

Fall 2021

It Takes One to Know One: Authentic Learning and Multiple Literacies in a 100 Level, Technical Writing Classroom

Matthew Sterner-Neely

Follow this and additional works at: <https://scholarcommons.sc.edu/etd>



Part of the [Curriculum and Instruction Commons](#)

Recommended Citation

Sterner-Neely, M.(2021). *It Takes One to Know One: Authentic Learning and Multiple Literacies in a 100 Level, Technical Writing Classroom*. (Doctoral dissertation). Retrieved from <https://scholarcommons.sc.edu/etd/6841>

This Open Access Dissertation is brought to you by Scholar Commons. It has been accepted for inclusion in Theses and Dissertations by an authorized administrator of Scholar Commons. For more information, please contact digres@mailbox.sc.edu.

IT TAKES ONE TO KNOW ONE: AUTHENTIC LEARNING AND MULTIPLE
LITERACIES IN A 100 LEVEL, TECHNICAL WRITING CLASSROOM

by

Matthew Sterner-Neely

Associate of Arts
Pueblo Community College, 2006

Bachelor of Science
Colorado State University – Pueblo, 2008

Master of Education
Colorado State University – Pueblo, 2011

Master of Arts
Southern New Hampshire University, 2015

Submitted in Partial Fulfillment of the Requirements

For the Degree of Doctor of Education in

Curriculum and Instruction

College of Education

University of South Carolina

2021

Accepted by:

Suha Tamim, Major Professor

Leigh D’Amico, Committee Member

Jin Liu, Committee Member

James Kirylo, Committee Member

Tracey L. Weldon, Interim Vice Provost and Dean of the Graduate School

© Copyright by Matthew Sterner-Neely, 2021
All Rights Reserved.

DEDICATION

To my wife, who listened when my heart began to hurt; who found herself;
who loves without end; who thinks with intent; whose joy overflows; who
slaps my phone; who I love with purpose and intention;

To Tara, who is my beloved baby girl, whether or not she started that way;

To Emmett, my most precious builder in the family;

To my father, who taught me the value of scholarship;

To my mother, who taught me the value of creativity:

They are one and the same.

To my mom, who I adore, and who shows me every day how to give of myself;

To my dad, friendship and mentorship I will take with me wherever I go;

To Gruncle, who taught me the value of reading, children, and Title I;

To Grauntie, who taught me that I am not alone;

To Katie, whose brains, ideas, dinners, and empathy make me feel so loved;

To Les, who deals with my anxiety and insecurity with love and finesse, and who

I get to share the Greatest Gift with: husbanding-in-law;

And especially, I dedicate this dissertation to my students, former, current, and

future, with love and hope for your journey.

ACKNOWLEDGEMENTS

Thank you to my committee, Dr. James Kirylo, Dr. Jin Liu, and Dr. Leigh D'Amico. Your influences on my scholarship, my ethics, and my teaching have been profound, and I consider myself to be incredibly lucky to have had you in my academic life.

To my first teachers, my mama and my daddy, thank you for dancing in the silly St. Patrick's Day outfits; thank you for not being pretentious; I hope I have made you both proud. I will see you someday.

A sincere and heartfelt thank you to my favorite teacher, Dr. Jenny Piazza. I am who I am as a teacher because of you. Thank you also to Dr. Margie Massey, who guided me to be the best graduate student possible. And thank you to Dr. Jeff Piquette. Dr. Jeff, from that first day in Phys/Chem 150, I was captivated, and because you shared with me Holy Mysteries, I will never end my search for God.

To Liz: I knew we'd be friends from that first day with Pokémon Go. What I didn't know is that I would be so lucky to have such an incredible colleague along with my friend. I couldn't have done this without you!

To my beloved friends and colleagues at PCC, you have been so very supportive, and I am deeply grateful.

