Part Markup: Utilize the two selected recordings to inform your initial musical choices.
    - On both parts, mark goal tempos for each movement or section of a work (i.e., quarter = 108).
    - On both parts, mark suggestions for all breaths to assist with your understanding of the musical phrasing (i.e., a comma or check mark between notes in the solo line).
    - On the solo part, mark musical gestures not indicated in the score (i.e., subtle crescendos or decrescendos, note lengths or accents, expressive moments of slowing or speeding up the tempo, or tone color considerations).

   Note that recordings referenced are not meant to dictate your performance choices. The combination of listening and score/part markup is intended to provide a more comprehensive preparation experience to enhance your practice efficiency and provide exposure to multiple interpretations.
6. Sightread your instrumental part or play the vocal part on the piano. Use the readthrough to identify technical and musical challenges specific to you. See below for examples of technical and musical challenges:
    - What scalar or chordal finger technique will be required (i.e., octatonic scales, diminished 7th chords)?
    - What are the articulation challenges (double/triple tonguing, staccato, etc.)?
    - Are there long flourishes that can be subdivided?
    - What are the rhythmic challenges (ties, triple to duple subdivision, rhythmic dissonance, etc.)?
    - What are the dynamic or register demands (embouchure flexibility, projection, vibrato, etc.)?

      Vocal considerations:
    - What vowels might need to be modified at the extremes of the registers?
    - What diction considerations might there be dependent on rhythmic content or articulation instructions?

    - Do you immediately notice any instances of text painting? How might you use your technical skill to deliver that to the audience?

   Note this list is not exhaustive. Each piece will come with unique challenges.
7. Based on the information in Task 6, create a practice plan incorporating skill development outside the repertoire.
    - Consider the timeframe you have available for preparation. If you need to secure a collaborative pianist for the performance, please complete the appropriate process outlined on the School of Music website.
    - Identify your foundation tempo(s) (the tempo at which you can play or sing the part or sections accurately now) and your goal (performance) tempos. Plan a progression of tempo goals over your given timeframe. (Depending on the context, this could be days, weeks, or months.)
    - Pull together resources or practice methods to enhance your practice.
    - Instrumental examples: Etudes or methods that address a specific technical requirement, articulation exercises, vibrato exercises, intonation exercises, practice rhythms
    - Vocal examples: Turning a tricky intervallic pattern into a vocalise, sing the melody on a neutral syllable, sing the melody using vowels only, separating the text from the music and performing it as a monologue, performing only the translation as a monologue

Table 10.1. Assignment Checklist by Task

Complete	Task	Description
	1	Name, due date, composer, and title
	2	Short biography of the composer (with cited sources)

Complete	Task	Description
	3	Translate all foreign text for all parts
	4	Find 2 recordings and document performers
	5	Part Mark-up: goal tempo, breath marks, musical gestures
	6	Identify technical and musical challenges through sightreading
	7	Create a practice plan

Criteria

Due Date: _____

Timeline for Completion: One to three weeks as determined between the student and teacher based on individual performance dates and goals. (For example, a single-movement work may require less time to research and prepare than a multiple-movement work.)

Table 10.2. Assignment Criteria

	0 Points	2-4 Points	5 Points
Composer Biography	Did not prepare a composer biography.	Prepared a composer biography but did not cite sources.	Prepared a well-researched composer biography and cited references.
Translation of Foreign Terms or Text	Did not translate any unfamiliar terms or text	Translated some but not all unfamiliar terms. Created a poetic translation but did not create a word-for-word translation	Translated all unfamiliar terms. All text was translated both word-for-word and poetically.

	0 Points	2-4 Points	5 Points
Two Recordings	Did not listen to two recordings.	Listened to two recordings but did not include performer names or links OR recordings were not reputable.	Listened to two reputable recordings and recorded all performer names with links (if applicable).
Part Markup	Did not complete part markup.	Marked some but not all tempos, breaths, and gestures but did not demonstrate adequate listening or application of listening to musical choices.	Marked tempos, breaths, and gestures and demonstrated thorough listening and application.
Identified Challenges	No challenges were considered.	Identified some but not all challenges but did not demonstrate adequate study.	Identified challenges at a level that demonstrates thorough study.
Practice Plan	No practice plan was created.	Identified some areas for practice but did not identify specific methods or exercises. No clear plan for practice is demonstrated.	Identified skills to be developed specific to the work and collates exercises and/or methods into one location for ease of practice. A clear set of practice goals is demonstrated.

	0 Points	2-4 Points	5 Points
Total Possible	0	12 - 24	30

The grade is assigned based on a rounded 100-point scale.
For example:

21 out of 30 = 70%
24 out of 30 = 80%
30 out of 30 = 100%

Critical Reflection of the TILTed Assignment

I, Lisa, first utilized the Transparent Onboarding Assignment in the spring of 2023 with three graduate students—two master's students and one doctoral student. All were working on different levels of repertoire and had varying levels of prior preparation skills. The thoroughness of completing each task varied slightly from student to student. Two areas were of note: 1) the Part Mark-up and 2) the Practice Plan.

Some students' part markup was thoughtful and extensive, while others were scarce, particularly regarding "musical gestures." From my perspective, one of the aims of the part markup is to encourage the student to explore the musical opportunities on the printed page and, more importantly, beyond them. To provide greater transparency around this part of the assignment we have included two thorough part markup examples, one vocal and one instrumental (Example 1 and Example 2).

The practice plans were also quite revealing regarding students' individual experiences in self-guided preparation. Some plans were very general, only expressing the bare minimum outlined in the assignment template. Others were precise and included fine details, such as incremental changes in daily tempo goals. I did notice correlations between the completeness of a practice plan and the level of preparation (more detail resulted in higher preparation). This potentially points to each student's accessibility, or lack of accessibility, to past teachers who were explicit in their expectations for preparation. Offering an example of an effective practice plan (Example 4) could clarify this task for future students.

Without question, the level of repertoire preparation prior to the students' scheduled applied lessons was unprecedented and exceptionally high. The clarity of the assignment, coupled with the assessment rubric, resulted in a perceived higher level of student confidence and an acceleration in repertoire preparation progress. By reviewing each student's completed assignment, I could better understand their established preparation habits and note which students required additional guidance. Furthermore, I gathered student evaluative feedback on the assignment through an informal email. I have included some examples with students expressed and written permission:

> "... it [the TILTed assignment] helped me fully understand how much needed to be done for each piece in the time that I have left before the performance. I have good intentions of doing everything asked of me in this assignment, but I rarely do all of these things from the very start of my learning."

> "With the TILT assignments, my clarity of expectations has increased greatly. They've helped organize knowledge of repertoire and related information in one place, and creating written practice plans helps keep things in perspective."

I, Alice, began implementing some of these teaching strategies in the spring of 2023. My voice studio consists of students from first-year undergraduate to third-year doctoral level. Also included in the roster were several "new-to-me" students who had not taken lessons with me prior to that semester, two first-generation students, and at least four neurodivergent students. I implemented a two-week score preparation assignment that was very similar to the attached assignment, with an added component of lesson and practice journaling. The students were to follow the assignment for two weeks, after which we would track individual progress and discuss its perceived efficacy.

Due to the short duration of the assignment and the timing within the semester, my students experienced the assignment in various ways. My "established" students who had been in my studio for two years or more felt this assignment was unnecessary or redundant to what they were already doing. This is likely because the assignment, while detailed, laid out precise expectations for the preparation and execution of the assigned task; these established students had been with me long enough already to know and understand what the expectations were, hence the feeling of redundancy. The more interesting results, however, were among those students from more vulnerable populations. Across the board, my new, younger, first-generation, and neurodivergent students were enthusiastic about the assignment and felt like their progress skyrocketed during those two weeks. Many of them asked if the assignment could be repeated or extended for the remainder of the semester because they found it so helpful.

These outcomes precisely align with our thesis: that students who might not already understand studio expectations will benefit from this exercise in transparency in teaching. While the experienced students no longer found the assignment necessary, had this procedure been in place when they first joined the studio, it is likely that their early gains would have been faster, larger, and perhaps less frustratingly won.

Modifying, Adapting, or Applying this Assignment to Other contexts

The New Student Preliminary Preparation of Instrumental Wind or Vocal Performance Repertoire assignment would lend itself well to any of the performing and visual arts and can be directly applied to such study. Demystifying the preparation process for intention-driven creative endeavors would benefit students in theater and dance, as well as painting, sculpture, and other visual art. Likewise, any course that requires a performance element (such as public speaking, for example) would likely find useful elements within this assignment.

In addition, any one-on-one interactions with students might benefit from this type of preparation and planning: independent studies, graduate

theses/dissertation preparation, or any type of Oxford tutorial instruction. Not only do these assignments adhere to the transparent teaching model, but they also allow students to self-pace their studies throughout the semester. When clear guidelines and expectations are communicated, students can exercise more agency over the learning experience. This agency can improve learning and retention outcomes and increase student engagement and independence (Margolis 2024).

References

Abeles, Harold F., and Susan Yank Porter. 1978. "The Sex-Stereotyping of Musical Instruments." *Journal of Research in Music Education* 26 (2): 65–75. https://doi.org/10.2307/3344880.

Allingham, Emma, and Clemens Wöllner. 2023. "Putting Practice Under the Microscope: The Perceived Uses and Limitations of Slow Instrumental Music Practice." *Psychology of Music* 51 (3): 906–23. https://doi.org/10.1177/03057356221129650.

Armes, Jocelyn W., Adam G. Harry, and Rachel Grimsby. 2022. "Implementing Universal Design Principles in Music Teaching." *Music Educators Journal* 109 (1): 44–51. https://doi.org/10.1177/00274321221114869.

Asmus, Edward P. 1999. "Music Assessment Concepts." *Music Educators Journal* 86 (2): 19–24. https://doi.org/10.2307/3399585.

Belkin, David S., and John F. Eliot. 1997. "Motor Skill Acquisition and the Speed-Accuracy Trade-Off in a Field-Based Task." *Journal of Sport Behavior* 20 (1): 16–28.

Claro, Susana, David Paunesku, and Carol S. Dweck. 2016. "Growth Mindset Tempers the Effects of Poverty on Academic Achievement." *Proceedings of the National Academy of Sciences* 113 (31): 8664–68. https://doi.org/10.1073/pnas.1608207113.

Cox, Stephanie Elizabeth. 2014. *Perceptions and Influences Behind Teaching Practices: Do Teachers Teach as They Were Taught?* Master's thesis, Brigham Young University. BYU ScholarsArchive. https://scholarsarchive.byu.edu/etd/5301.

Delzell, Judith K., and David A. Leppla. 1992. "Gender Association of Musical Instruments and Preferences of Fourth-Grade Students for Selected

Instruments." *Journal of Research in Music Education* 40 (2): 93–103. https://doi.org/10.2307/3345559.

Elliott, Charles A. 1995. "Race and Gender as Factors in Judgments of Musical Performance." *Bulletin of the Council for Research in Music Education* 127: 50–56.

Felten, Peter, and Ashley Finley. 2019. *Transparent Design in Higher Education Teaching and Leadership*. 1st ed. Routledge. https://doi.org/10.4324/9781003448396.

Ferrin, Jordan. 2023. "Regarding Musical Understanding and Aural Learning from the Introduction of Audiation to Novice Jazz Students." *Jazz Education in Research and Practice* 4 (1): 112–31.

Fetokaki, Sophie. 2023. "Whiteness, Interpellation, and Embodied Technique in Western Classical Vocal Pedagogy." *Music Education Research* 25 (3): 319–29. https://doi.org/10.1080/14613808.2023.2222288.

Gavin, Russell B. 2012. "An Exploration of Potential Factors Affecting Student Withdrawal from an Undergraduate Music Education Program." *Journal of Research in Music Education* 60 (3): 310–23. https://doi.org/10.1177/0022429412454662.

Griswold, Philip A., and Denise A. Chroback. 1981. "Sex-Role Associations of Music Instruments and Occupations by Gender and Major." *Journal of Research in Music Education* 29 (1): 57–62. https://doi.org/10.2307/3344680.

Hallam, Susan. 2001. "The Development of Metacognition in Musicians: Implications for Education." *British Journal of Music Education* 18 (1): 27–39. https://doi.org/10.1017/S0265051701000122.

Helding, Lynn. 2020. "Cognition in the Age of Corona: Teaching Students How to Learn." *Journal of Singing* 77 (2): 249–59.

Helding, Lynn. 2014. "Teaching Voice with the Brain in Mind." *Journal of Singing* 70 (3): 349–54.

Helding, Lynn. 2013. "Mindful Voice: Memory, Hither Come." *Journal of Singing* 69 (3): 337–44.

Helding, Lynn, and Kari Ragan. 2022. "Evidence-Based Voice Pedagogy (EBVP), Part 3: Student Goals and Perspectives." *Journal of Singing* 78 (5): 635–40. https://doi.org/10.53830/LOGC7063.

Madaule, Paul. 2001. "Listening and Singing." *Journal of Singing* 57 (5): 15–20.

McKinney, James C. 2005. *The Diagnosis & Correction of Vocal Faults: A Manual for Teachers of Singing & for Choir Directors. Reissue with CD*. Waveland Press.

Moore, Dale. 1988. "A Look Ahead with Thoughts of the Past." *Journal of Singing* 44 (4): 3–5.

Oleson, Amanda, and Matthew T. Hora. 2014. "Teaching the Way They Were Taught? Revisiting the Sources of Teaching Knowledge and the Role of Prior Experience in Shaping Faculty Teaching Practices." *Higher Education* 68 (1): 29–45. https://doi.org/10.1007/s10734-013-9678-9.

Pherigo, Johnny L. 2014. "Science and Medicine: What Every Musician Needs to Know About the Body—An Introduction to Body Mapping." *The Horn Call* 45 (1): 92.

Prest, Anita. 2011. "Challenges and Place-Based Solutions in Rural Music Education: A UBC Study Sponsored by the Rix Family Foundation." Paper presented at the University of British Columbia 14th Annual IOP Conference, 2.

Purkiss, Ava. 2017. "'Beauty Secrets: Fight Fat': Black Women's Aesthetics, Exercise, and Fat Stigma, 1900–1930s." *Journal of Women's History* 29 (2): 14–37. https://doi.org/10.1353/jowh.2017.0019.

Ragan, Kari. 2018. "Voice Pedagogy: Defining Evidence-Based Voice Pedagogy: A New Framework." *Journal of Singing* 75 (2): 157–58.

Rainero, Ruth. 2012. "Practicing Vocal Music Efficiently and Effectively: Applying 'Deliberate Practice' to a New Piece of Music." *Journal of Singing* 69 (2): 203–14.

Rhoodie, Hester, and Simon-Petrus du Toit. 2020. "Exploring the Efficacy of Deliberate Practice and Memorisation Skills in the Process of Learning Debussy's L'Isle Joyeuse: A Practice-Led Study." *Muziki: Journal of Music Research in Africa* 17 (2): 51–70. https://doi.org/10.1080/18125980.2021.1918020.

Rist, Ray. 2000. "Student Social Class and Teacher Expectations: The Self-Fulfilling Prophecy of Ghetto Education." *Harvard Educational Review* 70 (3): 257–301.

Segrest Purkiss, Sharon L., Pamela L. Perrewé, Treena L. Gillespie, Bronston T. Mayes, and Gerald R. Ferris. 2006. "Implicit Sources of Bias in

Employment Interview Judgments and Decisions." *Organizational Behavior and Human Decision Processes* 101 (2): 152–67. https://doi.org/10.1016/j.obhdp.2006.06.005.

Shea, Charles H., Qin Lai, Charles Black, and Jin-Hoon Park. 2000. "Spacing Practice Sessions across Days Benefits the Learning of Motor Skills." *Human Movement Science* 19 (5): 737–60. https://doi.org/10.1016/S0167-9457(00)00021-X.

Sikes, Paul L. 2013. "The Effects of Specific Practice Strategy Use on University String Players' Performance." *Journal of Research in Music Education* 61 (3): 318–33. https://doi.org/10.1177/0022429413497225.

Silveira, Jason M. 2014. "The Effect of Body Movement on Listeners' Perceptions of Musicality in Trombone Quartet Performance." *International Journal of Music Education* 32 (3): 311–23. https://doi.org/10.1177/0255761413491210.

Telesco, Paula, Meltem Karaca, Hannah Ewing, Kelsey Gilbert, Sarah Lipitz, and Jude Weinstein-Jones. 2021. "Does Retrieval Practice Enhance Memorization of Piano Melodies?" *College Music Symposium* 61 (2): 1–23.

Wesolowski, Brian C. 2012. "Understanding and Developing Rubrics for Music Performance Assessment." *Music Educators Journal* 98 (3): 36–42. https://doi.org/10.1177/0027432111432524.

Wright, Ruth, and Hildegard Froehlich. 2012. "Basil Bernstein's Theory of the Pedagogic Device and Formal Music Schooling: Putting the Theory into Practice." *Theory into Practice* 51 (3): 212–20. https://doi.org/10.1080/00405841.2012.690307

CHAPTER 11

Synthesizing, Reflecting, Applying, And TILTing Course Content

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Navigation Tools

What: Synthesis, Reflection & Metacognition
Where: Interdisciplinary & Integrative

Content synthesis not only allows opportunities for students to reflect on course content, it also allows learners to revisit and (re)engage with key concepts, core curriculum, and potential gaps in understanding, resulting in deeper and more meaningful learning. This chapter will describe a synthesis of learning assignment in a graduate course focused on adult learning theories and the scholarship of teaching and learning. This assignment requires students to select and use a scholarly framework, connect theory and practice, and demonstrate critical analysis, and self-evaluation as learners apply what they are learning to their personal and professional lives, and reflect on the meaning-making processes that are an integral part of powerful learning experiences.

Description of Teaching/Learning Context

I teach a course called Historical and Theoretical Foundations of the Scholarship of Teaching and Learning within the Jane and Ron

Graham Centre for the Scholarship of Teaching and Learning, which launched in September 2022. The centre is housed within the College of Education at the University of Saskatchewan in Canada. The University of Saskatchewan's (USask) main campus is in the city of Saskatoon on Treaty 6 territory and the traditional homeland of the Métis. Approximately 26,000 students from 130 countries attend USask, of which over 3,400 students are self-declared indigenous students, 4,300 graduate students, and 3,100 international students (About Us, n.d.). The Jane and Ron Graham Centre for SoTL offers three distinct programs: the Certificate in the Scholarship of Teaching and Learning; Master of the Scholarship of Teaching and Learning; and launching the first cohort of students in September 2024 is the Cross-Departmental PhD in Education with a Scholarship of Teaching and Learning Focus (Our Graduate Programs, n.d.).

The Scholarship of Teaching and Learning (SoTL) as a field has been used in a variety of contexts and formats including through informal networks of peers, classrooms, and institutions (Frake-Mistak et al. 2020; Friberg et al. 2021; Huber 2009). In my course, I align my definition of SoTL with Potter and Kustra (2011) who describe SoTL as a study of teaching and learning that uses "established or validated criteria of scholarship, to understand how teaching (beliefs, behaviours, attitudes, and values) can maximize learning, and/or develop a more accurate understanding of learning, resulting in products that are publicly shared" (2). A defining feature of SoTL, from other forms of research, is the dissemination of one's findings publicly to inform the broader SoTL and educational community (Felten 2013).

The course described in this chapter is an asynchronous course where students complete a new module every two weeks. Students enter the course at varying times in their graduate studies, many of whom have never heard of or are learning about SoTL for the first time. Bearing this in mind, I wanted to develop an assessment plan that would encourage growth and development in SoTL, as well as in building critical and analytical skills. Moreover, I wanted each student to complete the course with a clearer sense for themselves how SoTL is

not only relevant to their respective professional worlds but the diversity of approaches and disciplinary perspectives of SoTL.

Because of the range of SoTL experience in this course, it was essential to develop an assignment that was transparent in terms of engagement with SoTL literature and ongoing issues and discussions, as well as how it can and will inform one's practice moving forward. An assignment, such as the Synthesis of Learning assignment, challenged students to engage deeply and personally with SoTL literature, without specifying limitations to their thinking or application to one's professional life. In so doing, they were required to reflect on the meaning-making processes that are an integral part of powerful learning experiences, and therefore in effort to form/find linkages between the course content and their own life. Thus, the TILT framework was ideal for this assignment and to support students in their achievement of the course learning outcomes.