Thank you, especially, to my wife, Tiffany, who shows me what it means to love. You reflect Divinity, baby. I am going to have more time. ☺ Likewise, thank you to my children, Tara and Emmett, who I love with all of my heart. Daddy will love you until the

end of time. Thank you for the long nights cuddling me so I could finish homework. No matter what: remember that *you are loved*. Be good; do well; do the best at being good. Include yourself in the people you are good to.

And to Dr. Suha Tamim, you have been the most encouraging, demanding, and exacting mentor I have ever had. You have been honest in telling me when my pages are fluff, you have pushed me to be better when you know I can be, and you have trusted me to make decisions about my scholarship that are courageous and candid. Once, on my 63rd draft of chapter one, you told me that the topic within this dissertation was what I should pursue because you could tell that I was more passionate about that than anything else so far. I was *so proud* that you said I was passionate. This has been one of the toughest things I have done, and you have mentored me through the whole thing. I am forever grateful.

ABSTRACT

At Ciudad Community College (pseudonym) and across the Colorado Community College System, the course competencies for Technical Writing I (ENG 131) have more than tripled to accommodate ENG 131 as a guaranteed transfer course equivalent to ENG 121: English Composition I. Unfortunately, this has had the effect of increasing the workload for students, and the increase in competencies plus the struggle that students already had in meeting course competencies demanded the need for an intervention. The purpose of this convergent, mixed methods, action research study was to examine the effects of authentic learning on the competency levels of technical writing and the meaningfulness of authentic learning of vocational education students in a first semester, technical writing classroom. It is informed by theories of multiple literacies and social constructivism, and four aspects of authentic learning were explored, including student choice, problem-solving, inquiry, and group collaboration. I found that authentic learning does indeed have a positive effect on the technical writing of students, and although some students did not enjoy the authentic learning experience, each student found it meaningful. Authentic learning did not work perfectly, however, and I found that scaffolding is necessary to address issues with students differentiating between inquiry and student choice, and to assist them with problem-solving as a systematic process. I also found that reflections are key in determining the meaningfulness of student experiences, and I discovered that it will be prudent to address specific struggles with

online discussion boards. Along with the action plan that stems from an action research cycle, implications for classroom practice and future research are discussed.

Keywords: authentic learning, multiple literacies, mixed-methods, action research, technical writing, post-secondary

TABLE OF CONTENTS

Dedication	iii
Acknowledgements	iv
Abstract	v
List of Tables	viii
List of Figures	ix
List of Symbols	x
List of Abbreviations	xi
Chapter 1: Introduction	1
Chapter 2: Literature Review	32
Chapter 3: Methodology	59
Chapter 4: Findings	83
Chapter 5: Implications and Recommendations	114
References	130
Appendix A: Old ENG 131 Competencies	145
Appendix B: New ENG 131 Competencies	146
Appendix C: Consent Instructions and Forms	149
Appendix D: Reflection Prompts	152
Appendix E: Semi-Structured Interview	156
Appendix F: Workplace Writing Rubric	158
Appendix G: Observation of Discussion Form	160

Appendix H: Lesson Plans.....	162
Appendix I: Proposal	164
Appendix J: Finding Technical Documents.....	167
Appendix K: Peer Testing (Discussion Board).....	169
Appendix L: Catchphrase	170
Appendix M: Final Game Manual Instructions	172

LIST OF TABLES

Table 1.1 Guaranteed Transfer English Courses	4
Table 3.1 Research Question and Data Collection Tool Alignment.....	76
Table 4.1 Student Raw Scores	87
Table 5.1 Action Plan	121
Table D.1 Reflection Rubric	155
Table F.1 Workplace Writing Rubric	158
Table G.1 Observation Form	168