Content synthesis not only allows opportunities for students to reflect on course material, but it also allows learners to revisit and (re)engage with key concepts, core curriculum, and potential gaps in understanding, resulting in deeper and more meaningful learning (Chalmers et al. 2002). This assignment requires students to select and use a scholarly framework, connect theory and practice, and demonstrate critical analysis, and self-evaluation as learners apply what they are learning in real-time to their personal and professional lives, and reflect on the meaning-making processes that are an integral part of powerful learning experiences. They are also carefully edited (curated, one might say) to include only the essential elements to tell a compelling story of one's learning over the term.

Research/Evidence That Informs This Approach

As the director of a teaching and learning centre and course instructor in postsecondary education, I take the view that assessment is closely interlinked with other key components of my course design, and that assessment should be considered within this context. Taking a student-centered approach (McCombs and Whisler 1997; Trigwell, Prosser, and Waterhouse 1999), I ground my assessment plan by envisioning

what students should achieve (learning outcomes), otherwise known as using a backward design approach (Huston 2009). Although most commonly associated with Bloom's Taxonomy (Anderson and Krathwohl 2001), synthesis and application further align with Knowledge Translation (KT) and Universal Design for Learning (UDL).

Knowledge Translation (KT) is defined as the exchange, synthesis, and application of knowledge (Thomas et al. 2014) and consists of two key concepts: the creation of knowledge and the use of knowledge (Nowell and Friberg 2022). KT is a term, frequently used in health service research and healthcare-related professions to conceptualize an active learning process believed to take place through social and environmental interactions, resulting in a knowledge exchange (Thomas et al. 2014), or the shifting of research findings into action (Graham et al. 2006). In other words, knowledge is moved beyond the action of knowledge dissemination to the application and authentic use of that knowledge by others (Nowell and Friberg 2022). A defining feature of SoTL, from that of scholarly approaches to teaching, is the dissemination of one's findings publicly to inform the broader SoTL and educational community (Felten 2013), or what Graham (2006) refers to as the knowledge-to-action cycle. For the purposes of the Synthesis of Learning assignment, I believe that KT can not only assist my students, many of whom are new to SoTL, engage with SoTL literature but can further offer a platform to understand, interpret, and reflect on course content.

In my conception of the assignment, I took a proactive student-centred approach, where I considered the needs of my students in my assessment strategy. UDL offers one such framework to assist in designing courses, including assessments, that are accessible and take into consideration the needs of as many different students as one can. The three principles of UDL are multiple means of action and expression, multiple means of representation, and multiple means of engagement (UDLGuidelines.Cast.Org). Although multiple means of action and expression is the principle most directly aligned with assessment, the other two are relevant to assessment, as they provide support for student

learning and assessment. Multiple means of action and expression involves considering different ways that students can demonstrate their learning, understanding, and completion of assessment tasks to achieve the learning outcomes.

Applying Universal Design for Learning means that within assessment design I considered multiple means of action and expression. That is, a variety of ways for students to demonstrate their achievement of the learning outcomes. Application of Universal Design for Learning is flexible. As such, I sought to provide my students with a choice and offer different ways to express themselves on the same assessment (e.g., giving a presentation, creating a video, writing a report, creating an infographic). I endeavour to embed this approach across my entire assessment plan. Implementing UDL in doing so may involve a variety of ways for students to express themselves on different assessments (e.g., one learning outcome of the course requires that students write a report, while for other learning outcomes students may be required to give a presentation, or make a video, or podcast, and on another assignment, keep a reflective journal).

Application of Research to Develop This Assignment

Regarding formatting in how students present their Synthesis of Learning assignment, my goal was to provide students with the agency and flexibility to choose a modality that would best represent/allow them to reflect their learning journeys. In utilizing the UDL framework in alignment with KT, students had free range to select a format that best allowed them to demonstrate their learning synthesis of SoTL across the course. This could have been, but was not limited to, a paper, a website, a short video, a visual representation, or music piece. Doing so was to improve and personalize the learning process for all students (Capp 2017).

Allowing students to engage with the content for two weeks at a time before commencing the next module was purposeful. My goal was to allow each student sufficient time to establish a deeper connection to the content and work through the cognitive domain of Bloom's Taxonomy (Anderson and Krathwohl 2001). Each module consisted

of different readings, videos, and participatory activities to engage more fulsomely with how course material may become a part of their ongoing and future work within an educational realm, as well as to build a deeper sense of community with other students, despite the expansive geography between many of us. Throughout the course, we met synchronously as a cohort to connect with one another, and to pose and discuss questions about readings and assignments.

One of the guiding principles of the course, and particularly in this cumulative assignment, is that students are encouraged to apply what they are learning to their respective personal and professional lives, bearing in mind that most students are entering the course with a disciplinary focus on education, and to reflect on the meaning-making processes that are an integral part of powerful learning experiences. I ask them to think about the myriads of linkages and connections that they see, experience, and engage with between the course content and their own lives.

To help students prepare for this assignment, as it is weighty both in terms of workload to completion and grade, we discuss possible sources for their ongoing reflections during the first synchronous session. Students may consider keeping a learning journal as they move through the course, recording their personal reflections each week, enabling them to have notes to draw on as they begin to synthesize their overall learning at the end of the course. Alternatively, students may find it more useful to take notes each week that address how the readings and discussions are helpful to their practice and what new questions they raise. Lastly, students may think about their conversations and forum discussions within the online platform. These exchanges may provide additional avenues for students to review and reflect upon when preparing their assignment for the end of term submission.

When assessing each assignment, there are key elements that I am looking for students to communicate—all of which are articulated to students in the description of the assignment and are reiterated during our first synchronous meeting. Furthermore, I share my expectations openly with students:

- What have you learned and how you can use it? You may wish to return to your initial learning map and amend it.
- How have you changed and how do you still wish to grow?
- What models and theories will help you?
- So what? (Why does all this matter? Not only to you, but to others?)
- Now what? (What will your contribution be?)
- Link each of these to the scholarly literature
- A direct connection to each of the course learning outcomes

Projects that draw upon a scholarly framework, connect theory and practice, and demonstrate critical analysis, synthesis, and self-evaluation, are what I consider to be exemplary. The assignments should also be carefully edited or curated to include only the essential elements to tell a compelling story of their learning over the term. With recognition that some students are completing their master's and doctorates in education, these skills are fundamental in their learning journey as graduate students and should be supported across courses.

TILTed Assignment

Below are details outlining the Synthesis of Learning assignment.

Purpose

In this course, one of the guiding principles is that you are encouraged to apply what you are learning to your personal and professional life, and to reflect on the meaning-making processes that are an integral part of powerful learning experiences. This is where you connect the dots between the course content and your own life.

Task

Possible sources for your reflections include:

- Start by keeping a learning journal as you move through the course, recording your reflections each week so you will have notes to draw on.

- Notes each week that address how the readings and discussions are helpful to your practice and what new questions they raise. Try to record insights (!) and questions (?) for each week.
- Course readings and videos (and others outside the course) and forum discussions

Choose a format that best allows you to demonstrate your learning synthesis. This might be (but is not limited to) a paper, a website, a short video, an art or music piece.

Criteria

Consider these questions:

- What have you learned and how you can use it? You may wish to return to your initial learning map and amend it.
- How have you changed and how do you still wish to grow?
- What models and theories will help you?
- So what? (Why does all this matter? Not only to you, but to others?)
- Now what? (What will your contribution be?)
- A direct connection to each of the course learning outcomes

Exemplary projects use a scholarly framework, connect theory and practice, and demonstrate critical analysis, synthesis, and self-evaluation. They are also carefully edited (curated, one might say) to include only the essential elements to tell a compelling story of your learning over the term.

Critical Reflection of the TILTed Assignment

This assignment causes students to be stressed at first glance—I share and discuss this openly during our synchronous sessions and when students reach out individually to me for clarification. When this approach to teaching and learning stands in opposition to previous classroom experiences, it can be jarring and create further anxiety. In knowing this, I designed the Synthesis of Learning assignment to allow students to demonstrate course learning in a personal and relative way to their context. This means having to step beyond what may be considered

more typical or conventional in assignment completion. My goal was for students to shape and then share their thoughts with me, and not vice versa. From my point of view, having now gone through the process of explaining, experiencing, and then grading, asking students to think through meaningfully and then engage with the subject matter in a way that makes sense to them aligns with the very ethos of knowledge construction. I don't want students to simply regurgitate what the literature says—I know what it says, and I know what it means to me and my own practice. I want to learn from each of my students, their unique ways of understanding and making connections to their lifeworld experiences (van Manen 1997).

I was immensely impressed with the outcome of the students' work in this assignment. The depth and breadth of understanding of course content and inquiry that students demonstrated in the Synthesis of Learning assignment was unparalleled. It was very clear through the student work that time, care, thoughtfulness, and criticality were employed. Moreover, what I enjoyed most about the process were the connections between readings and other elements of the course that I had not considered previously. Extending my own learning is, in my opinion, one of the greatest gifts in teaching.

In every effort not to be overly prescriptive with this assignment, intending students to reflect their own levels of understanding, to give agency in their respective learning journeys, and demonstrate breadth and depth of learning through a medium of their choosing, the feedback I received from students was that more specificity and direction would have been appreciated. I can validate this based on the calibre of work that was submitted. It was indeed evident that far more time was spent on the creation of this assignment, rather than the focus being on the actual learning, which I deem as somewhat problematic. My intention was for students to focus on the process of synthesizing their knowledge through connection making and inquiry, less than the mechanism through which they would be showcasing their work. To this end, I will endeavour to provide a greater level of specificity, both within the assignment description and in my

discussions with students. Having now gone through this process and received student feedback, I am better enabled to be more proactive about potential challenges and complexities of the assignment.

Modifying, Adapting, or Applying This Assignment for Other Contexts

The Synthesis of Learning assignment could easily be translated to any teaching and learning context, discipline, and at any level of education with minor tweaking. Although this assignment could be implemented in any size course, my recommendation is that an instructor seriously consider the time an instructor must assess and provide in-depth feedback to each student. If you have several Teaching Assistants to support you, then this assignment may be a worthy inclusion. Conversely, if you teach in a more intimate seminar/tutorial classroom, this may be an easier assignment to implement in terms of your overall grading workload.

One possibility worth experimentation is the implementation of this assignment into a more conventional introduction to general education class, whereby instructors might ask students to reflect and synthesize their learning, and how the content is meaningful to their educational career, personal lives, or even to help students make connections to the content beyond the course. As a cumulative assignment, an instructor might consider incorporating additional activities and opportunities for engagement to support student learning as they work towards the end of term. Peer feedback, as one example, will provide students with low-risk opportunities to talk through their work and to hear from others new and diverse perspectives on the same readings and approaches to understanding. Peer-feedback may be done formally, for grades, or through more informal practices such as frequent touch points during class time or online.

To narrow the scope of this assignment, an instructor may consider limiting the focus to a specific number of articles or resources. This may be useful for students in their first or second year of postsecondary education who may not necessarily have a great deal of experience

synthesizing information or applying knowledge to contexts. Alternatively, this may be a useful approach for instructors with larger class sizes as it will limit the amount of time required to assess and provide detailed feedback to students.

References

University of Saskatchewan. n.d. "About Us." https://www.usask.ca/about/index.php.

Anderson, Lorin W., and David R. Krathwohl, eds. 2001. *A Taxonomy for Learning, Teaching, and Assessing: A Revision of Bloom's Taxonomy of Educational Objectives*. Longman.

Capp, Matthew J. 2017. "The Effectiveness of Universal Design for Learning: A Meta-Analysis of Literature between 2013 and 2016." *International Journal of Inclusive Education* 21 (8): 791–807. https://doi.org/10.1080/13603116.2017.1325074.

Chalmers, Iain, Larry Hedges, and Harris Cooper. 2002. "A Brief History of Research Synthesis." *Evaluation & the Health Professions* 25 (1): 12–37. https://doi.org/10.1177/0163278702025001003.

Felten, Peter. 2013. "Principles of Good Practice in SoTL." *Teaching & Learning Inquiry* 1 (1): 121–25. https://doi.org/10.2979/teachlearninqu.1.1.121.

Frake-Mistak, Mandy, Heidi Marsh, Geneviève Maheux-Pelletier, and Siobhan Williams. 2020. "Making SoTL Stick: Using a Community-Based Approach to Engage Faculty in the Scholarship of Teaching and Learning." In *Evidence-Based Faculty Development Through the Scholarship of Teaching and Learning*, edited by Michelle L. Amos and Rachel C. Plews. IGI Global.

Friberg, Jennifer, Mandy Frake-Mistak, Ruth Healey, Shannon Sipes, Julie Mooney, Stephanie Sanchez, and Karena Waller. 2021. "A Developmental Framework for Mentorship in SoTL Illustrated by Three Examples of Unseen Opportunities for Mentoring." *Teaching & Learning Inquiry* 9 (1). https://doi.org/10.20343/teachlearninqu.9.1.26.

Graham, Ian D., Jo Logan, Margaret B. Harrison, Sharon E. Straus, Jacqueline Tetroe, Wenda Caswell, and Nicole Robinson. 2006. "Lost in Knowledge Translation: Time for a Map?" *Journal of Continuing Education in the Health Professions* 26 (1): 13–24.

CAST. n.d. "Universal Design for Learning Guidelines Version 2.2." Accessed August 30, 2023. https://udlguidelines.cast.org/

Huber, Mary T. 2009. "Teaching Travels: Reflections on the Social Life of Classroom Inquiry and Innovation." *International Journal for the Scholarship of Teaching and Learning* 3 (2): Article 2. https://doi.org/10.20429/ijsotl.2009.030202.

Huston, Teresa A. 2009. *Teaching What You Don't Know*. Harvard University Press.

McCombs, Barbara L., and Jo Sue Whisler. 1997. *The Learner-Centered Classroom and School: Strategies for Increasing Student Motivation and Achievement*. Jossey-Bass.

Nowell, Lorelli, and Jennifer C. Friberg. 2022. "The Scholarship of Teaching and Learning and Knowledge Translation." In *Going Public Reconsidered*, 76–88. Routledge.

University of Saskatchewan College of Education. n.d. "Our Graduate Programs." https://education.usask.ca/grahamcentresotl/programs.php.

Potter, Michael K., and Erika Kustra. 2011. "The Relationship between Scholarly Teaching and SoTL: Models, Distinctions, and Clarifications." *International Journal for the Scholarship of Teaching and Learning* 5 (1).

Thomas, Aliki, Anita Menon, Jill Boruff, Ana Maria Rodriguez, and Sara Ahmed. 2014. "Applications of Social Constructivist Learning Theories in Knowledge Translation for Healthcare Professionals: A Scoping Review." *Implementation Science* 9: 1–20.

Trigwell, Keith, Michael Prosser, and Fiona Waterhouse. 1999. "Relations between Teachers' Approaches to Teaching and Students' Approaches to Learning." *Higher Education* 37: 57–70.

van Manen, Max. 1997. *Researching Lived Experience: Human Science for an Action Sensitive Pedagogy*. Althouse Press.

CHAPTER 12

Knowledge Surveys

Developing Self-Assessment, Integrating Effective Learning Strategies, and Enhancing Transparency to Support Student Success

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Navigation Tools

What: Synthesis, Reflection & Metacognition
Where: STEM & Social Sciences

Disclaimer: The views expressed in this chapter are those of the authors and do not necessarily reflect the official policy or position of the United States Air Force Academy, the Air Force, the Department of Defense, or the U.S. Government. Approved for public release: distribution unlimited, USAFA-DF-2023-617.

Knowledge surveys (KS) foster transparency in learning and teaching by providing students with explicit and specific ability statements of learning objectives. Students rate their confidence in their ability to answer the KS items, which helps develop self-assessment skills, and engages students in behaviors shown to enhance deep learning: spaced practice and retrieval. When instructors intentionally design KS into a course, they promote alignment of stated expectations with activities and assessments. Instructor access to student self-assessment accuracy also supports individualized conversations with students about their learning strategies and attitudes as well as their performance on summative assessments. We have found the incorporation of KS to be flexible and robust, observing benefits across a variety of disciplines and course levels. Feedback indicates that the vast majority of students value KS, use them to guide learning and study for exams, and recommend that instructors continue to incorporate KS in future courses.

Description of Teaching/Learning Context

Do you wish your students paid closer attention to the lesson objectives and used them to guide their learning? Do your students ask for study guides before the exams? Do your students ever claim that they studied a lot and thought they were prepared for an exam, but then performed poorly? Do your students ever say they were surprised by what was asked on an exam?

These are the types of circumstances that motivated a group of us to begin implementing knowledge surveys (KS) in 2018. KS are a self-assessment tool founded on transparency of learning expectations (Nuhfer 1993). KS ask students to answer a set of learner-focused ability statements, generally in a multiple-choice format, that actively promote student reflection about their ability to accomplish the learning objectives, e.g., "I have full/limited/no ability to [objective]." KS questions can be used to promote self-assessment of a wide variety of types of learning related to both content and skills.

The initial motivation behind implementing KS in our courses varied across faculty members, but generally focused on helping students 1) focus more clearly on course objectives, 2) see the value of self-assessment in their own learning, and 3) become better learners through application and development of self-assessment skills. This chapter will focus on implementation in two behavioral sciences (psychology) courses, but they have also been successfully implemented across the disciplines at our institution. The two courses of focus here are an

introductory general education survey course for first-year students, which we'll refer to as Intro Psych, and an upper-level major's course, which we'll refer to as S&P (short for Sensation and Perception). Chapter authors Lauren Scharff and Julie Tetley implemented KS in Intro Psych, and Lauren Scharff implemented KS in S&P.

Our specific learning context is an undergraduate-only military institution with a student body of just over 4,000 students. Approximately 30 percent of the students are female, and students are predominantly white (80 percent). Intro Psych student demographics match those of the institution, given that it is a required course for all first-year students. S&P student demographics tend to have higher percentages of females (65–75 percent), matching that of the behavioral sciences major. All graduates earn a bachelor of science degree due to the quantity of Science, Technology, Engineering, and Mathematics (STEM) courses in the large general education curriculum, but specific majors include disciplines in the humanities and social sciences as well as in STEM. Class section sizes are generally small, even in general education courses, which typically range from 10–25 students. There are no teaching assistants; thus, faculty review and grade all assignments. As is commonly reported across higher education institutions, interest in the course topics and academic abilities among our students vary widely, especially in general education courses.

The Intro Psych course was similar to those offered at many other institutions. As a survey course, it covered a wide range of content, and the bulk of the course grade came from multiple-choice exams. Performance in the course tended to vary widely, despite most students not considering the material to be hard to understand; instead, it was the volume of content information that often seemed to lead students to struggle. Many students treated the material as a collection of facts to memorize, rather than focusing on concepts and building understanding of how the individual pieces of information relate to the concepts. At least at the start of the course, many seemed to believe that multiple-choice tests meant that the questions would be easy and focus on basic definitions.

Years prior to implementing KS, our Intro Psych instructors had created lesson-level learning objectives, which were placed in a document

shared with students at the start of the course. These objectives were stated in the form of "By the end of this lesson, you will be able to…." They typically focused on knowledge and understanding levels of learning, with a few application objectives. The specific lesson objectives were also restated at the start of each lesson, and exam questions were aligned with the objectives. Despite this, students often asked what they should focus on for the exams, requested study guides and review sessions, and more students than we liked reported spending many hours studying but still performing less well than they had expected. When the instructors discussed learning strategies with the students, the majority reported rereading notes and the text, both of which are prone to leading to illusions of learning, i.e., the material comes to look familiar but it hasn't been processed deeply.