LIST OF FIGURES

Figure 1.1 Deficit Narratives versus Multiple Literacy Counter-Narratives	12
Figure 3.1 Making Choices Video Screenshot	68
Figure 3.2 Inquiry Video Screenshot.....	68
Figure 3.3 Group Work Video Screenshot	69
Figure 3.4 Problem-Solving.....	70
Figure 4.1 Carrie’s Game Instructions.....	88
Figure 4.2 Carri’s Game Board.....	89
Figure 4.3 Ephram’s Introduction.....	90
Figure 4.4 Tighe’s Game Guide.....	93
Figure 4.5 Problem-Solving Lecture Screenshot.....	99
Figure 4.6 Inquiry Lecture Screenshot.....	103

CHAPTER 1

INTRODUCTION

On the east side of Ciudad, Colorado (pseudonym), sits a neighborhood called Eastwood Heights, though if someone actually used that term, they would definitely stick out. Instead, Ciudadans refer to the neighborhood, nestled against the edges of farms staffed by migrant workers, as the “Dogpatch.” Only one road runs in and out of the Dogpatch; it is not the kind of place one can accidentally get stuck in. Near the entrance to the neighborhood sits a school, named after Eva Baca, whose “official title was school principal, but her true role expanded to community champion for all of Ciudad...her work helped to improve the streets, parks, and safety of the Eastwood Heights neighborhood” (South). At the time of Baca, the neighborhood was a situated example of how community advocates can come together and make their sphere of influence better. As a pre-service teacher, I spent a lot of time in this school – mostly with the kindergarten classes. The teachers were every bit the legacy of Eva Baca. The curriculum, however, while related to efforts to improve reading scores, was mind-numbingly dull. The “Colorado Reading First” program, situated firmly in what students *lack*, required that kindergarteners sit for 1.5 hours each day, mostly without breaks, and recite phonemic awareness drills.

In the middle of downtown Ciudad sits another school – this one the first charter school in Colorado. Since that title in 1993, Link Charter Academy (LCA – pseudonym) has performed incredibly well, with most of the students scoring proficient or above on

state-mandated exams. I taught reading, writing, and science for several years at LCA, and I had a great time with my students. How proud they were (are) about their successes in standardized testing. How proud they were (are) that they use a first come, first served policy of admission to the school. How proud they were (are) of being centrally located in Ciudad. How proud they were (are) of their successes in Science Olympiad and History Day. And how much do they do precisely what Milner (2013) warns against: they operate with no free and reduced lunch – not that they need to – in the 2009-2010 school year, three children out of 272 qualified for free or reduced lunch, but in the surrounding district, each child receives a free breakfast and free lunch – Baca Elementary included. LCA operates with no busses. They operate as a meritocracy, saying, “well, we are open to *all*, of course,” ignoring the fact that Ciudad is a city in which the majority of the population is LatinX, and the population of the school is not. They ignore that children of doctors and businessmen and lawyers are the majority of the students. They ignore their commitment to the community because they ignore the systemic factors that limit a student’s ability to even attend the school.

Until I taught at LCA, I would have thought that these ethnic, socioeconomic, and ability-level disparities would be incredibly apparent to anyone willing to see what is happening. But these disparities are subtle and rooted in systemic ideologies that assume that constructs like “first-come, first-served” means that those who are sufficiently motivated will make a better life for their children, as if broken-down cars and single parents and exceptional needs don’t exist if one just works hard enough, and if one isn’t successful, then one hasn’t worked hard enough. Unfortunately, this deficit thinking does not just exist at elementary and middle schools in Ciudad, Colorado. It also exists at the

community college level, and today, as an English faculty member, I have been a propagator of these disparities. Focusing on what students *lacked* when they entered my classroom, I have tended to give them instruction rather than facilitate their learning.

Still, I have attempted to operate ethically in my courses. For as long as I have taught Technical Writing I (ENG 131 in the Colorado Community College System) at Ciudad Community College (CCC, pseudonym), a small, urban college with about 7000 students, I have struggled to make the course relevant, interesting, and engaging to my students; in fact, when I inherited the curriculum for this class, the writing included lessons about how to literally cut (with scissors), paste, and copy diagrams into typed documents. The content was similarly outdated, not addressing any type of professional, digital communication such as business-oriented social media content. Students have, likewise, struggled with meeting course competencies, and though I have tried a number of curricular and instructional approaches, students generally do not meet a level of proficiency that is consistent with comparable courses.