The S&P course was an upper-level major's course; it had no prerequisites and occasionally enrolled students from other related majors. Across institutions, this course has a reputation for being challenging due to a focus on both physiological mechanisms and information processing models. Learning objectives were provided for each lesson at the start. Exams consisted of a mix of question types (multiple choice, matching, and short answer—a few words to longer explanations) and focused on general knowledge and understanding of the material with a few application questions. Student performance on the exams was often bimodal. The lower-performing students in particular complained that there was too much information being tested and that they felt overwhelmed. Despite being upper-level students, these students also reported rereading notes and lesson materials as their primary learning strategy. Other course assignments and activities did not show the bimodal distribution, even though they focused on what is considered to be higher-level aspects of learning (apply, analyze, evaluate, create).

In sum, despite the difference in class level and student demographics, many students in both classes reported struggling with similar challenges—namely feeling overwhelmed by the amount of information and using rereading as a primary learning strategy. The difficulty in

determining where to focus their learning occurred despite the existence of and course design alignment with the learning objectives. In fact, when queried, many of the students in both courses reported paying little attention to the learning objectives.

Research/Evidence That Informs This Approach

We believe the successful implementation of KS incorporates several evidence-based practices related to transparency of learning expectations and the development of student self-assessment and learning skills. The implementation of KS in a course is not a single, stand-alone assignment but, rather, it involves the integration of the different activities across the course as explained in the section on application. The evidence-based practices we have most strongly focused on is the use of Bloom's taxonomy to promote transparency of learning expectations, strong alignment of these communicated expectations with actual assessments, student engagement with the science of learning, and the use of feedback to promote skill development.

Bloom's Taxonomy

What do students think it means to learn? Based on her work with a large number of students, Saundra McGuire (2015) realized that many students view learning as memorizing information. Some might additionally realize that it involves more than memorizing, including aspects such as being able to explain things, which requires understanding. She found that by discussing what learning meant and having students identify what specific types of learning were expected of them in their courses, she could help struggling students be more successful. She found that sharing Bloom's Taxonomy with students was an effective way to help students understand and identify the different types of learning.

Bloom's Taxonomy for the cognitive domain was initially created in 1956 as part of a broader set of hierarchical taxonomies that also included taxonomies for affective and psychomotor domains. Education has typically focused on the cognitive domain taxonomy, which has six levels. The original six created by Bloom were knowledge (lowest

level), comprehension, application, analysis, synthesis, and evaluation. In 2001, these were revised to include the following: remember, understand, apply, analyze, evaluate, and create (Anderson and Krathwohl 2001). Our implementation of KS follows McGuire's advice about communication; we introduce Bloom's revised taxonomy at the start of the course and each KS question explicitly identifies Bloom's level of learning at the end of the question.

Course Alignment

We have known for years that alignment of learning objectives, learning activities, and assessments effectively promotes learning (Cohen 1987). When one or more of these are out of sync, students can become confused about what is expected of them, and faculty may not be assessing what they intend to assess. Biggs and Tang (2007) have promoted "constructive alignment" as a student-learning-centered approach that emphasizes clarity of to-be-assessed learning expectations and subsequent learning activities so that students focus their learning on what will be assessed. The use of KS follows this constructive alignment approach because KS questions are developed directly from the learning objectives that also guide learning activities, KS questions identify their associated Bloom's level, and assessments align with the questions at the stated levels. As an added benefit, the intentional act of comparing student KS responses (student self-assessment) with actual assessment results makes it readily apparent to the instructor if there is misalignment, which supports timely correction of any misalignments (Becker, Frank, and Sloan 2022).

Student Engagement with the Science of Learning

Through the years cognitive science has contributed to our understanding about the processes of learning, and we wanted to support our students with approaches that have been shown to have higher efficacy for learning. Self-assessment is a critically important component of the learning process (Andrade 2019; Andrade and Valtcheva 2009; Nilson 2013) and is also key to metacognition (Dunlosky and Metcalfe 2008)

and self-regulated learning (Zimmerman 1990; Andrade and Valtcheva 2009), both of which enable continued learning well beyond formal education settings (Fink 2003; McGuire 2015; Nilson 2013). For these reasons, we believe self-assessment should be integrated as an intentional part of curriculum (Wirth et al. 2021). Faculty should teach more than subject knowledge and skills; they should also teach students about the learning process itself and how to learn effectively.

Implementing KS involves cycles of self-assessment, which in turn involves students bringing answers to the questions to mind (retrieval) at multiple times (spaced practice): at the start of a unit when completing a pre-unit KS, during a unit if they are using the questions to guide their learning and studying, and at the end of the unit when completing a post-unit KS just prior to the exam. Both spaced practice and retrieval practice have been demonstrated to lead to deeper learning (Dunlosky and Rawson 2015; Roediger and Karpicke 2006).

The steps in the KS implementation cycle also work together to support self-regulated learning and metacognition. Although there are several models of self-regulated learning, one often-cited model defines self-regulation as having three phases: forethought and planning (use of the KS questions to guide learning and studying), performance and monitoring (self-assessment), and reflection on performance (based on feedback about self-assessment accuracy) (Panadero 2017). These self-regulation phases support metacognition as they bring conscious awareness to the process of learning and encourage the intentional use of the results of reflection to guide subsequent behaviors.

Feedback

As with other skills, cultivating the ability to self-assess accurately requires regular, clearly communicated opportunities to practice the skill coupled with ongoing feedback (Fink 2003). As described in more detail below, the KS implementation cycle includes both individual and group feedback. Feedback about performance is crucial for academic success in general (Hattie and Timperley 2007; Monaco and Martin 2007) and is key to improving self-assessment accuracy (Boud, Lawson, and

Thompson 2013; Sloan and Scharff 2022). Accuracy in self-assessment motivates students (McMillan and Hearn 2008) and can empower students to increase their self-efficacy (Ross 2006), ultimately leading to self-directed learners, wherein students take ownership of their own learning goals and journey (Cheng et al. 2010).

Application of Research to Develop This Assignment

Below we overview the application steps, emphasizing the application of the evidence-based practices highlighted above. See the supplemental resource, KS Implementation Guide, for full example introduction text, slides, KS instructions for students.

Introducing KS and Bloom's Taxonomy to Students

The vast majority of our students, even the upper-level students in S&P, were unfamiliar with KS and Bloom's taxonomy prior to our courses. We wanted to ensure students were clear about the process and why we were implementing KS. We also wanted students to carefully evaluate each KS question rather than simply zipping through them just to obtain the completion points. The latter approach wouldn't help support their learning or development of self-assessment skills. Thus, it was important to introduce KS to the students in a way that allowed them to understand the intended functions of and build value for KS. We used essentially the same procedure to introduce and implement KS in both the Intro Psych and the S&P classes.

To start, we explicitly described KS within the syllabus, explaining what KS are and why we were implementing them in our course. We indicated the timing of each KS on the semester-long course schedule. Timing involved a pre-unit KS at the start of each unit, and a post-unit KS at the end of the unit, within twenty-four hours prior to the exam. The Intro Psych course had four units of material, with exams at the end of the first three, and a cumulative final at the end of the fourth unit. For the fourth unit, the pre-unit KS only contained questions related to the fourth unit. However, the post-unit KS was cumulative

for the semester, so it was a much longer KS. The S&P course had four units of material and no cumulative final, so each KS cycle had a pre-unit and a post-unit KS with questions only pertaining to the particular unit.

To decrease the likelihood that students would view KS as busy work, we assigned a small number of points for completion of each KS (e.g. 5–10 points each out of 1,000). We gave more points for the post-unit KS than the pre-unit KS, because at the post-unit time, they were self-assessing their preparation for the exam (and hopefully using that to fine-tune their studying as needed), and we would be using that score to determine their self-assessment accuracy when compared to their performance on the exam.

On the first day of class we took fifteen minutes to discuss learning, introduce Bloom's taxonomy and KS, and explain how KS could contribute to their learning, mastery of course material, and success. We emphasized that we were being completely transparent about what (and at what level) we expected them to learn in order to perform well on the exams. At the start of each lesson, we would share the KS questions that would be addressed during the lesson. This is similar to instructors sharing lesson objectives at the start of a lesson. However, KS are worded to encourage students to think about their ability to accomplish the objective (self-assessment focused) rather than being told what they should come to know or be able to do. Especially toward the start of the semester, but with reminders throughout the semester, we would emphasize to students that they should use the KS as a learning guide, and if they weren't able to fully understand or achieve an objective by the end of a lesson, they should ask questions or come to see their instructor because that is what they would be assessed on at the end of the unit.

Ensuring Alignment

The Intro Psych course was a general education course with standardized assessments across all sections, including those taught by instructors who were not implementing KS. The two KS instructors did not have any control over the exam questions. However, the course director, who wrote the exams, was careful to ensure that the exam questions aligned

with the course learning objectives. Because the KS questions were created directly from the course learning objectives, they were also aligned with the exam questions even though the questions on the exam were not identical to the KS questions (e.g., a KS question might ask if a student was able to give an example of a classical conditioning and explain the component aspects of that example, while the exam question might ask them to identify one of the component aspects of classical conditioning within a new example).

The S&P course had a single instructor who had complete control over the course and assessments. When she wrote the assessments, she would work with the KS questions for that unit, ensuring that exam questions only focused on the content and Bloom's level indicated in the KS for that unit; occasionally given time constraints for the exam, she might ask a lower-level question than the KS question. She was sure to communicate that possibility ahead of time to the students. If some unplanned, related content was discussed during a lesson that did not correspond to a KS question for that unit, she did not include that as a regular exam question. However, and also communicated ahead of time, she might include that topic as a bonus question.

Scaffolding the Science of Learning

As overviewed above, the use of KS fosters improved metacognition and self-assessment skills, as well as incorporates spaced practice as students complete KS before each unit (pre-unit KS), and a second time at the end of each unit (post-unit KS) before taking a unit exam. This pre-post cycle repeats multiple times throughout the semester. Further, we gave students a copy of the KS questions at the start of each unit and encouraged students to use the KS as learning guides across each unit and the entire course, thereby embedding other opportunities for students to implement spaced practice, retrieval practice and self-assessment, self-regulation and metacognition in their learning.

Using KS Responses to Provide Feedback to Instructors and Students

Our implementation of KS provided us with multiple forms of feedback, some of which informed our instruction, and some of which informed students about their learning and development of self-assessment skills. Here we overview the different ways we used KS responses; see the supplemental resource, Steps for Using KS Responses for Feedback, for step-by-step instructions on how to summarize the KS responses, calculate self-assessment accuracy, and provide anonymous feedback to the class at large and individual feedback to individual students.

First, by examining pre-unit KS responses, we received a snapshot of incoming levels of ability, and we were able to fine-tune our lesson planning to spend more or less time on topics as needed for those particular students. We pointed out when we adjusted our lessons based on the pre-unit KS responses so that students could appreciate that the pre-unit KS had value in this respect. In a small number of cases, we also reached out to individual students who indicated significantly more or less incoming knowledge/ability so that we could help fill gaps or strategize how to keep them engaged if the material was likely to be overly familiar. For example, because some of our students had taken a psychology course in high school but did not test out of the course at our institution, there were some topics throughout the semester for which they already had reasonably strong understanding. For the S&P course, there were a few students who had taken a physiology course prior to the S&P course, so those students were already familiar with some of the neural communication concepts.

Second, we compared pre-unit KS and post-unit KS responses to assess the change in students' perceived ability/understanding as they progressed through the course/unit. Lack of improvement (for particular questions or for individuals) might indicate misalignment of learning activities for that topic(s) or challenges for a specific individual. For example, in the S&P course one semester, there was one post-unit question for which none of the students indicated complete confidence in their ability to understand the concept. There was no time to readdress that concept prior to the exam because the post-unit KS was taken within 24 hours prior to the exam. However, the instructor interpreted that global lack of confidence as a sign that the concept was not explained clearly enough, so she downgraded the weight of that question on the exam, and she readdressed the concept and her grading during the lesson following the exam.

Third, and most key to supporting student development of their self-assessment skills, we calculated self-assessment accuracy scores for each student for each exam. Accuracy was determined by making comparisons between post-unit KS scores and grades on the exams. To allow for comparisons, the KS scores were normalized on the same scale as the assessment (e.g., 100 points). In both courses, students would be given their individual self-assessment accuracy scores as well as actual exam scores, and during the lesson following the exam, we would take time to share anonymized scores for the class at large (see figure 12.1 for an example). Taking class time to share the KS accuracy results in addition to simply sharing exam results gave us additional opportunities to discuss learning strategies and the value of self-assessment skills. Providing students with their individual self-assessment accuracy scores gave them an opportunity to calibrate their self-assessment ability and improve over time as they experienced the cycles of performance and feedback across the four units of the course (Kolb 2014).

Figure 12.1 shows example data from the S&P course, which had seventeen students. As communicated on the syllabus and throughout the course, the goal was for each student's post-unit KS score to be within plus or minus 10 percent of their earned grade on each assignment ("in the zone," as we called it). As further explained in the supplemental resource to this chapter, we ordered the student data by accuracy (difference between post-KS and exam scores) in the graphs we shared with students. This led to students who overestimated their performance being placed on the left and those who underestimated on the right. Students scoring "in the zone" were indicated by the blue box. Students "outside the zone" were encouraged to come meet with

the instructor. Notice that accurate self-assessors may or may not actually score highly on the exam.

As instructors, we were able to use these accuracy and exam performance data to tailor our post-exam conversations with our students. Prior to implementing KS, when students would meet with us following an exam, we only had the exam scores. We could see how they performed but we had no insight into how well they thought they had understood the material when they took the exam. So, we defaulted to treating students with similar exam scores similarly (at least to start—we could learn more through our conversation). After we started implementing KS, in addition to the exam scores we had post-KS scores and were able to calculate self-assessment accuracy. Thus, we also were able to constructively differentiate students and provide more individualized guidance. For example, we might discuss learning strategies and possible illusions of learning with an overconfident student who received a low exam score. In contrast, we might also include some queries about motivation and other time pressures when meeting with an accurate self-assessor who received a low score on the exam.

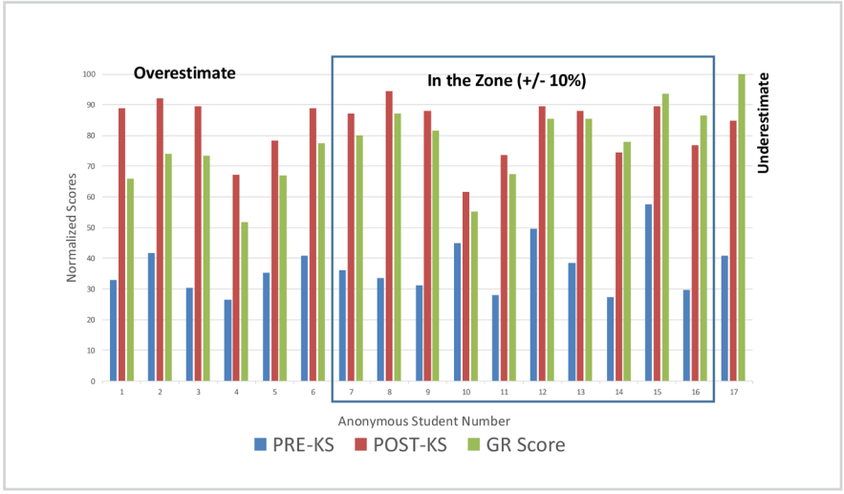

Figure 12.1. Example summary of anonymized student data (normalized pre-unit KS and post-unit KS scores and actual exam scores) presented to a class with seventeen students.

TILTed Assignment

The courses described in this chapter use a shared syllabus, which is featured in this section. This Implementing Knowledge Surveys assignment—drawn from that syllabus—outlines how knowledge surveys (KS) were introduced, explains how both Bloom's taxonomy and knowledge surveys were discussed in the first lesson, and provides the assignment instructions along with two sample questions for the first unit's KS in that course.

Purpose

Here we include text from the syllabus clearly defining knowledge surveys, and outlining how they will be used in the course:

> Knowledge Surveys: Knowledge surveys are collections of questions that support student self-assessment of their course material understanding and related skills. For each concept, Bloom's learning level that will be assessed on the GRs or other assignments will be indicated at the end of the question (e.g., knowledge/memorize, understand/explain, apply/work through novel example). When answering the questions, students rate themselves on their ability to answer the question (similar to a confidence rating) rather than fully answering the question. Completion of knowledge surveys develops metacognitive awareness of learning and can help guide more efficient studying.
>
> In this course you will complete an exam-specific knowledge survey at the start of each segment of content for the four exams and again a day or so before each exam. Grading will be based on completion (10 points each; there are no right or wrong answers), but you will gain greater benefit if you take them seriously and use your responses to fine-tune your studying for the exams. Following completion of the knowledge survey at the

beginning of each module, I will give you a copy of all the questions. I strongly suggest you refer to these questions as we go through the material and use them as a guide to your learning.

We extend the explanation from the syllabus in the first class lesson, where we introduce knowledge surveys to students. We've included a selection of slides from the lesson:

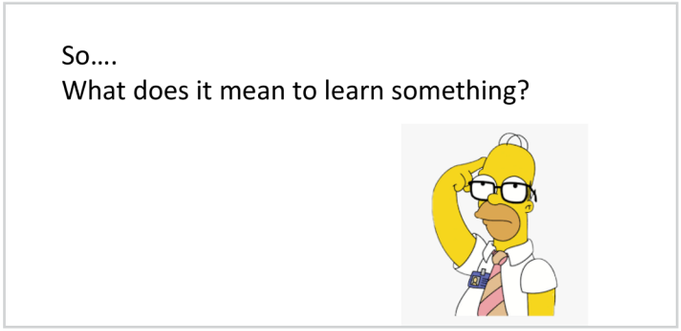

Figure 12.2. "What does it mean to learn something?"

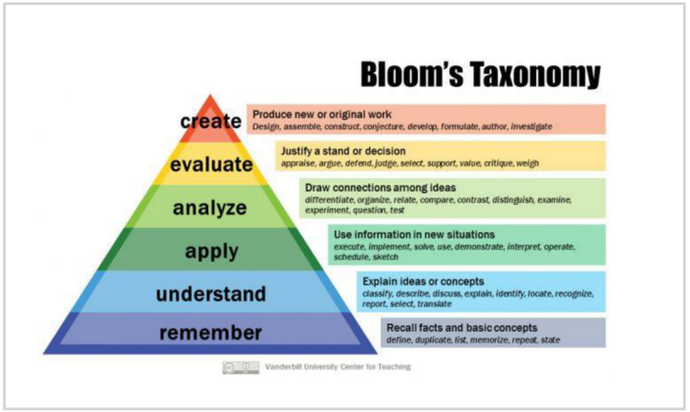

Figure 12.3. Bloom's Taxonomy. Overview of cognitive processes in learning (Anderson and Krathwohl 2001; Vanderbilt University Center for Teaching n.d.).

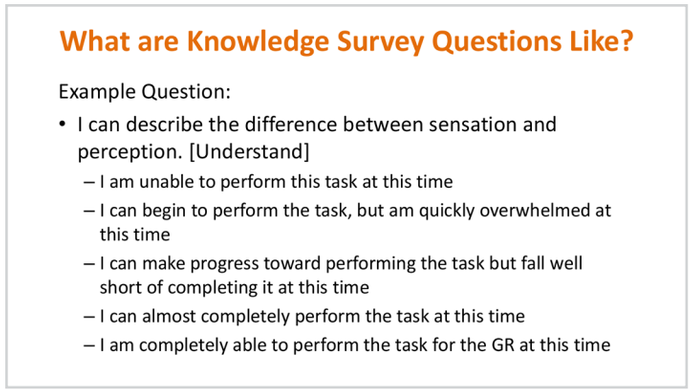

Figure 12.4. "What Are Knowledge Survey Questions Like?"

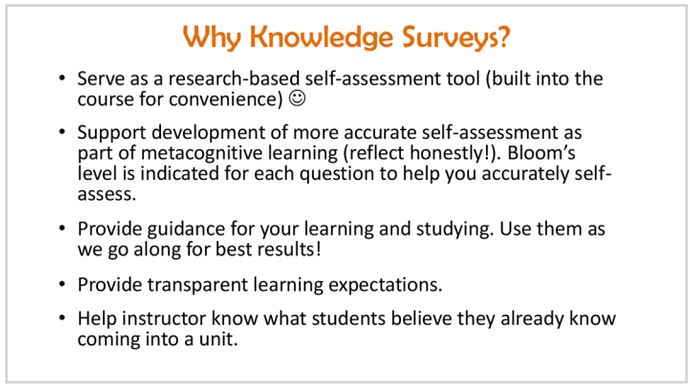

Figure 12.5. "Why Knowledge Surveys?"

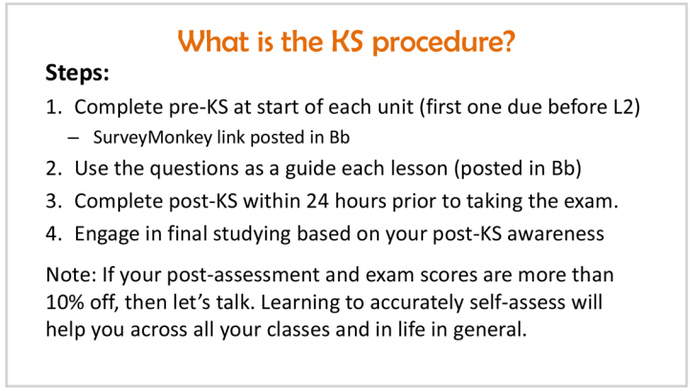

Figure 12.6. "What is the KS Procedure?"

Task and Criteria

This section provides a structured self-assessment of understanding and progress on Unit 1 concepts before and after instruction.

Pre-Unit Instructions

Below are questions related to the material in Unit 1. For each question, reflect on your ability to answer or complete the task at this time, and indicate your ability by choosing one of the five response options. Be honest and develop your self-assessment skills. Your points are based on completion only, not on how you answer. In addition to giving Dr. Scharff a sense of the class's incoming levels of understanding, these questions are designed to transparently communicate Dr. Scharff's expectations for your learning and to help guide your learning—use these questions as we cover the material during each lesson. If you are not able to complete the task by the end of the related lesson, then you should ask questions in class, work with classmates to understand the material, and/or arrange a meeting with Dr. Scharff.

Post-Unit Instructions

Below are questions related to the material in Unit 1. Complete it within 24 hours prior to the exam. For each question, reflect on your ability to answer or complete the task at this time, and indicate your ability by choosing one of the five response options. Remember this is scored based on completion, not on how you respond. Be deeply reflective and answer honestly. This post-unit knowledge survey is designed to help you self-assess your preparation for the exam and fine tune your final studying. Take this post-KS after you believe you are ready for the exam. Reflect honestly about your ability to complete the tasks without referring to your notes or the textbook. If you discover that there are questions where you are not completely ready, then review the material further before the exam. Ideally, your self-assessed score will be within +/-10% of your actual exam grade.

Example Questions

Given a research question, I can explain which data collection method(s) would be appropriate to use and why. [*Understand*]

- I am unable to perform this task at this time
- I can begin to perform the task, but am quickly overwhelmed at this time
- I can make progress toward performing the task but fall well short of completing it at this time
- I can almost completely perform the task at this time
- I am completely able to perform the task for the GR at this time

I can identify the four brain lobes and the areas where the major senses are processed. [*Remember*]

- I am unable to perform this task at this time
- I can begin to perform the task, but am quickly overwhelmed at this time
- I can make progress toward performing the task but fall well short of completing it at this time
- I can almost completely perform the task at this time
- I am completely able to perform the task for the GR at this time

Critical Reflection of TILTed Assignment

We have found that implementing KS helped us accomplish our goals with respect to supporting student learning and developing student self-assessment skills. KS provided a tool to help students reflect more deliberately on what they were learning as we moved through the units and self-assess their readiness for an exam so they could more effectively tailor their learning efforts. In our Intro Psych course in particular, many students did not yet have effective learning habits and, prior to introducing KS, few seemed to pay close attention to the lesson learning objectives or know how to use those objectives to guide their learning.

It was clear in both courses that some students "bought in" to the potential benefits of KS sooner than others, but even the more skeptical students started engaging with them more regularly (e.g., using

them as a learning guide as the unit progressed) after the first exam. The upper-level S&P students in particular expressed that they would have felt much more overwhelmed by the amount of content (usually 3–4 chapters in the text, but the material was complex) if they hadn't had the KS to guide them.

End-of-course student feedback supported our conclusion that the knowledge surveys were broadly successful in these areas. Some representative student comments included:

> "They [KS] force you to go through lesson objectives, which is useful if people otherwise wouldn't do so."
>
> "Since it was [graded] only for completion, I felt comfortable saying "I don't know" and this forced me to study more."
>
> "They [KS] help me identify knowledge gaps that I did not know I had."
>
> "I like being able to see how I thought I would do vs how I actually did."
>
> "I wish more courses would implement KS."

Also positive, self-assessment accuracy relative to an instructor-graded assessment often showed improvement across the semester (Sloan and Scharff 2022). In other words, more students were "in the zone" of accurate self-assessment by the end of the course.

Finally, in addition to clarifying learning expectations and helping students develop self-assessment skills, KS supported our awareness of alignment (or not) of course learning objectives, activities, assignments, and assessments. Overall, we have found KS to be a straightforward way to incorporate the fundamental skill of self-assessment into existing courses without much additional effort.

Modifying, Adapting, or Applying This Assignment for Other Contexts

During the past five years, we have found KS to be easily adaptable to a variety of courses across class-year levels and a wide array of disciplines from social sciences to humanities to basic sciences and engineering. They have been successfully implemented by experienced as well as new faculty, and in both majors and general education courses. To date, they have been implemented in twenty-two different courses (several multiple times) across multiple disciplines. The figures below share motivations from a few of our instructors (see figures 12.7 and 12.8).

Implementing KS across multiple disciplines has revealed that they are an adaptable tool and can support engagement in learning beyond preparation for content exams. For example, in one of our upper-level major's courses in political science, students often reported that class discussions were valuable; however, they also expressed anxiety about how to prepare for exams despite clear lesson objectives. KS allowed students to better understand what to expect on assessments and provided a guide to help students recognize the important concepts within the primary documents they were reading. In one mid-level course in civil engineering, KS encouraged students to use the learning objectives and helped scaffold course concepts to manage the course content as it got more complex toward the end of the semester. In two other civil engineering courses, KS were successfully used for technical writing and a design project, demonstrating the usefulness of KS across the full spectrum of levels in Bloom's taxonomy.

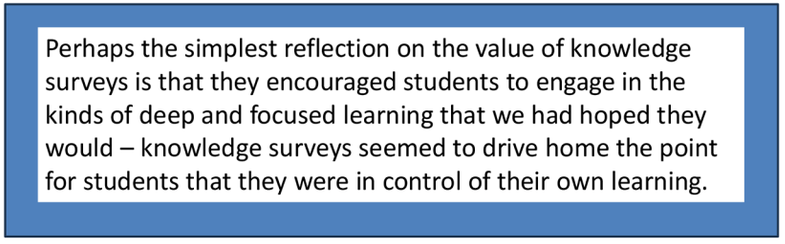

Figure 12.7. Quote from one instructor.

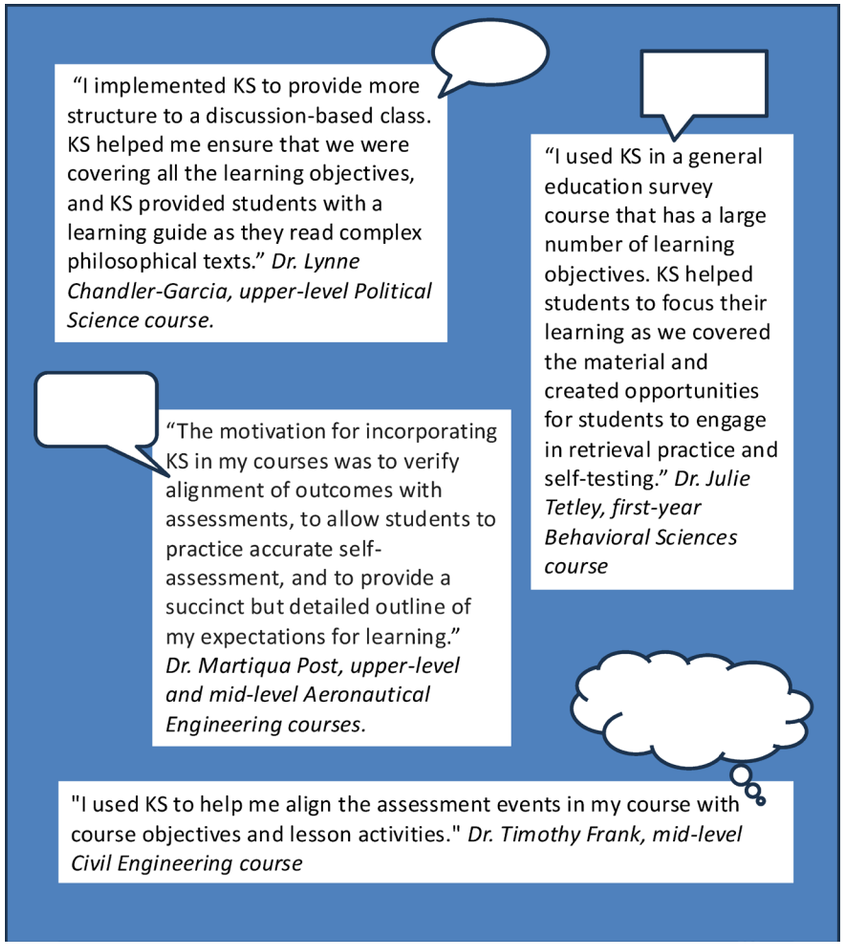

Figure 12.8. Four quotes from instructors highlight benefits of using knowledge surveys.

Beyond the value to students, most teachers who implemented KS have also found value in places they initially did not expect. Creating KS provided an opportunity and motivation to think more deeply about course design and generally led to course design improvements. Comparisons of pre-unit and post-unit KS responses allowed instructors to efficiently identify areas where large numbers of and/or individual students struggled. There were also some lessons learned over time. It

became apparent, if unsurprising, that KS were generally more effective when instructors deliberately spent lesson time focused on them, and when a few points were awarded for completion.

As mentioned above, we have applied KS across multiple disciplines, class years, majors and general education courses, with more and less experienced instructors, and for a variety of assessment types, although exams have been the most common. A few of our KS courses were offered online, where they also worked well. Several researchers (Papamitsiou et al. 2020; Broadbent 2017; Wong et al. 2019) have identified strong self-regulated learning (SRL) skills as key to learning in an online context, and as addressed above, knowledge surveys are a beneficial way to introduce self-assessment and cultivate SRL skills.

We acknowledge that our class sizes have all been relatively small. However, scaling to a larger course would not be difficult with respect to basic implementation. KS are disseminated online, so the outputs can be automatically summarized by survey applications, and participation can be automatically recorded by course software. The main limitation with larger class sizes would be an instructor's ability to meet individually with students whose self-assessment accuracy fell outside the zone of plus or minus 10 percent.

A new arena for which we believe KS would be promising is developmental education. Research has shown that metacognitive skills are particularly important for underprepared students who are navigating the self-motivated and independent experiences of postsecondary education (Hong-Nam and Leavell 2011; Cummings 2015). Generally, these students tend to be less adept at self-assessment compared to higher achieving students (Lew, Alwis, and Schmidt 2010; Boud, Lawson, and Thompson 2013) but often demonstrate the most improvement following the practice of self-assessment activities (Nilson 2013). Once students are better able to self-assess their own abilities, instructors can help these students improve their study habits (Webb and Karatjas 2018). Further, student self-assessment promotes intrinsic motivation (McMillan and Hearn 2008), and KS can enhance student confidence

and self-efficacy (Clauss and Geedey 2012), which are traits often lacking for underprepared students.

KS also might be an effective part of program assessment as disciplines seek to understand the knowledge base students have coming into a program as well as the subject matter expertise students have attained upon graduating from the program (Nuhfer and Knipp 2003; Wirth and Perkins 2005; Favazzo, Willford, and Watson 2014; Sloan and Frank 2023). Incoming student responses can be used to update curricula for introductory and general education courses. Using KS for periodic "check-ups" or as exit surveys could help departments with curriculum development for the pathway of a major as well as the content for advanced courses (Sloan and Frank 2023).

In sum, KS are a TILTed approach that enhances course transparency by clearly delineating learning expectations and the purpose of the content. By structuring these surveys around learning outcomes and Bloom's Taxonomy, students gain a comprehensive understanding of the learning goals and the cognition level required. KS furnish students with a valuable tool for facilitating self-reflection and self-evaluation of their own progress and achievement. The two resources linked with this chapter provide step-by-step guidelines. The KS Implementation Guide provides example syllabus and lesson 1 introduction text, example instructions to place at the top of both the pre and the post-unit KS, and guidance on creating the questions and question responses. The Steps for Using KS Responses for Feedback explains how to calculate normalized scores and the graphs we used to share with students.

References

Anderson, Lorin W., and David R. Krathwohl, eds. 2001. *A Taxonomy for Learning, Teaching, and Assessing: A Revision of Bloom's Taxonomy of Educational Objectives*. Longman.

Andrade, Heide. 2019. "A Critical Review of Research on Student Self-Assessment." *Frontiers in Education* 4 (87): 1–13. https://doi.org/10.3389/feduc.2019.00087.

Andrade, Heide, and Anna Valtcheva. 2009. "Promoting Learning and Achievement through Self-Assessment." *Theory into Practice* 48 (1): 12–19. https://doi.org/10.1080/00405840802577544.

Becker, Karin, Timothy Frank, and Joel Sloan. 2022. "Integrating Technical Communication Block in a Computer Applications Course: Lessons Learned." In ASEE PEER Conference Proceedings. https://doi.org/10.18260/1-2--41191.

Biggs, John, and Catherine Tang. 2007. "Using Constructive Alignment." In *Teaching for Quality Learning at University*, 3rd ed., 50–63. Open University Press.

Bloom, Benjamin S., ed. 1956. *Taxonomy of Educational Objectives: The Classification of Educational Goals*. Longmans Green.

Boud, David, Romy Lawson, and Darrall G. Thompson. 2013. "Does Student Engagement in Self-Assessment Calibrate Their Judgment over Time?" *Assessment & Evaluation in Higher Education* 38 (8): 941–56. https://doi.org/10.1080/02602938.2013.769198.

Broadbent, Jaclyn. 2017. "Comparing Online and Blended Learners' Self-Regulated Learning Strategies and Academic Performance." *The Internet and Higher Education* 33. https://doi.org/10.1016/j.iheduc.2017.01.004.

Cheng, Su-Fen, Chien-Lin Kuo, Kuan-Chia Lin, and Jane Lee-Hsieh. 2010. "Development and Preliminary Testing of a Self-Rating Instrument to Measure Self-Directed Learning Ability of Nursing Students." *International Journal of Nursing Studies* 47 (9): 1152–58. https://doi.org/10.1016/j.ijnurstu.2010.02.002.

Clauss, Jon M., and C. Kevin Geedey. 2012. "Knowledge Surveys: Students' Ability to Self-Assess." *Journal of the Scholarship of Teaching and Learning* 10 (2): 14–24.

Cohen, S. Alan. 1987. "Instructional Alignment: Searching for a Magic Bullet." *Educational Researcher* 16 (8): 16–20.

Cummings, Chris. 2015. "Engaging New College Students in Metacognition for Critical Thinking: A Developmental Education Perspective." *Research & Teaching in Developmental Education* 32 (1): 64–67.

Dunlosky, John, and Janet Metcalfe. 2008. *Metacognition*. Sage Publications.

Dunlosky, John, and Katherine A. Rawson. 2015. "Practice Tests, Spaced Practice, and Successive Relearning: Tips for Classroom Use and for Guiding Students' Learning." *Scholarship of Teaching and Learning in Psychology* 1 (1): 72–78. https://doi.org/10.1037/stl0000024.

Favazzo, Lacey, John D. Willford, and Rachel M. Watson. 2014. "Correlating Student Knowledge and Confidence Using a Graded Knowledge Survey to Assess Student Learning in a General Microbiology Classroom." *Journal of Microbiology & Biology Education* 15 (2): 251–58. https://doi.org/10.1128/jmbe.v15i2.693.

Fink, L. Dee. 2003. "A Self-Directed Guide to Designing Courses for Significant Learning." *Dee Fink and Associates*. https://www.bu.edu/sph/files/2011/06/selfdirected1.pdf.

Hong-Nam, Kay, and Alexandra G. Leavell. 2011. "Reading Strategy Instruction, Metacognitive Awareness, and Self-Perception of Striving College Developmental Readers." *Journal of College Literacy and Learning* 37: 3–17.

Kolb, David A. 2014. *Experiential Learning: Experience as the Source of Learning and Development*. 2nd ed. Pearson Education.

Lew, Magdeleine D. N., W. A. M. Alwis, and Henk G. Schmidt. 2010. "Accuracy of Students' Self-Assessment and Their Beliefs about Its Utility." *Assessment & Evaluation in Higher Education* 35 (2): 135–56.

McGuire, Saundra Yancy. 2015. *Teach Students How to Learn*. Stylus Publishing.

McMillan, James H., and Jessica Hearn. 2008. "Student Self-Assessment: The Key to Stronger Student Motivation and Higher Achievement." *Educational Horizons* 87 (1): 40–49.

Nilson, Linda B. 2013. *Creating Self-Regulated Learners*. Stylus Publishing.

Nuhfer, Edward. 1993. "Bottom-Line Disclosure and Assessment." *Teaching Professor* 7 (7): 8.

Nuhfer, Edward, and Delores Knipp. 2003. "The Knowledge Survey: A Tool for All Reasons." *To Improve the Academy* 21 (1): 59–78. https://doi.org/10.3998/tia.17063888.0021.006.

Panadero, Ernesto. 2017. "A Review of Self-Regulated Learning: Six Models and Four Directions for Research." *Frontiers in Psychology* 8 (422): 1–28.

Papamitsiou, Zacharoula, Martin Lunde, Jakob Westermoen, and Michail N. Giannakos. 2020. "Supporting Learners in a Crisis Context with Smart Self-Assessment." In *Radical Solutions for Education in a Crisis Context: COVID-19 as an Opportunity for Global Learning*, edited by Daniel Burgos, Ahmed Tlili, and Anita Tabacco, 207–24. Springer.

Roediger, Henry L., and Jeffrey D. Karpicke. 2006. "Test-Enhanced Learning: Taking Memory Tests Improves Long-Term Retention." *Psychological Science* 17 (3): 249–55.

Ross, John A. 2006. "The Reliability, Validity, and Utility of Self-Assessment." *Practical Assessment, Research and Evaluation* 11 (10): 1–13.

Sloan, Joel, and Timothy Frank. 2023. "Student Self-Assessment Data: An Instrument for Program Assessment." *Intersection: A Journal at the Intersection of Assessment and Learning* 4 (2). https://doi.org/10.61669/001c.84511.

Sloan, Joel, and Lauren Scharff. 2022. "Student Self-Assessment: Relationships between Accuracy, Engagement, Perceived Value, and Performance." *Journal of Civil Engineering Education* 148 (3). https://doi.org/10.1061/(ASCE)EI.2643-9115.0000063.

Webb, Jeffrey A., and Andrew G. Karatjas. 2018. "Grade Perceptions of Students in Chemistry Coursework at All Levels." *Chemistry Education Research and Practice* 19 (2): 491–99. https://doi.org/10.1039/c7rp00168a.

Wirth, Karl R., Edward Nuhfer, Rachel Watson, Steven C. Fleisher, and Roxanne Bailey. 2021. "Knowledge Surveys: Supporting Students along Pathways to Self-Directed Learning with Self-Assessment." In *Self-Directed Learning: An Imperative for Education in a Complex Society*, edited by Elsa Mentz, Dorothy Laubscher, and Jako Olivier, 127–64. AOSIS.

Wirth, Karl R., and Dexter Perkins. 2005. "Knowledge Surveys: An Indispensable Course Design and Assessment Tool." *Innovations in the Scholarship of Teaching and Learning*, 1–12.

Wong, Jacqueline, Martine Baars, Dan Davis, Tim van der Zee, Geert-Jan Houben, and Fred Paas. 2019. "Supporting Self-Regulated Learning in Online Learning Environments and MOOCs: A Systematic Review." *International Journal of Human-Computer Interaction* 35 (4–5): 356–73. https://doi.org/10.1080/10447318.2018.1543084.

Zimmerman, Barry J. 1990. "Self-Regulated Learning and Academic Achievement: An Overview." *Educational Psychologist* 25 (1): 3–17. https://doi.org/10.1207/s15326985ep2501_2.

SECTION 4

Identities Affect Both Teaching & Learning

Section 4 of this text explores how the content of several different TILTed pedagogy chapters align with Grand Challenge #4, which specifically focuses on how identities affect both teaching and learning in postsecondary education. These chapters demonstrate a commitment to inclusivity and recognizing the impact of identity on the learning process, aligning with the Grand Challenge's emphasis on understanding how individual identities shape educational experiences.

Content in this section highlights how individual identities and experiences can shape teaching and learning in a variety of impactful ways. Chapter 13 demonstrates how using the TILT framework in assignment design can support diverse student motivations and life experiences, recognizing the inherent individuality students bring to the classroom. Chapter 14 emphasizes the need for adaptations that accommodate the unique needs of students with disabilities, promoting inclusivity and equity in learning environments. Similarly, Chapter 15 encourages students to foster an understanding of how various identities and positionalities contribute to the treatment of communication disorders in complex circumstances. Finally, Chapter 16 uses the critical autobiography to encourage students to reflect on their experiences and articulate their personal and professional identities. This process of self-reflection helps students understand how their unique identities shape their learning journey and lays out a way for students to reflect deeply as professionals in their future work.

By showcasing diverse pedagogical approaches that consider individual needs and experiences, these chapters collectively address the intricate interplay between identity and learning in postsecondary education. This interconnectedness encourages authors to explore how these pedagogical strategies, when examined together, contribute to a comprehensive understanding of the multifaceted ways identity shapes the teaching and learning process, fostering more inclusive and equitable learning environments.

CHAPTER 13

Explaining Complex Concepts Through Visual Metaphors

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Navigation Tools

What: Collaborative, Dialogic & Feedback-Oriented Practices
Where: STEM & Social Sciences

This chapter explores the development and implementation of a visual metaphor assignment in a higher education foundations course, aimed at enhancing students' communication skills and deepening their comprehension of the field's complexities. The author initially integrated visual metaphors into weekly topics, drawing upon research concerning novice learners' information assimilation. Subsequently, a new assignment grounded in Universal Design for Learning (UDL) principles was crafted to bolster students' written and verbal communication proficiencies. This Visual Metaphor assignment tasked students with identifying and elucidating visual metaphors for a chosen higher education obstacle and the field itself, utilizing VoiceThread. The chapter also highlights the TILT framework's role in structuring assignment instructions to facilitate student persistence and executive function.

Description of Teaching/Learning Context

Fully online, asynchronous classes provide students with a flexible option for taking coursework. Adult learners benefit from this flexibility, as they

can work full-time while pursuing advanced degrees and certificates (Hrastinski 2008). Because graduate students enter academic programs with varying levels of knowledge and preparation, possibly because their graduate program is in a different discipline than their undergraduate studies, instructors design introductory graduate courses to build and develop students' baseline knowledge and skills.

My course on the foundations of higher education is one of those introductory courses and is a requirement for the master's in education online program and the online graduate certificate in higher education leadership and administration. The outcomes for both programs are to develop higher education professionals who possess a deep and nuanced understanding of the field and the written and verbal skills to communicate this understanding to various audiences. The course covers higher education history; its stakeholders, including faculty, student affairs professionals, students, and administrators; and its ongoing challenges, such as access and equity, faculty and staff workload, student belonging, the cost of college, and academic capitalism. Through weekly online discussions using text, audio, and visual media, students practice communicating their understanding. Students also individually complete a series of scaffolded assignments, which include a brief reaction paper on a chosen higher education obstacle of interest, an annotated bibliography, and an analytical paper.

Over the years, the course has enrolled a range of adult learners, including full-time faculty at other institutions working on the leadership and administration certificate; graduate students a few years out from their undergraduate programs looking to work in higher education; nurses working full-time in hospitals who want to move into nursing education; and higher education professionals who work full time and are starting graduate work after a substantial lapse in being in a classroom setting. Because my students bring different motivations and life experiences to the course, the weekly discussions reflected a diversity of perspectives on the course content. However, two instructional issues consistently surfaced when assessing student work: building students' foundational knowledge about the complexity of higher

education challenges and developing students' written and verbal skills for communicating this knowledge.

To address the first issue, I decided to experiment with introducing each weekly topic using a visual metaphor; meaning, I compared each topic to something my students would recognize using images and written explanations. This choice was informed by research on how novice learners integrate new information within the context of what they already know (Zull 2002). By showing a visual of the metaphor along with my written explanation, I was also incorporating best practices from Universal Design for Learning (UDL); specifically, I was representing content using two different formats and scaffolding students' comprehension of the concepts (Meyer, Rose, and Gordon 2014). In the first week of the course, I compared the field of higher education to playing a game. I presented a series of images of different games and explained that in our field, there are many players, conflicts and challenges, and some intended and unintended consequences. For each subsequent topic, I presented a specific game for comparison. When discussing the challenge of faculty and staff workload, for instance, I used the visual metaphor of playing a game of Jenga and explained that when we remove a block from the Jenga tower and place it on the top, we are repositioning the pieces while making the foundation unstable. Similarly, shifts in faculty and staff workload in response to campus priorities rarely means the work is lessened, but rather simply redistributed. Through the weekly visual metaphors, I modeled an approach to communicating complex information and received positive feedback from my students.

To address the second persistent issue of developing students' written and verbal communication skills, I returned to the UDL framework for guidance and realized that while students had practiced communicating their understanding in our discussions through text, audio, and visual media, all their summative assessments were written assignments. Moreover, those assignments did not reflect the perspectives, experiences, and knowledge that students brought with them to the course. Because the use of visual metaphors worked so well with representing content to students, I decided to create a new assignment that asked students to identify a

visual metaphor for their chosen higher education obstacle and a visual metaphor for the field of higher education. Students uploaded their visual metaphors using Google Slides or PowerPoint to the web-based application VoiceThread. Students were familiar with this tool, as we used it as part of our weekly discussions. VoiceThread allows for text, audio, or video commenting, and I asked students to provide an audio or video explanation of their metaphors. Using the TILT framework, I emphasized the knowledge and skills students would develop through the new Visual Metaphor assignment, which was added as the final assessment in the scaffolded series of assignments. I communicated to students that explaining complex concepts by comparing them to something an audience is already familiar with and providing an image to complement the explanation can be a useful communication tool for presentations and written formats.

Research/Evidence That Informs This Approach

Universal Design for Learning (UDL) is a framework that guides instructors in removing learning barriers for full participation by all students (Meyer, Rose, and Gordon 2014). The UDL framework comprises three principles that prioritize offering multiple means of engagement, representation, and action and expression. These principles help all students organize, understand, engage with, and express their learning. Incorporating the UDL framework in course design also allows for students to actively engage in the learning process and persist in the face of setbacks. Instructors can use this framework to expand upon their teaching approaches, such as offering choice in how students engage with course materials, varying assessment formats (e.g., papers, multimedia presentations, infographics), or incorporating instructional scaffolds to help with student comprehension of course concepts. With regards to visual and written explanations, for example, the UDL framework suggests that instructors use both formats to decrease barriers to accessing the content (Meyer, Rose, and Gordon 2014).

Incorporating a UDL approach in assessment design can surface students' creativity and divergent thinking. UDL practitioners suggest that faculty first think about their course goals, consider the knowledge and skills students should be able to demonstrate as they progress through the course, and then engage in crafting a task that is different from the traditional assessment approaches of exams, papers, and presentations (Tobin and Behling 2018). Offering varied formats for assessments can reduce barriers that would impact student performance because students are given various opportunities to express their learning (UDL and Assessment n.d.).

In conducting a review of the research of UDL and its implementation in the classroom, researchers found that students' satisfaction of the learning experience increased as more UDL strategies were implemented in the course design because content was clarified, and students were able to express their learning in ways that best suited their skills and abilities (Cumming and Rose 2022). These gains were also true for nontraditional learners, who showed an increase in persistence when UDL strategies were incorporated in their courses (Tobin and Behling 2018). Moreover, students noted that they had a decreased sense of stress while completing assignments if instructors used UDL approaches. Researchers have also found that technology plays a critical and effective role in implementing UDL; with specific regards to the principle of representation, they found that the use of multimedia can enhance learning, particularly if the UDL guidelines for comprehension were followed, such as highlighting big ideas and critical features of the content (Bray et al. 2023). Thus, the interplay among the UDL guidelines suggest that providing different options for representing and expressing content through audio, written or visual means can support student comprehension and how they demonstrate their learning.

Application of Research to Develop This Assignment

The UDL framework influenced my design of the Visual Metaphor assignment in specific and important ways. A core goal of the framework is to bring students into the learning experience, support them when they

encounter challenge, and encourage them to build their self-knowledge through the three UDL principles of engagement, representation, and expression (About UDL n.d.). I knew the new assignment needed to draw on the component skills students had been developing over the semester through the weekly discussions and written scaffolded assignments to achieve this goal of UDL. Students identified the critical features of their chosen higher education obstacle in their analytical paper and the critical features of higher education through the discussion prompts. They were building their self-knowledge of both issues, but predominantly communicating that knowledge in writing. The Visual Metaphor assignment provided a chance for students to communicate their knowledge verbally and visually, developing diverse communication fluencies.

The assignment also emphasized the knowledge and experiences students brought with them to the course. Because the basis of a metaphor is comparing a complex concept to a concrete example, students could draw on their own prior knowledge to produce the examples. The diversity of knowledge and experiences, which could be seen as a barrier to learning in this course, was now celebrated and recognized in this assignment. Identifying a visual to communicate the metaphor also provided students with choice and an opportunity to tap into their own creativity to communicate their ideas.

Finally, using the TILT framework to write the directions supported students' persistence to complete the assignment and their executive function, particularly if creating visual metaphors was a new or challenging experience. By communicating each step of the task in the guidelines, students were able to plan and monitor their progress in completing the assignment. When articulating the criteria for success, I chose not to have a formal rubric to evaluate the assignment and minimize the distraction of a number grade. I wanted students to feel that they could take risks. The choices I made in crafting this assignment not only provided students with opportunities to demonstrate their learning, encouraged them to persist, and developed their

self-knowledge about course concepts, but also prompted them to practice the communication skills they will use beyond my course.

TILTed Assignment

Below are details outlining the Visual Metaphor assignment.

Purpose

All semester we've been using the metaphor of a game to describe higher education and each week, I've tried to select a particular game that could serve as a metaphor for the topic and provide a visual representation of that metaphor. For this final challenge, I'd like you to come up with a visual metaphor that represents your higher education obstacle, and another visual metaphor to describe higher education.

When explaining complex concepts by comparing them to something familiar through metaphors, it helps your audience understand the message you are trying to convey. An effective metaphor can even be integrated into your writing—from formal essays to opinion pieces to speeches and presentations. The usefulness of metaphors is endless! By identifying images for your metaphors and explaining your comparisons in VoiceThread, you're also developing your verbal and visual fluencies to communicate, a skill you've been working on each week in our class. So, think of this visual metaphor assignment as another opportunity to sharpen your communication expertise. You'll notice that I am not providing a grade for this task and that is because I want you to "go big" without fear of doing something wrong.

Task

According to Andy Tharby (2018), an effective metaphor has four characteristics. First, it is transformative or enduring; we remember it and can easily apply it to new situations. Second, it is relevant in that it must work for everyone. It needs to be a universal experience. Third, it is distinct, unusual, and another reason it's less likely to be forgotten. And finally, an effective metaphor has a visual aspect to it, creating a picture

in our mind. To complete this visual metaphor assignment, complete the following steps:

1. Identify attributes (traits, characteristics) of the subject (for this challenge, you will do this twice: once for your higher education obstacle and once for the field of higher education).
2. Then, think of another object that shares similar attributes. This will take some time, so give space to this task. Come up with a few options and then see if they demonstrate the four characteristics of effective metaphors.
3. Next, you'll find a photo of that object by searching online (Google image search is helpful in finding images) and saving or copying the photo or drawing it yourself and taking a photo with your phone.
4. You'll insert/copy your photos in this Google Slides template or make your own slide with your two photos using Google Slides or PowerPoint. In the template I created, I left you a placeholder for where the photos should go. Feel free to resize your photos so they fit the boxes.
5. Then you'll upload the slide to VoiceThread and give us some additional details by leaving an audio or video comment addressing these prompts: Why is your image an effective visual metaphor for your higher education obstacle? Why is your image an effective visual metaphor for higher education? What are your thoughts on the use of visual metaphors as a way of explaining complex concepts?
6. Last, but not least, you'll answer a series of reflective questions for this assignment.

Criteria

Your visual metaphor assignment will be successful if you: (1) Identify two effective visual metaphors: one for your higher education obstacle and one for the field of higher education; (2) You upload your metaphor slide to VoiceThread and leave a comment addressing the three prompts by [*insert day, date, time*]; and (3) You submit your answers to assignment

self-reflection and evaluation questions by [*insert day, date, time*]. The feedback I plan to provide on this challenge will focus on the strengths of your metaphors and any other possible metaphors that could work (if applicable).

Critical Reflection of the TILTed Assignment

The goal of the Visual Metaphor assignment was to provide students with a way to communicate their analysis and synthesis of a higher education challenge that was different from the traditional analytical paper. The assignment also offered an opportunity for students to show their creative and critical thinking. Many students said they liked having the option to be creative in graduate school and to think about the higher education obstacle they spent the whole semester researching and reading about in a unique way. They commented that the assignment made them think in new ways, noted that the metaphors were a helpful tool to use in polishing their communication skills, and that they would likely remember their metaphors long after the class concluded.

However, that is not to say this assignment yielded perfect results from everyone. There were some students who chose literal visual representations of their obstacles instead of visual metaphors. I believe this misinterpretation can be addressed through better scaffolding and transparency in the assignment directions. I thought my own modeling of visual metaphors through my comparisons between board games and higher education obstacles each week was enough to support students through this process. But some students likely needed hands-on practice in our weekly discussions. Through these low-stakes discussions, I could have provided global feedback to the whole class on the effectiveness of their metaphors.

In the assignment directions, which followed the TILT framework, I thought I provided enough description in the task that would lead students through an explicit process of identifying effective metaphors. Upon reflection, I realized that I failed to: 1) define what a metaphor was; and 2) define what an effective metaphor was! The absence of this information likely contributed to some students' misunderstanding of

the assignment. I have revised the assignment directions for this book to include both components, drawing from Tharby's argument that an effective metaphor has four characteristics (Tharby 2018). First, it is transformative or enduring; we remember it and can easily apply it to new situations. Second, it is relevant in that it must work for everyone. It needs to be a universal experience. Third, it is distinct, unusual, and another reason it is less likely to be forgotten. And finally, an effective metaphor has a visual aspect to it, creating a picture in our minds.

Modifying, Adapting, or Applying This Assignment for Other Contexts

The Visual Metaphor assignment can be used in any modality and in any discipline that explores abstract, complex concepts that allow for divergent thinking and interpretation. For example, a biology student could compare the modularity of biomolecules to the toy Mr. Potato Head (Trujillo, Anderson, and Perez 2015), or a computer science student could compare a central processing unit (CPU) process scheduling to how a hospital works (Saxena, Singh, and Gupta 2021). Theoretical concepts in the social sciences, such as self-authorship, agency, or social capital could produce a variety of metaphors. One important consideration to keep in mind is how you will communicate what makes a metaphor effective; you could explore modeling the activity, showing examples of past student work, or crafting the assignment instructions that explicitly address the components of an effective metaphor. Another consideration is how students will be given the opportunity to explain their metaphors, which could be accomplished outside of class through a web-based tool like VoiceThread or Flipgrid or as an in-class presentation. For large-enrollment courses, consider having students work together in class to identify metaphors and asking them to upload their group ideas to a digital platform. In this scenario, it becomes an in-class activity as opposed to a formal assignment. If instructors want to constrain the activity, they can identify specific concepts that are essential to their course content and ask students to identify visual metaphors within that limited scope. If the course is

writing intensive, this assignment can be adapted as an in-class activity to help with the writing process, with the possibility of the metaphors later embedded into the written work of the students. Instructors could also use effective student-generated visual metaphors in their own teaching and lecturing to help with comprehension.

References

Bray, Aibhin, Ann Devitt, Joanne Banks, Sergio Sanchez Fuentes, Marta Sandoval, Katerina Riviou, Darren Byrne, Margaret Flood, Jean Reale, and Silvia Terrenzio. 2023. "What Next for Universal Design for Learning? A Systematic Literature Review of Technology in UDL Implementations at Second Level." *British Journal of Educational Technology* 54 (1): 1–26. https://doi.org/10.1111/bjet.13328.

Cumming, Therese M., and Megan C. Rose. 2022. "Exploring Universal Design for Learning as an Accessibility Tool in Higher Education: A Review of the Current Literature." *The Australian Educational Researcher* 49 (5): 1025–43.

Hrastinski, Stefan. 2008. "Asynchronous and Synchronous E-Learning." *EDUCAUSE Quarterly* 31 (4): 51–55.

Meyer, Anne, David H. Rose, and David Gordon. 2014. *Universal Design for Learning: Theory and Practice*. CAST Professional Publishing.

Saxena, Pawan, Sanjay Singh, and Gopal Gupta. 2021. "Analogy-Based Instruction for Effective Teaching of Abstract Concepts in Computer Science." In 7th International Conference on Higher Education Advances (HEAd'21), 377–85.

Tharby, Andy. 2018. *How to Explain Absolutely Anything to Absolutely Anyone: The Art & Science of Teaching Explanation*. Crown House Publishing.

Tobin, Thomas J., and Kirsten Behling. 2018. *Reach Everyone, Teach Everyone: Universal Design for Learning in Higher Education*. West Virginia University Press.

Trujillo, Caleb M., Trevor R. Anderson, and Nancy J. Perez. 2015. "A Model of How Different Biology Experts Explain Molecular and Cellular Mechanisms." *CBE—Life Sciences Education* 14 (5). https://doi.org/10.1187/cbe.14-12-0229.

Zull, James E. 2002. *The Art of Changing the Brain*. Stylus Publishing.

CHAPTER 14

TILTed Lesson Plan Adaptation Project

Supporting Teacher Candidates to Create a Systematic Classroom Environment for K–6 Students with Disabilities

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Navigation Tools

What: Creative & Representational Expression
Where: Education

The Council for Exceptional Children's Professional Preparation Standards (2024) identify knowledge and skills in classroom environment adaptations as an essential expertise area special education teachers must master for effective practice for K–6 students with disabilities. However, at curriculum development meetings for a university introductory-level special education course, instructors continuously described their challenges in coaching future teachers to develop quality and systematic adaptations of instruction for K–6 students with disabilities. This chapter describes the TILTed Lesson Plan Adaptation Project, providing transparent and clear guidelines for this extensive, complex, and essential endeavor. A six-step process designed to support the TILTed Lesson Plan Adaptation Project is also described. The Systematic Approach for Adapting the Learning Environment Model (Wood 2005) and how it can be incorporated in the TILTed Lesson Plan Adaptation Project are presented. The chapter also explains how the TILTed assignment components can be integrated into other courses and disciplines.

Description of Teaching/Learning Context

An introductory-level undergraduate special education course is the only required special education course for students (teacher candidates) in the elementary education major at a regional comprehensive university, part of a large public university system, located in the second-largest city in a midwestern US state. This online course, which enrolls between twenty-five to thirty-five students, is one of the first education courses teacher candidates must take to progress toward advanced education courses. The main objective of this intensive essential class is to support future teachers to understand the fundamental learning needs and characteristics of K–6 students with disabilities, critically analyze the quality and accessibility of the current instruction, deliver pedagogically sound and systematic adaptations for all aspects of teaching (e.g., socioemotional, physical, behavioral, teaching, and evaluation), and advocate for K–6 students with disabilities to receive appropriate adaptations in all learning environments by clearly communicating with other education professionals and parents.

The professional standards for teachers set by the Council for Exceptional Children (CEC), the most prominent professional organization in special education, require that teachers understand the needs of students with disabilities and provide appropriate adaptations for them. To align with the CEC professional standards, I, as lead instructor, initially developed this course in 2016 (i.e., course syllabus, class policy, materials, PowerPoint slides, media list, activities, assignment guidelines and grading rubrics, exams) and have updated the materials periodically when new teacher preparation standards are mandated and program-level curriculum and course requirement changes take place. I distribute these updates to other instructors in multiple sections of the course for consistency in quality and content across sections. However, instructors shared their continuous challenges in directing

future teachers to develop quality and systematic classroom adaptations for K–6 students with disabilities

The TILTed Lesson Plan Adaptation Project and the accompanying six-step process are aimed at supporting teacher candidates to achieve the main objective of the course so that they become licensed teachers at K–6 inclusive schools who are proficient in adapting classroom environments and lesson plans to be accessible for their students with disabilities. The TILTed pedagogy framework gave me an opportunity to improve the clarity and transparency of the assignment expectations and show teacher candidates what and how they need to demonstrate their understanding and skills. A TILTed approach to teaching is a good fit for this context because of its focus on the explicit, systematic, and transparent presentation of the assignment guidelines. The Systematic Approach for Adapting the Learning Environment (SALLE) model is a problem-solving approach based on the principles of Universal Design for Learning (UDL). It is the backbone of my pedagogical approach for the lesson plan adaptation project.

Research/Evidence That Informs This Approach

The SAALE model provides a conceptual framework for making decisions about how to effectively support students with diverse learning needs to improve their learning outcomes (Wood 2005). UDL highlights the importance of providing all learners with multiple means of representation, action and expression, and engagement (CAST 2018). UDL supposes that students in the same class, year, or cohort have diverse abilities, backgrounds, and learning preference, so flexible, accessible, and proactive learning environments are essential from the outset in order to meet the diverse needs and preferences of all learners (Baroni and Lazzari 2022). The SAALE model emphasizes that student learning occurs when an instructor knows students' present levels of performance, recognizes mismatches (differences) between students' learning preference (e.g., visual learners) and the classroom environment (e.g., verbal-focused lecture), guides students to understand logical connections (why) among

materials and activities, and provides adapted classroom environments accordingly.

Identifying mismatches is a crucial step in which instructors detect mismatches spontaneously and provide interventions that fit students' needs so that the curriculum is accessible to all learners. Mismatches between students' learning preferences and abilities and instructors' teaching approaches and expectations can happen at any point in instructional activities. Mismatches can be identified by various means, such as a teacher fidelity checklist, teacher observations, assessments, interactions with students, and close monitoring of student performance. Involving students in finding mismatches is an effective and practical idea to improve instruction in the university setting (Cotterill 2015). The model emphasizes the significance of explicit and systematic learning, teaching, and evaluation/grading environments. Explicit instruction "does not leave anything to chance and does not make assumptions about skills and knowledge that students will acquire on their own" (Torgesen 2004, 363). It provides step-by-step scaffolding learning activities and emphasizes timely feedback, higher levels of student engagement, and distributed practices (Archer and Hughes 2011).

Application of Research to Develop This Assignment

The TILTed Lesson Plan Adaptation Project is a comprehensive and complex final project which requires teacher candidates to demonstrate their mastery and application of the core contents covered throughout the semester. Eventually, each candidate creates three case scenarios and adaptations, including names, background information (e.g., grade, disability), strengths, weaknesses, unique needs, and environmental context. After a whole-class warm-up activity, class members move through each small task together in small groups and support and learn from each other. Through a series of small group activities, each group creates one case scenario of a student with a disability, criticizes the quality of the provided scripted lesson plan, and adapts the classroom

environments and the lesson plan. Support from the instructor (me) is gradually reduced as teacher candidates become more confident in completing their small-group tasks. Next, an independent practice (TILTed Lesson Plan Adaptation Project) follows for teacher candidates to demonstrate their mastery and application in creating two or three case scenarios independently and adapting a provided scripted lesson plan to meet the unique social, emotional, behavioral, academic, and assessment needs of their own fictional K–6 students with disabilities. In the final project, teacher candidates have an option to use or not to use the result of the small-group activities. For example, if they choose to use the small group case as one of the three case studies they must create for the TILTed Lesson Plan Adaptation Project, they need to create two more case scenarios on their own. One of the last steps is a peer review of the final draft. Teacher candidates provide peer reviews that lead to high-quality products.

The six steps can be summarized as follows:

- Step 1: Pre-assessment on the present level of understanding: Individual activity
- Step 2: Warm-up activity using a real and relevant situation: Whole-class activity
- Step 3: Guided practice using interest grouping: Four small-group activities
- Step 4: Independent practice and peer review for drafting and progress monitoring
- Step 5: Post-assessment - TILTed Lesson Plan Adaptation Project: Individual activity
- Step 6: Presentation (Role play): Individual activity

The TILTed Lesson Plan Adaptation Project and supporting activities (e.g., small group, peer review) facilitate teacher candidates' recognition that learning occurs when an instructor knows students' characteristics, preferences, and their learning environments and adapts classroom environments intentionally and judiciously, using pedagogically sound adaptations and intervention strategies. In this learning process, teacher candidates must practice the core elements of the SAALE model: they

are required to identify mismatches between the provided scripted lesson plan and their hypothetical students' learning needs, propose appropriate adaptations, and establish logical connections between them with rationale. Moreover, by creating their own case scenarios, actively investigating the issues (mismatches and logical connections), and developing solutions or adaptation strategies using critical thinking, teacher candidates take ownership of their learning process, gaining more control and choices for their cases.

The core principles of UDL are implemented in the development process of the TILTed Lesson Plan Adaptation Project. Teacher candidates learn about the project guidelines through multiple means of representation (e.g., written description, template, verbal explanation during meetings), express their ideas through multiple means of action and expression (e.g., small group discussion, peer review, drafts, presentation, role play), and are actively engaged in multiple activities with their own case scenarios featuring disability categories of their interest as a group (guided practice) and also as individuals (independent practice). A template (see TILTed Lesson Plan Adaptation Project Description and Template) outlines the core required structure of the project with four components: Description of Three Students with Disabilities, Learning Environment, Teaching Environment, and Grading and Evaluation Environment.

To find the level of educational performance of teacher candidates, I administered a pre-assessment before they began the TILTed Lesson Plan Adaptation Project. The results of the assessment allowed me to understand the teacher candidates' preparedness and gauge the level and type of support they would need to be successful in this most final project in the introductory-level education class. To find mismatches, which is a core principle of the SAALE Model, I required mandatory small-group meetings, checked on their progress, collected their opinions on the effectiveness of class activities for their preparation for the project, solicited their suggestions to improve class activities, and adapted the classroom environments accordingly. In addition, I conducted an anonymous mid-semester student evaluation survey that

allowed me to find mismatches between students' learning preferences and abilities and my teaching approaches and expectations. An astonishing learning experience is that teacher candidates change, and so do mismatches! That is why the TILTed pedagogy caught my attention immediately: it displays how I can further improve the existing assignment guidelines to make it clearer and more transparent.

Teacher candidates develop the project as they experience scaffolding in six steps designed to provide them with guided practice opportunities in a small-group format. As emphasized in the SAALE model, I recognize mismatches between how students learn and my course materials or supports in each step and provide differentiated supports to different groups and students accordingly. A mismatch is simply a point where candidates cannot succeed with their abilities due to environmental factors. During the guided practice step of the TILTed Lesson Plan Adaptation Project, two specific teaching techniques—scaffolding and small-group activities—are used to support candidates to gradually become more proficient and successful independent learners. Scaffolding is a teaching technique that breaks down a complex task into smaller and more manageable steps and provides necessary support and feedback as students learn a new skill and work through each step. The project template serves as a visual cue to help teacher candidates see the direction they are heading and a big picture of their ultimate learning goal.

Evolving the existing assignment into the TILTed Lesson Plan Adaptation Project and incorporating the principles of the SAALE model have improved the project's quality and provided a clear framework for teacher candidates. The project gives candidates opportunities to practice how to detect mismatches between the descriptions in their case scenarios and the provided scripted lesson plan, establish logical connections, and develop pedagogically sound adaptations along with their rationale for their K–6 students with disabilities in inclusive classrooms. Teacher candidates observe and experience the implementation of the SAALE model in their university class as they engage in the same problem-solving steps to develop the TILTed Lesson Plan Adaptation Project.

TILTed Assignment

Below are details outlining the TILTed Lesson Plan Adaptation Project. Key deadlines include:

- Draft for Peer Review: 20 Points (Due Date: Sunday, Oct. 22, 2024)
- Final Lesson Plan Adaptation Report: 200 Points (Due Date: Sunday, Oct. 29, 2024)
- Presentation with One-page Summary Handout to Classmates: 30 Points (Due Date: Tuesday Oct. 31, 2024)

Purpose

After completing this project, teacher candidates will understand (1) the characteristics of students with various disabilities, (2) Universal Design for Learning (UDL) and the Six Principles of Highly Effective Instructional Tools, and (3) the Systematic Approach for Adapting Learning Environment (SAALE) instructional strategies for working with students with disabilities.

After completing this project, teacher candidates will be able to (1) identify and discuss key characteristics of students with various disabilities and their influence on student learning, (2) evaluate and identify the quality of lessons using UDL and other quality measures, (3) discuss the benefits of using an inclusive instruction framework (e.g., SAALE model) in adapting classroom environments for students with disabilities, and (4) discuss adaptation recommendations for a class-wide lesson plan and their rationales to meet the needs of K–6 students with disabilities.

Materials

Teacher candidates will use the scripted academic lesson plan, Completing Sentences—the same lesson plan evaluated and adapted during small-group discussion activities—and, using the Lesson Plan Adaptation Project template, describe the adaptations needed in each classroom environment for each of the three students with disabilities.

Task

The steps of the assignment are outlined below and should be completed in sequence to guide your analysis and lesson adaptation process.

Case Scenarios

For this project, teacher candidates assume that they are an elementary school teacher who has at least twenty students, three with disabilities, in the inclusive general education class.

Identify and describe three students with disabilities. Three students with disabilities who are eligible for special education services need accommodations/adaptations for their disabilities as follows:

- Student #1 = visual, hearing, or physical
- Student #2 = learning (due to reasons other than ADHD)
- Student #3 = behavioral

Personalize the descriptions of the three students. Provide a name for each of the three students and describe the specific nature of the disability. For example: Charles is a 14-year-old boy who has severe diabetes that is causing him to lose his sight. He is currently able to see with great magnification but will be blind within a few years. In addition, describe each student's strengths and weaknesses in academics and social behaviors. For example: Charles is very social and appears to have many friends around school. He seems to have difficulty keeping track of his assignments and notes.

Adaptations of Classroom Environments and Their Rationale

Environment. All environments (learning, teaching, and evaluation/grading environment) should be relevant to the provided scripted lesson and the selected disabilities in the case scenarios. Under each of the required sections, appropriate adaptations for the three students with disabilities should be addressed in order (see template).

Rationale statements using peer-reviewed articles. Teacher candidates must provide an explanation and example of the adaptations/accommodations they propose for each student in terms of what that adaptation would be as well as a rationale for why an adaptation is needed or not needed. Using at least six scholarly, peer-reviewed articles (at least one article for each environment: socioemotional, behavioral, physical, material, instructional strategy, and evaluation/grading environments), students must provide a pedagogically sound rationale for why the adaptation to each environment was needed and should be implemented in the proposed manner.

(Optional) Use of Small-group Discussion Results

Teacher candidates have an option to use or not use the result of the small-group activities. In the small-group activities, teacher candidates together review the Lesson Plan Adaptation Project guidelines, develop one hypothetical case scenario, evaluate the overall quality of the scripted lesson plan using the principles of Highly Effective Instructional Tools and Universal Design for Learning (UDL), evaluate the suitability of the lesson plan for their hypothetical K–6 student with a disability, and propose adaptation recommendations (learning, teaching, and evaluation/grading environments) for the scripted lesson to meet the unique needs of their own fictional K-6 student with a disability.

- If a teacher candidate *chooses to* use a hypothetical case scenario developed with the small group members in the Lesson Plan Adaptation Project, this case is one of the three case scenarios. That means, independently, the teacher candidate needs to create two more cases with appropriate environmental adaptations and rationale statements.
- If a teacher candidate *chooses not to* use the hypothetical case developed by the small group, that is OK. That means, independently, the teacher candidate needs to develop three case scenarios with appropriate environmental adaptations and rationale statements

Presentation

Teacher candidates submit a one-page summary about one of the three students and present the case as a general education teacher presenting one student case to Individualized Education Plan (IEP) team members. Classmates act as participants at an IEP case conference meeting, such as parents, teachers, a school representative (e.g., principal), a school psychologist, and other related professionals.

Criteria

In a draft, candidates are required to provide evidence of their ideas (e.g., list of ideas, bullet-pointed ideas, or sentences/paragraphs) for all required contents/headings/subheadings (e.g., Evaluation and Grading Environment and Rationale: Student #1, Student #2, and Student #3). Candidates should submit the final project in the university learning management system (Brightspace). The following shows main grading categories with percentages for the final submission (200 points). A comprehensive scoring rubric can be found in Brightspace.

- Descriptions of Three Imaginary Students with Disabilities: 10%
- Socio-emotional Environment and Rationale: 10%
- Behavioral Environment and Rationale: 10%
- Physical Environment and Rationale: 10%
- Materials and Rationale: 10%
- Instruction/Instructional Strategies and Rationale: 20%
- Evaluation and Grading Environment and Rationale: 10%
- APA Style: 10%
- Writing Mechanics: 10%

Critical Reflection on the TILTed Assignment

Before I encountered the TILTed assignment examples and guidelines, I was confident that the original lesson plan adaptation guideline I had developed was clear and transparent. The TILTed framework and its required headings and contents immediately caught my attention because they are much more explicit, clear, and systematic than the project descriptions I have used. As an instructor who strongly believes in the

logical connections between well-organized, explicit teaching practices and student learning, I noticed four unique components of the TILTed assignment template: distinctive headings, comprehensive purposes, a list of materials, and a list of brief grading criteria. The original project description I previously used included all these contents but did not have headings for each of the different components, and its' purpose statement was brief and did not distinguish knowledge from skills. Most materials for the project were listed in the original description but not presented under a separate heading. The original project had comprehensive grading criteria in a separate document. Presenting the brief criteria at the end of the TILTed assignment framework makes the project description document a self-sufficient at-a-glance document for the project. Teacher candidates can easily get the big picture of the project grading criteria from the TILTed assignment description before opening and reviewing the comprehensive multi-page grading rubric.

As a result of the improved project guidelines and associated activities using TILTed pedagogy, as well as the systematic step-by-step scaffolding process, teacher candidates demonstrated their proficiency in adapting classroom environments and the scripted lesson plan to meet their hypothetical students' needs and abilities and were able to provide a pedagogically sound rationale for why the proposed adaptations were needed and should be implemented. In their evaluations, students unanimously indicated that my class materials were well-prepared, clear, and helpful. In a recent official external review, the reviewer recognized the value of the TILTed guideline and their logical flow, clarity, and transparency:

> "Post-test results (Lesson Plan Adaptation Project) showed that students benefitted greatly from use of the SAALE model and the types of structured activities and assignments that students were required to participate in."

My role as a teacher educator is to practice the continuous teaching improvement cycle, update myself with effective teaching strategies,

and help teacher candidates explore strategies that meet their own learning needs as well as those of their future K–6 students with disabilities. The TILTed pedagogy framework offered me a timely opportunity to evaluate the effectiveness of my current assignment guidelines and further clarify them to achieve the learning objectives. My use of the TILTed framework in course assignments allowed future teachers to experience the importance of transparent and systematic assignment instruction for their learning and prompted them to eventually implement this in their own classes. I have a strong aspiration to "practice what I preach." As a teacher educator, it is my responsibility to model effective teaching for future teachers of K–6 students with disabilities. In their evaluations, teacher candidates reported that my classes helped them address the educational challenges in local K–12 schools.

Role-play is a widely used pedagogical approach in all disciplines. My next improvement target is the role-play presentation using a case scenario each student creates, which is the last step of the TILTed Lesson Plan Adaptation Project. The score teacher candidates earn for this role-play presentation is separate from the score they receive for the written project. Adding a role-play is my way of applying the UDL principle of multiple means of action and expression. To maximize future teachers' understanding of the importance of their role and presentation in an IEP meeting that decides educational goals and supports for eligible students with disabilities, I plan to incorporate the TILTed framework in the role-play guideline. Since I am now more fluent with the TILTed framework, I feel confident that I can create a more transparent, explicit, and clear role-play guideline.

Modifying, Adapting, or Applying This Assignment for Other Contexts

The TILTed assignment framework is effective in all learning contexts, providing a clear blueprint of a project. Furthermore, the framework is flexible and can be integrated with various research-proven approaches to maximize student learning. The step-by-step procedure used in the process of developing the TILTed Lesson Plan Adaptation Project

can be implemented in projects of all sizes, various disciplines, and different modalities. When students do not grasp certain concepts or feel overwhelmed by an extensive and complex project and when collaborative guided practices in small groups are not sufficient, establishing milestones and checkpoints and conducting regular help sessions or individual meetings with an instructor are additional support activities and proactive strategies to help students solidify their understanding of how to demonstrate their learning in a project.

To prepare university students for a comprehensive project and increase their success rate, an instructor must constantly redirect them to refer to the TIILTed assignment description to help them envision their ultimate learning goal. That is why well-established, clear, and transparent descriptions are critical in teaching and learning. Instructors can model the project by providing a sample hypothetical case or project that meets the expectations stated in the TILTed assignment description and grading rubric. Students must also have varied practice opportunities through a class-wide brainstorming activity, guided small-group activities, and peer review. At all times, students are consistently referred to the TILTed assignment guideline as a blueprint, to remind themselves of the requirements and underlying rationale. This repetition reinforces their understanding of the assignment requirements, helps them retain important information, and builds confidence in their ability to complete tasks effectively. Finally, independent practices or projects provide each student with an opportunity to investigate and explore the possible solutions, demonstrating their mastery of knowledge and skills.

The TILTed framework is an advanced approach for clear and transparent teaching, but written expressions can be interpreted differently by different students. In all classes and disciplines, the various UDL teaching practices can be used for additional clarification of the written assignment guidelines. In an online class, instructors can go over the project guidelines in a real-time synchronous online meeting (e.g., Webex). I also offer a brief video describing the core components of the TILTed project. In addition, I meet with each small group to

clarify the project requirements and explain the close connection between the series of small group activities and their final project using the TILTed project template. On average, I conduct about six 30-minute meetings for each group. For a large-enrollment class, small-group activities online or in class are possible, but meetings with each group may not be feasible. I recommend recruiting one of the interactive and collaborative small groups, recording a meeting between the instructor and group members (with student permission), and sharing the video with the class. I have uploaded several instructional videos in Brightspace (cloud-based learning platform) to support the project, including a well-designed and thoroughly edited short video enhanced with visual effects created using Camtasia. The video that had the most views and comments from students was one featuring Q&A interactions between my students and myself.

The TILTed assignment description accompanies a project template which serves as a road map not only for the TILTed Lesson Plan Adaptation Project, but also for guided small-group activities. A series of small-group activities follows the order of required items in the template. For example, the first small-group discussion is about the first component in the TILTed project template. The instructor must closely monitor group and individual student performance by reviewing their interactions during group discussions and then provide timely feedback and meet with each small group in person or via an online conferencing tool to respond to their questions. The TILTed Lesson Plan Adaptation Project requires each student to submit a draft. Through peer review and review from me on their draft, candidates learn how to refine and finalize their project. After reviewing student drafts, I make a whole-class announcement to highlight common patterns in strengths and challenges. These timely supports and feedback are invaluable assets for any project.

References

Archer, Anita L., and Charles A. Hughes. 2011. *Explicit Instruction: Effective and Efficient Teaching*. Guilford Press.

Baroni, Federica, and Marco Lazzari. 2022. "Universal Design for Learning at University: Technologies, Blended Learning and Teaching Methods." *Studies in Health Technology and Informatics* 297: 541–548. https://doi.org/10.3233/SHTI220885.

CAST. n.d. "Universal Design for Learning Guidelines Version 2.2." Accessed August 30, 2023. https://udlguidelines.cast.org.

Cotterill, Stewart T. 2015. "Tearing Up the Page: Re-Thinking the Development of Effective Learning Environments in Higher Education." *Innovations in Education & Teaching International* 52 (4): 403–13. https://doi.org/10.1080/14703297.2013.862174.

Council for Exceptional Children. (2024, Oct 15). *Initial Practice-Based Professional Preparation Standards for Special Educators*. https://exceptionalchildren.org/standards/initial-practice-based-professional-preparation-standards-special-educators.

Torgesen, Joseph K. 2004. "Lessons Learned from Research on Interventions for Students Who Have Difficulty Learning to Read." In *The Voice of Evidence in Reading Research*, edited by Peggy McCardle and Vinita Chhabra, 355–382. Brookes.

Wood, Judy W. 2005. *Teaching Students in Inclusive Settings: Adapting and Accommodating Instruction*. 5th ed. Merrill/Prentice Hall.

CHAPTER 15

Taking a TILTed Perspective Using Case-Based Learning in Speech-Language Pathology

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Navigation Tools

What: Analytical & Interpretive Work
Where: Health Professions

This chapter describes the development and implementation of a TILTed assignment that uses case-based learning and perspective-taking to teach students about laryngeal cancer in a speech-language pathology course. The assignment was developed for an independent study course for advanced undergraduate students who lacked experience with "live" clients. The assignment uses progressive case studies and assigns students different personas related to the case, such as the patient, family members, and medical professionals. Through discussions and written reflections, students explore the case from multiple viewpoints, considering the impact of laryngeal cancer on various aspects of the patient's life. The author highlights the benefits of this approach, including increased student engagement, deeper understanding of the complexities of laryngeal cancer, and improved metacognitive awareness.

Description of Teaching/Learning Context

Teaching students in clinical disciplines (i.e., nursing, dietetics, physical therapy) requires that students learn about disorders and conditions (at least initially) without ever seeing a "live" patient. This might be because programs are predominantly located in geographic regions far from medical centers, or it could be that students are not yet advanced enough in their programs of study to be able to work with clients in clinics or other medical settings. In those cases, course instructors in clinical disciplines turn to case-based learning, developing case studies for thinking and discussion or using simulations or standardized patients for students to learn.

This was the situation with the course that inspired the development of this TILTed assignment. Together with a colleague, we developed an independent study course for up to fifteen students each semester. The focus of this course was the diagnosis and treatment of laryngeal cancer. The course was housed in our speech-language pathology program and enrolled advanced undergraduate students, most of whom lacked any experience with "live" patients. Thus, this course used case-based learning exclusively to give students experience with thinking clinically about patients with laryngeal cancer. When planning this course and this assignment, my colleague and I discussed at length the strengths and limitations of using case-based learning approaches and set the goal for ourselves to develop rich, complex case studies that would allow our students to understand laryngeal cancer from a variety of perspectives. We felt this to be critical as laryngeal cancer can impact a patient's ability to use their voice, communicate effectively, eat, breathe, and engage with others.

Because students lacked experience with laryngeal cancer prior to enrolling in this course, it was critical to us that we make very transparent what we hoped each student would take from the cases they were exposed to as well as how to make connections between this clinical topic, speech-language pathology courses, and the contributions that other stakeholders (i.e., patients, caregivers, other medical professionals) might make to each case. The TILT framework was a perfect fit for our

goal of transparency with our students, as was our discovery "thinking hats" that inspired this assignment. I read a blog post (Nufer 2015) about using de Bono's thinking hats—a strategy used to teach leadership skills in the business world—to teach perspective-taking in college courses. I shared it with my colleague, and we knew that a combination of case-based and perspective-taking approaches to teaching would best support our students' learning.

Research/Evidence that Informs this Approach

Case-based learning (CBL) is an active learning approach that engages students in thinking critically about cases tied to (largely) clinical disciplines. CBL can be realized across several methods or contexts, including the following:

- written summaries of cases that students read, reflect upon, discuss, and/or write about
- simulated cases where students work through cases in simulation labs to experience clinical practice
- standardized patients, where actors are used to simulate scripted clients with certain conditions and students engage with the actors to experience what it is like to play the role of a clinician in a realistic setting.

The goal of CBL is to help students work across Bloom's Taxonomy (Anderson, Krathwohl, and Bloom 2001) to recall course content related to a case, analyze critical components of the case, then synthesize potential strategies to best apply to a case (Friberg and Vinney 2022; Trommelen et al. 2017). CBL should take students on a journey from initial exploration of a clinical case to some sort of plausible, real-life, application of course content to the complex needs of patients with disorders affecting their everyday life. CBL allows for low-stakes, active exploration of topics in a manner that allows for discussion, safer mistake-making, and better understanding of course content and application (Foran 2002; Krain 2016; Nkhoma et al. 2017).

In 1985, de Bono first shared his ideas for teaching perspective-taking in the business world. The idea was that individuals could wear

different colored "thinking hats," each symbolizing a leadership skill (i.e., identifying facts, thinking outside the box, managing projects) that when distributed across a team, allowed individuals to focus on specific processes important to solve business problems. Each person's task would be easily identified by the color of the hat, allowing team members to help each other stay on track and move a project/discussion forward. Nuhfer and Pavelich (2001) suggested that thinking hats could be used to teach metacognitive skills in a variety of ways, primarily through small group discussions where students solve problems from different perspectives. Others agreed, citing the use of thinking hats to teach critical thinking (Kivunja 2015) and reflection (Kenny 2003) in clinical courses.

Vinney and colleagues (2019) studied the combination of CBL and perspective-taking to determine its efficacy with students over several semesters of enrollment in the course described at the onset of this chapter. This study found that the combination of CBL and perspective-taking led to a variety of positive gains in their speech-language pathology course. Findings indicated that students' metacognitive awareness increased significantly and students demonstrated increasing levels of cognitive processing from the start to the finish of their experience with this course. It is the application of the processes described in by Vinney and colleagues (2019) that are explored below.

Application of Research to Develop This Assignment

The course described in this chapter met every other week over the course of sixteen weeks and was conducted as a seminar with small group discussion amongst all of the students for each meeting. Prior to each course meeting, students completed an assigned reading from a text focused on the assessment and treatment of laryngeal cancer (Friberg and Vinney 2016). At the onset of each class meeting, students had the opportunity to ask questions to clarify or extend what they learned as they completed their readings. Once those questions were

addressed, the bulk of each class meeting was reserved for CBL and perspective-taking, as follows.

Ahead of each class meeting, my colleague and I developed progressive case studies for each class meeting. Progressive case-studies are those that provide information about a case, then ask questions that build on one another. For instance, the first week of the course focused on the diagnosis of laryngeal cancer and led students through thinking about one client, Donna. Students were provided a description of her symptoms and presentation and were asked three, specific discussion questions about the case that allowed students to see what happens at different timepoints as patients are diagnosed with laryngeal cancer.

Then, Students were asked to carefully read the description of symptoms along with the first question. Before discussion began for each class meeting, students were assigned different personas to adopt during the discussion of each case. Rather than have colored hats to depict different jobs like de Bono did in his original work, we adapted the way in which students took on their personas by using peel-and-stick name tags that identified stakeholders relevant to each case study (i.e., patient, employer, surgeon, son/daughter, partner, nurse, counselor).

Discussion then ensued, with each student responding to the progressive questions as the individual on the nametag. This led to a fulsome discussion of each case from many personas. After each class meeting, students were asked to reflect on the class by addressing four standardized questions (Vinney et al. 2019):

- After completing my readings and participating in class activities, what important insights have I noted?
- What questions do I have about this material after reading/participating in this discussion?
- Did I find this material interesting? Why/why not?
- What information conflicted with my own experience/perspective?
- How did our discussion/activity this week impact my learning?

Reflections were submitted to my colleague and me, and we provided feedback for each student to address questions and acknowledge students' perceptions of their experience in the course. We also used feedback from

these reflections to make adaptations to other TILTed assignments for this course, each of which followed a very similar format.

TILTed Assignment

Below are details outlining the assignment.

Purpose

The purpose of today's assignment is to think critically about a patient named Anne (described at the end of this assignment). You will use today's in-person class time to engage in a small group discussion with your classmates. You will then complete a brief written reflection as a debrief of your discussion and your thoughts about this client. The purpose of these activities is to explore Anne's case, ask/answer questions you have about Anne's case, and think about how Anne and other important people in her life might respond to her case, particularly in the case (like Anne's) where patients require the use of laryngeal speech after surgery for laryngeal cancer. This will help you better understand how laryngeal cancer impacts patients like Anne across their day-to-day life.

Task

Read each of the three parts of the case study of Anne for today. Once you're done reading, pick at random one of the nametags in the center of the table. Each name tag will have a person who is important to this case. For today, you will take on the identity of one of the following: patient, otolaryngologist/surgeon, spouse, daughter/son, speech-language pathologist, employer, friend, or social worker. With your personas in mind—and together with your group—work through your reactions to the three case study parts. Discuss, as appropriate, the following:

- reactions you think each persona might experience to each part of the case study
- concerns/needs from the perspective of your persona

- benefits and drawbacks to each of the treatment options, with SLPs answering any questions about laryngeal cancer that other personas might not be aware of (but facilitators will help.)
- ideas to make Anne's life richer, better, and/or more supported across important life contexts
- anything else that comes up

After today's discussion wraps up, submit your responses to the following five questions:

- After completing my readings and participating in class activities, what important insights have I noted?
- What questions do I have about this material after reading/participating in this discussion?
- Did I find this material interesting? Why/why not?
- What information conflicted with my own experience/perspective?
- How did our discussion/activity this week impact my learning?

There is nothing to submit for the discussion portion of today's class meeting. Your reflection questions will be submitted through our course Canvas site in the assignment matching today's class date. All reflections are due by 5 p.m. the Friday afternoon following each class meeting.

Criteria

Your participation in today's discussion is worth 5 points and will be evaluated as follows:

- 5 points = Attempted to provide responses/reactions *or* ask questions from your assigned persona in each part of the case study.
- 3 points = Attempted to provide responses/reactions *or* ask questions from your assigned persona in two parts of the case study.
- 1 point = Attempted to provide responses/reactions *or* ask questions from your assigned persona in one part of the case study.

Your reflection will be worth 5 points and will be evaluated as follows:

- 5 points = shows clear and deep thought about the reflection questions, offering critical thinking and opinions about the class discussion.

- 3 points = shows some clear and deep thought about the reflection questions, but some aspects of the reflection appear to just scratch the surface, in terms of offering critical thinking and opinions about the class discussion.
- 1 point = reflections are too brief to fully explore the questions posed and demonstrate a lack of critical thinking and opinions about the class discussion.

Case Study #5

Part 1: Diagnosis and Treatment Planning

Anne is a 53-year-old married woman who was diagnosed with squamous-cell carcinoma of the larynx approximately 10 days ago. She is meeting today with her cancer care team to talk about treatment. Her otolaryngology (ear-nose-throat doctor) surgeon is recommending a total laryngectomy due to the fact that Anne's laryngeal tumor was found to have crossed the anterior commissure of the larynx. Her radiologist has suggested post-surgical radiation to minimize the chance of recurrence. Other than her cancer, Anne is in good health and is active socially. She is a receptionist at a local legal firm, where she has worked for the last 25 years.

Part 2: Post-Surgical Adjustment

In the period immediately following her total laryngectomy, as well as through the period of radiation therapy, Anne communicated using an electrolarynx (EL). She became a very proficient user of a neck-type device such as an EL. With the exception of the mechanical quality of the EL signal, it met her communication needs fully and no restrictions were noted. However, at seven months post-surgery, Anne found that the use of the EL was not always easy or efficient. For this reason, Anne is now seeking information on a secondary tracheoesophageal (TE) puncture from her otolaryngologist and speech-language pathologist.

Part 3: Post-Secondary TE Puncture

In consulting with her health care providers, a decision to undergo a secondary TE puncture is made. With time, Anne is able to use TE speech to communicate, with noted benefits. Anne's remaining concerns center on the expense of the TE puncture voice prosthesis and general issues related to its management and care. To Anne, these concerns do not appear to override the advantages she sees in seeking a TE puncture.

Critical Reflection of the TILTed Assignment

Because the independent study where this TILTed assignment was used was designed to be more of a discussion-based seminar than a traditional didactic course, the initial experience for both my colleague and I—and our students—was largely positive. We were able to interact formally and informally with students to understand their experience as learners and respond (many times on the spot) to any concerns or questions that arose. Additionally, through other in-person conversations and written reflections we were able to identify pain points for each case assigned and make adjustments over time to ensure that the cases we discussed were structured in a way that scaffolded learning and encouraged discussion.

In terms of lessons learned, it became quickly apparent to my colleague and I that students needed to know that our TILTed discussions were spaces for exploration of laryngeal cancer and its impacts on communication. Prior to this independent study, students had not had experience with live clients with this disorder—or with coursework about laryngeal cancer. As such, many students were initially hesitant to respond to cases through the lens of their assigned persona, fearing that anything they might offer to the group discussion would be incorrect or lacking. To offset this concern, my colleague and I changed our criteria for success for each discussion to ensure that students were graded on effort and participation, rather than accuracy. We also instituted the ability for students to "pause" our discussions anytime they wanted to ask a content-based question about the case or client being focused on in

the discussion. This allowed students to feel confident in their content knowledge and led them to be more likely to engage in the group discussion about the case.

Additionally, we realized that to maximize our goal of helping students to understand the ways in which laryngeal cancer affects the day-to-day lives of patients, we needed to expand the group of stakeholders represented as personas in TILTed discussion experience. Initially, we assigned personas that represented the medical practice and/or the treatment of laryngeal cancer (i.e., doctors, medical specialists, oncologists, surgeons, speech-language pathologists, respiratory therapists). While those varied personas were critical to the treatment of patients with laryngeal cancer, we observed that discussions in our course meetings were narrowly focused. Upon reflection, we realized that we needed to include the perspectives of family members, partners, employers, friends, and others removed from medical treatment to give a realistic view of how laryngeal cancer might affect not only a patient's health and prognosis, but also family, friend, and workplace relationships.

Modifying, Adapting, or Applying This Assignment for Other Contexts

Without doubt, the use of case-based perspective taking has clear and relevant applications to other clinical contexts. Students in courses based in disciplines such as nursing, nutrition, medical, physical therapy, and so forth, provide rich spaces for the use of this pedagogical approach, as case study work is commonplace and (arguably) expected as part of most programs of study. That said, uses of this type of assignment may well offer interesting opportunities in non-clinical disciplines, as well. To envision this, I would suggest that the terms "case" and "perspective" might be broadly interpreted.

For instance, the topic of cellular function might be an important topic in a biology course. While students can learn about the various structures of the cell, they can also be asked to view cell function as a "case," perhaps asking students how human cells function when

fighting an infection. Students could be assigned various cellular structures to represent as the process of fighting infection is discussed (i.e., leukocytes, phagocytes, lymphocytes, antibodies, antigen). Students would assume the role/function of the cellular structure and discuss the contributions of each in fighting infection. Thus, the assigned "case" is focused on learning course content through different functional lenses. As another example, a comparative literature or history course might use a variation of this TILTed assignment by asking students to examine a period of history through the lenses of various influential individuals of the time.

References

Anderson, Lorin, David Krathwohl, and Benjamin Bloom. 2001. *A Taxonomy for Learning, Teaching, and Assessing: A Revision of Bloom's Taxonomy of Educational Objectives*. Longman.

de Bono, Edward. 1985. *Six Thinking Hats: An Essential Approach to Business Management*. Penguin Books.

Foran, John. 2002. "The Case Method and the Interactive Classroom." *The NEA Higher Education Journal* 17 (1): 41–50.

Friberg, Jennifer C., and Lisa A. Vinney. 2016. *Laryngeal Cancer: An Interdisciplinary Resource for Practitioners*. Slack.

Friberg, Jennifer C., and Lisa A. Vinney. 2022. "Case-Based Perspective-Taking: A New Active Learning Pedagogy." In *Evidence-Based Education in the Classroom: Examples from Clinical Disciplines*, edited by Jennifer C. Friberg, C. F. Visconti, and S. Ginsberg. Slack.

Kenny, Lesley. 2003. "Using Edward de Bono's Six Hats Game to Aid Critical Thinking and Reflection in Palliative Care." *International Journal of Palliative Nursing* 9 (3). https://doi.org/10.12968/ijpn.2003.9.3.11484.

Kivunja, Charles. 2015. "Using de Bono's Six Thinking Hats to Model and Teach Critical Thinking and Problem-Solving Skills Essential for Success in the 21st Century Economy." *Creative Education* 6 (3): 380–391. https://doi.org/10.4236/ce.2015.63037.

Krain, Matthew. 2016. "Putting the Learning in Case Learning? The Effects of Case-Based Approaches on Student Knowledge, Attitudes, and Engagement." *Journal on Excellence in College Teaching* 27 (2): 131–153.

Nkhoma, Mathews, Narumon Sriratanaviriyakul, and Huy Le Quang. 2017. "Using Case Method to Enrich Students' Learning Outcomes." *Active Learning in Higher Education* 18 (1): 37–50.

Nuhfer E. and Pavelich M. 2001. "Levels of Thinking and Educational Cutcomes." *National Teaching and Learning Forum* 11 (1): 9–11.

Trommelen, Rachel, Aryn Karpinski, and S. Chauvin. 2017. "Impact of Case-Based Learning and Reflection on Clinical Reasoning and Reflection Abilities in Physical Therapist Students." *Journal of Physical Therapy Education* 31 (1): 21–30.

Vinney, Lisa, Jennifer Friberg, and Mary Smyers. 2019. "Case-Based Perspective-Taking as a Mechanism to Improve Metacognition and Higher-Level Thinking in Undergraduate Speech-Language Pathology Students." *Journal of the Scholarship of Teaching and Learning* 19 (3). https://doi.org/10.14434/josotl.v19i2.24006.

CHAPTER 16

Critical Autobiography for a Digital World

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Navigation Tools

What: Analytical & Interpretive Work
Where: Interdisciplinary & Integrative

This chapter examines a reflective activity called the Critical Autobiography for a Digital World, designed for upper-level undergraduate courses in humanities and social sciences. This activity encourages students to critically discuss events or artifacts that have shaped their professional development, culminating in a multimedia product. The chapter emphasizes the activity's implementation in diverse university settings, accommodating varying student backgrounds and abilities. The pedagogical approach draws on critical thinking and digital literacy theories, recognizing their significance in contemporary education. Specifically, this chapter outlines the application of the Critical Autobiography, highlighting its iterative nature and the range of technological choices available to students to promote self-reflection and embrace diversity in disciplines and levels of achievement.

Description of Teaching/Learning Context

The Critical Autobiography for a Digital World offers a reflective activity for upper-level undergraduate courses in humanities and social sciences. The outcome of the activity is in the iterative critical discussion on events or artifacts important for students' professional becoming, with a final product created in a multimedia format. The main objective of this activity is to reflect on events in life, academic, or professional career that have resulted in learning and that have led to the development of values, qualities, or expertise levels needed to succeed in the professional world.

We implement this activity in courses offered in the Professional Writing and Communication Studies programs in small universities in the Midwestern United States. Both courses have a distinct multidisciplinary profile as the mix of students taking them typically features a variety of backgrounds and abilities in academic and discipline-specific writing, experience with technology, and professional exposure. The writing course attracts students from various disciplines: environmental science, business, sports management, emerging media, and public relations. The communication course is a capstone required for students at the end of their bachelor's degree. Because students, who complete the courses in our programs, have diverse stories and experiences, the Critical Autobiography for a Digital World activity invites various forms of evidence and allows space for students to negotiate arguments about their growth.

The TILT framework helps emphasize inclusive teaching practices, and it fits our teaching and learning context. The universities where we teach differ in their location (urban vs. rural), type (small private vs. regional public), predominant mode of instructional delivery (mostly in-person vs. combining in-person and online instruction), and population served (mostly first-time-in-college vs. mostly post-traditional students). Nevertheless, our teaching practices overlap in the focus on critical thinking and digital literacies that remain an important aspiration for many students in the United States (Benson and Boyd 2015; Grant and Smith 2018; Nicholas and Raider-Roth 2016). While the

selection of experiences students may choose to discuss in their autobiographies can vary by the discipline, and while some disciplinary consideration for length, means, and style can take effect, the final product of a critical autobiography will deliver a similar critical assessment of experiences and goals, a similar argument of achievement, and a similar impact of engaging an assumed professional audience.

Research/Evidence That Informs This Approach

The Critical Autobiography for a Digital World incorporates two theories suggesting the goals of learning: critical thinking and digital literacy. Critical thinking refers to qualities describing ideal thinkers who embrace conceptual knowledge, application skills, and character dispositions. Some examples include purposeful communication, intellectual humility, analysis, synthesis, perspective-taking, and reflection signify critical thinking (Brookfield 2012; Zhou 2022). Faculty in higher education generally agree on the need to develop critical thinking, yet there are no uniform approaches to pedagogies of harnessing the skills and qualities related to critical thinking (Nicholas and Raider-Roth 2016). Specifically, the assignment discussed in this chapter highlights the process of making claims about a student's expertise and the milestones of achieving such knowledge, articulating professional goals and values, and analyzing them as personal or professional accomplishments.

Digital literacy refers to the abilities of students to use digital devices and to think about academic or workplace implications from the perspective of digital media tools and contexts (Swaak 2022; National Council of Teachers of English 2019). Critics agree that colleges and academic programs need to emphasize student needs in teaching media skills in various disciplines (Dobrin 2020; Tinmaz et al. 2022) because colleges may overestimate how tech-savvy students are (Swaak 2022). The emphasis on digital literacy relates to the ever-changing mediascapes where the students and graduates' function both as citizens and professionals, who deal with information production, dissemination, and consumption. Because media and their uses are always in flux, digital literacies are temporary, contextually situated, and incomplete; therefore, acquiring

such literacies is a continuous task for many members of the university communities (Gajjala et al. 2012). The assignment discussed in this chapter offers an opportunity to engage in the negotiation and application of digital skills to produce a representation of students' narrative about professional becoming.

Both critical thinking and digital literacy are complex in their pragmatic applications in concrete programs and courses, yet the TILT pedagogy is helpful in translating complex concepts, such as critical thinking and digital literacy, to teaching practices. The faculty who strive to implement transparent teaching provide students with information about why college courses include specific activities and how students can achieve success in those learning activities. When we use activities targeting critical thinking and digital literacy, the TILT framework establishes a recognizable structure for assignments.

Application of Research to Develop This Assignment

The Critical Autobiography for a Digital World offers a layer for engaging students in reflection about professional or personal milestones, artifacts, or events. Students reflect on their achievements by connecting them to the professional goals they (learn to) articulate. We encourage students to come back to their Critical Autobiographies a few times during the semester. The extended timeframe produces the iterative nature of the Critical Autobiography, which helps students engage in reflection more than once. In the communication studies course, students produce a biographical statement first as an informal self-introduction at the beginning of semester. Then they articulate important professional goals and values, and further they include a critical biographic narrative in the senior portfolio. The feature of this activity is that students revise their narratives at different times in the semester.

In the writing course, the Critical Autobiography is the initial step in the development of a broad platform of iterative reflections on the skills, values, and aspirations that may have resulted from any

professional or educational activities. The assignments that follow the critical autobiography constitute a deliberate effort in assembling a portfolio of artifacts that speak to the set of skills, values, and aspirations identified in the Critical Autobiography. In other words, the Critical Autobiography assignment, produced early in the class, serves as both a road map for a multimedia portfolio and an epistemological tool for discovering, adopting, or preparing its content with an intent to advance one's professional prospects.

Further, the Critical Autobiography is an invitation to negotiate understandings of technology and digital skills. Students explore their technical inspirations and ambitions against the actual applications of those skills. While staggered assignments require or encourage student engagement with multimodal forms of expression, the level of digital literacy achievement, however, remains a range of opportunities, rather than a set of expectations or required competency levels. Because students in non-technical programs, like writing and communication, have a range of skills with digital applications, we position the Critical Autobiography not only as a task in arranging and assigning meanings to the acquired and sustained knowledge but also an invitation to experiment with technology that can deliver the message effectively.

Thus, the Critical Autobiography assignment invites a range of technical choices and includes a negotiation of the skills needed to use these opportunities. The courses we discuss here feature instruction in the tools that produce digital media as well as an examination of concepts, trends, and issues in digital communication. To recognize the range of savviness among the students, we practice encouragement for experimentation and acceptance of various levels of proficiency. In most cases, students "arrive" at the realization of a need to master a certain technical skill that comes with a project and to develop a strategy for mastering such a skill while recognizing its importance not for a single assignment in a class but for its uses in the professional world. Discussing and modeling the affordances and implications of various tools or formats are essential elements of the activity. Students engage in different modes of delivery (e.g., through essays, infographics, web documents, and video or audio recordings)

to explore the possible options and affordances for communicating their reflections. The emphasis thus is not on rewarding or penalizing students for the use or non-use of certain multimedia applications but rather on the encouragement to reflect on current and future needs and articulation of possibilities.

TILTed Assignment

Below are details outlining the Critical Autobiography for a Digital World assignment.

Purpose

The Critical Autobiography for a Digital World will be beneficial for your learning because you will articulate professional qualities and values important for success, effectively present your progress towards professional goals in a compelling way, choose digital tools to curate and share stories, and identify meaningful criteria to evaluate your storytelling efforts.

The assignment will help you practice the following skills that are essential to your success in professional life in college and beyond academic settings, including: tell stories that connect the qualities and values you aspire with specific experiences, achievements, or artifacts; engage in multimodal communication to reinforce digital literacies; and combine storytelling and analysis.

Task

Share a story to offer an explanation about how the professional, academic, or other experiences of your life shaped you into who you are today. The story should incorporate references to projects you produced or events you participated during your academic and professional career or life-long learning. You can discuss goals you have already accomplished or plan to accomplish in the future and/or acknowledge challenges you have overcome or anticipate. Choose a format that best addresses the goals you have and the audiences you plan to engage. Follow the steps outlined below:

1. Choose a format for the Critical Autobiography (a multimodal text, a web-based text, a video, etc.).
2. Create the initial version of the Critical Autobiography. Discuss your learning to suggest that learning addresses the qualities or values of importance and that the artifacts and experiences serve as milestones of learning. Identify qualities and values of importance, along with areas in which you have excelled or would like to succeed. List or collect artifacts and specific examples of experiences, such as accomplishments or failures, that you want to refer to in your narrative. Create a story that combines narratives of experiences or descriptions of artifacts with analyses of the learning that emerges from these experiences.
3. As you work through the course, revise the autobiography based on feedback provided during the semester and reflections on the effectiveness of storytelling produced in the Critical Autobiography. The format of the Autobiography can remain the same or change throughout the semester: for example, a word-processed essay can become a web text, a video, or a combination of these technical elements. The artifacts discussed may be updated, as well as the values and qualities guiding the discussion may be changed or remain the same.

Self-Reflection Guide

Reflect on the process and the outcome of the Critical Autobiography for a Digital world at least two times in the semester. These prompts will help you plan and evaluate your autobiography.

- Strategy: What motivates your effort to create this version of Critical Autobiography? Anticipate who will become the audience of this creation and what they would want and need to see, read, listen, watch, and experience as they examine the statement.
- Capacity: What skills and resources do you have now or need to obtain to produce the most effective representation? Demonstrate growth in resources and skills needed to shape and share the story of your becoming an expert. Even the most "experienced" learners tend to question how to produce their autobiographies.
- Content: What can you showcase? How do these artifacts and experiences demonstrate your growth? What qualities and values define your learning and make your experiences meaningful? The submission should include descriptions of artifacts and experiences. These are not limited to academic achievements only, and any experience can be valuable. Both positive and negative experiences that led to ascertaining knowledge can be discussed. Build an argument that suggests how you achieve learning guided by important qualities and values. Combine the descriptions with an analysis of the learning emerging from the experiences and connect your learning with the purposes or values of importance.
- Platforms: What technologies or technical tools are available? Which one can you use for the objectives you have? The choice of delivery format and method reflects the attained or aspired level of technological ability. Some students may choose to pursue the challenge of relying on multimodal tools, while others may resort to the comfort of the tools that they already know.
- Evaluation: What criteria can serve to define the quality of the final product? How do you know that you have completed the assignment? Suggest simple and meaningful criteria to evaluate the most recent version of the Critical Autobiography.

Criteria

The criteria for evaluating the Critical Autobiography for a Digital World assignment are outlined in Table 16.1. They provide a clear framework for evaluating student work in relation to the assignment's core goals of critical reflection and digital storytelling.

Table 16.1. Critical Autobiography for a Digital World Assignment Rubric

Criteria	Rating
Critical Thinking The submission analyzes the learning emerging from the experiences and guided by the values and qualities of importance, identified by the student. The submission includes a selection of meaningful experiences and important artifacts that led to personal and professional growth. The submission articulates the values and qualities of importance served by the artifacts and experiences. Comments:	Above expectations/ meeting expectations Below expectations
Digital Literacies The choice of delivery format reflects the attained or aspired level of technological ability. The submission demonstrates resources and skills needed to shape and share the argument about student's learning. Students use technologies that are available (or needed) to compose, represent, and share their autobiographies (and other artifacts, if needed) Comments:	Above expectations/ meeting expectations Below expectations

Critical Reflection of the TILTed Assignment

We find the Critical Autobiography for a Digital World assignment successful for three reasons. First, this assignment helps students achieve success in learning. The Critical Autobiography provides a structure to synthesize experiences, explain artifacts, and articulate learning accumulated during academic careers or other significant periods defined by students. For example, a truly gratifying outcome of the professional writing class is an autobiographical narrative which refers to specific artifacts collected by students, which aligns with the set professional goals or qualities formulated by students, and which draws from in-class and out-of-class experiences that encouraged the production or revision of multimedia representation. The activity links the experiences and artifacts produced in the course of degree completion (and possibly other informal and formal education opportunities) to articulate future goals, indicate readiness for existing or potential professional challenges, or simply situate oneself in a professional setting.

Second, this assignment emphasizes the iterative process of revision. The Critical Autobiography keeps the process open for amendments, alterations of strategy, and reconsideration of emphases, implying life-long learning and continuous engagement in self-reflection. Such openness motivates students to articulate or prioritize professional qualities and values important to them and then connect such qualities with the academic and professional context in a systematic way. Students develop perspectives on personal, professional, and academic "achievement" and "success" as well as self-assessing and set future goals. One example of autobiography refers to the work as a summer camp counselor, which confirmed the student's desire to pursue a graduate degree in education. That student chose to engage in the development of a statement of teaching philosophy to enhance the portfolio and prepare for the anticipated writing in graduate school. Another student connected to the cheerleading career to articulate the practice of setting goals and breaking boundaries, which the student also referred to in the projects included in the senior portfolio.

Third, Critical Autobiography welcomes diversity in disciplines and levels of achievement. We strive to teach students to articulate lessons and find value in their achievements and struggles. At least initially, many students, especially those for whom traditional composition is not a principal skill, may approach the assignment in a formulaic way, simply summarizing the life experiences that they consider worthy—and oftentimes failing to establish pathways to the contents in the evolving portfolio. However, an ongoing discussion and analysis of good practices in Critical Autobiographies opens multiple opportunities for connecting the identified experiences to the achievements that students are proud of – and would like to display or create (possibly as part of their portfolio development if it is assigned). Some guaranteed outcomes of a semester-long progression through the Critical Autobiography typically include, but are not limited to, recognition of multiple ways of learning, more openness in sharing stories of success and failure, more critical engagement with storytelling, more creativity in designs and means of expression, and more readiness to embrace various technologies for effective storytelling.

Modifying, Adapting, or Applying This Assignment for Other Contexts

Instructors in other disciplines can modify and adapt this assignment to their needs and contexts. We assert that iterative engagement with a reflective activity can be beneficial to any student. Identifying educational, professional, or personal experiences and discussing them as valuable learning helps prepare or enhance functioning in a career related sphere for emerging experts or for developing specialists. Students in business management, theater, sociology, or nursing can equally benefit from a critical autobiography assignment. On the one hand, portfolios include a variety of major-specific and profession-specific media products, each of which can rely on both alphabetic and multimodal means of communication or writing. For example, students in previous semesters collected essays, resumes, proposals, research reports, video presentations, infographics, and other artifacts. The activity is transferable to a wide

range of fields, majors, and specializations that rely on critical analysis of gained knowledge and systemic positioning of such experience to articulate personal and professional strengths and set goals.

A natural extension of the Critical Autobiography for a Digital World activity is an academic portfolio, which is a common method to showcase and assess students' learning either at the end of specific courses or academic programs. The difference between the Critical Autobiography as an alone standing assignment and a portfolio is in the inclusion of concrete artifacts that support and illustrate the reflective discussion. Academic portfolios in our courses provide not only a product or a collection of artifacts created to demonstrate the best student work produced but also as a learning process supporting the critical reflection of one's professional growth (Barrett 2007; Slepcevic-Zach and Stock 2018). An engagement with a portfolio provides a site for ownership of learning and authentic voices by students (Barrett 2007). The learning in the context of academic portfolios extends the impact of the autobiography assignment, especially as students formulate their goals, discuss how their achievements, artifacts, and experiences align with their professional and academic development, as well as collect, organize, produce, or transfer artifacts to the digital format.

Further, the considerations of storytelling for social impact add an extra layer to theorizing learning and its implications in the context of the Critical Autobiography for a Digital World, and academic portfolios as an extension. By composing autobiographies, organizing artifacts, and explaining their significance, students engage in an act of storytelling. Because "A story is central to human understanding—it makes life livable because, without a story, there is no identity, no self, no other" (Lewis 2011, 505), stories help represent the world and the self and make meaning of one's experiences, thus transforming individuals and communities (Ciancia, Piredda, and Venditti 2021). Digital storytelling is a common student-centered learning strategy in the humanities and social sciences, with many outcomes reported, such as affective, cognitive, identity-related, and others (Wu and Chen 2020). We emphasize the orientation of biographies (and portfolios,

too) as communicative actions, which promoted the concept of storytelling for social impact (Geneske and Hattaway 2014; Winskell and Enger 2014; Mariani and Ciancia 2023). The key idea here is that portfolios are not created for students themselves or for those assessing them in the classes. The act of storytelling empowers students to communicate their accrued learning or professional becoming aligned with specific contexts or audiences. Digital storytelling, therefore, is a way to rhetorically position academic and professional skills, accomplishments, and aspirations in order to connect to social issues and needs essential for the current moment or situation, where and when students find themselves.

To achieve the meaningful objectives of storytelling for social impact, we teach students to think about strategy, capacity, content, platforms, and evaluation of their stories (Geneske and Hattaway 2014) when they compose their Critical Autobiography (as well as the whole portfolio). The consideration of strategy focuses on how digital stories in the form of Critical Autobiography (or portfolios) can advance missions, purposes, and learning. For instance, questions such as What purpose does the sum of artifacts have? or What is there to learn and showcase? help students think about strategy. Thinking about capacity suggests reviewing and taking stock of the resources and skills needed to produce portfolios as an act of storytelling. The question about content encourages planning specific elements and details for producing compelling and motivating autobiographies. Referring to platforms enables students to consider technologies that are available or needed for curating, housing, and sharing their stories. Lastly, discussing evaluation prompts students to establish meaningful criteria to assess or mark success in their work.

References

Barrett, Helen C. 2007. "Researching Electronic Portfolios and Learner Engagement: The Reflect Initiative." *Journal of Adolescent & Adult Literacy* 50 (6): 436–49. http://www.jstor.org/stable/40015496.

Benson, Michael T., and Hal R. Boyd. 2015. "The Public University: Recalling Higher Education's Democratic Purpose." *Thought & Action* 31 (1): 69–84.

Brookfield, Stephen. 2012. *Teaching for Critical Thinking*. Jossey-Bass.

Ciancia, Mariana, Francesca Piredda, and Simona Venditti. 2021. "Shaping and Sharing Imagination: Designers and the Transformative Power of Stories." *Interactive Film & Media Journal* 1 (1): 19–40. https://doi.org/10.32920/ifmj.v1i1.1492.

Dobrin, Sidney. 2020. "How Refining Definitions of Digital Literacy Emphasizes Student Needs." *Adobe Blog*. February 10, 2020. https://blog.adobe.com/en/publish/2020/02/10/how-refining-definitions-of-digital-literacy-emphasizes-student-needs.

Gajjala, Radhika, Sue Ellen McComas, Franklin Yartey, Anca Birzescu, Heather Sloan, and Yahui Zhang. 2012. "Layered Literacies and Nuanced Identities: Placing Praxis from MOO Space to Second Life." In *Feminist Cyberspaces: Pedagogies in Transition*, edited by Sharon Collingwood, Alvina E. Quintana, and Caroline J. Smith, 297–320. Cambridge Scholars Publishing.

Geneske, Jay, and Doug Hattaway. 2014. "Digital Storytelling for Social Impact." *Stanford Social Innovation Review*. https://doi.org/10.48558/ETR1-X683.

Grant, Michael, and Marshall Smith. 2018. "Quantifying Assessment of Undergraduate Critical Thinking." *Journal of College Teaching & Learning* 15 (1): 27–38.

Lewis, Patrick J. 2011. "Storytelling as Research/Research as Storytelling." *Qualitative Inquiry* 17 (6): 505–10. https://doi.org/10.1177/1077800411409883.

Mariani, Ilaria, and Mariana Ciancia. 2023. "Design for Narrative Change: A Pedagogical Model for Interactive Digital Narratives." *International Journal of Art and Design Education* 42 (3): 384–401. https://doi.org/10.1111/jade.12468.

National Council of Teachers of English. 2019. "Definition of Literacy in a Digital Age." https://ncte.org/statement/nctes-definition-literacy-digital-age/

Nicholas, Mark C., and Miriam Raider-Roth. 2016. "A Hopeful Pedagogy to Critical Thinking." *International Journal for the Scholarship of Teaching and Learning* 10 (2): Article 3. https://doi.org/10.20429/ijsotl.2016.100203.

Slepcevic-Zach, Peter, and Michaela Stock. 2018. "ePortfolio as a Tool for Reflection and Self-Reflection." *Reflective Practice* 19 (3): 291–307. https://doi.org/10.1080/14623943.2018.1437399.

Swaak, Taylor. 2022. "Colleges Can Overestimate Their Students' Tech Savvy." *The Chronicle of Higher Education*. August 4, 2022.

Tinmaz, Hasan, Yoo-Taek Lee, Mina Fanea-Ivanovici, and Hasnan Baber. 2022. "A Systematic Review on Digital Literacy." *Smart Learning Environments* 9 (21). https://doi.org/10.1186/s40561-022-00204-y.

Winskell, Kate, and Daniel Enger. 2014. "Storytelling for Social Change." In *The Handbook of Development Communication and Social Change*, edited by Karin Gwinn Wilkins, Thomas Tufte, and Rafael Obregon. https://doi.org/10.1002/9781118505328.ch12.

Wu, Jing, and Der-Thanq Victor Chen. 2020. "A Systematic Review of Educational Digital Storytelling." *Computers & Education* 147. https://doi.org/10.1016/j.compedu.2019.103678.

Zhou, Ziquian. 2022. "Critical Thinking: Two Thesis from the Ground Up." *Journal of the Scholarship of Teaching and Learning* 22 (1): 154–71. https://doi.org/10.14434/josotl.v22i1.30983.

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