Complicating the proficiency issue, in mid 2019, this class became much more complex and much more important to stakeholders, as it was included in the set of Guaranteed Transfer (GT) courses that could follow a student to almost any college or university in the state. This course is now meant to be equivalent to a first semester, composition course, English Composition I (ENG 121), and the largest consequence of this move was that students from ENG 121 *or* ENG 131 can now enter into a *second* semester, composition course, which can be seen in Table 1.1.

Table 1.1 *Guaranteed Transfer English Courses*

CDHE GT-Pathways Code	Before Including ENG 131 in GT-Pathways	After Including ENG 131 in GT-Pathways
CO1	ENG 121	ENG 121 <i>OR</i> ENG 131
CO2	ENG 122	ENG 122

Across Colorado, any 100-level, first semester writing course is coded by the Colorado Department of Higher Education (CDHE) as a “CO1” course (GT-CO1 Intro. Writing Course, 2018). In the Colorado Community College System (CCCS),

- ENG 121 is a 100-level, first semester composition course: English Composition I
- ENG 122 is a 100-level, second semester composition course English Composition II
- ENG 131 is a 100-level, first semester technical writing course: Technical Writing I.

Outside the CCCS – that is, in every other public institution of higher education, CO1 courses are titled as “Composition I,” “Academic Writing,” or something similar. In fact, the CCCS is the only institution that allows for a technical writing course to be included as a CO1 course, able to be transferred in equal status to a first semester, composition course. In theory, this levels the playing field for students, but in practice, students in ENG 131 must learn twice the curriculum – they must learn academic *and* technical writing, and this furthers the perception that students in ENG 131 are deficit in their skills.

Consequently, the curriculum for the course has gone through a number of iterations at my own college, and I have tried countless projects and units to attempt to

include what I thought was the best use of my students' time, while also offering them opportunities to get good grades in the course. One such assignment involved asking students to complete an instruction report, and I used LEGO models as the instructional piece of the direct instruction for this unit. Students built LEGO models, wrote instructions for those models, and then tested those instructions during peer reviews. This did not help, much, in terms of competency and meaning, though it was interesting to many students, and students did improve their instructional writing, though not by much. Upon the completion of an action research study investigated by myself and the Director of Assessment at CCC (Sterner-Neely & Medendorp, 2019), I discovered a pretty major flaw in my thinking: I trusted students in my other courses (creative writing, children's literature, and introduction to literature) to direct their learning, but in ENG 131, I was not acting as if I trusted my students to use literacies that already existed. Perceived as deficit, like the children in the Dogpatch, I did not afford my students the same learning opportunities that I afforded those students who I perceived as more skilled.

Recently, however, one student was headed out of town, and I had about five minutes after class to communicate the assignment criteria. I instructed Chris (pseudonym), a future small business owner, to develop instructions for a process that he was already good at that in his workplace. In order to complete this task, I asked him to look at the resources on our Learning Management System (LMS) and in the textbook, and to get me a set of instructions for completing a process. Any process. I had little confidence in Chris's ability to complete this process at a proficient level; like the vast majority of my students in ENG 131, Chris was a vocational education student, and his interests remained not in the classroom, but in the context of his business and his hobbies

– literacies that I did not, at the time, value as relevant to the writing classroom.

Therefore, I thought that, without direct instruction from me, he would need assistance in writing his instructions clearly and concisely, and assistance in formatting his instructions so that they were relevant to a potential reader.

However, when Chris returned, he handed me an instructional report that was far better than any I received from students in the past, and that was much better than his prior assignments. He worked at a local medical marijuana (MMJ) shop, and he developed a set of instructions for rolling and smoking a blunt, and he accompanied the report with pictures, captions, and well-cited sources, even though this last piece was not part of the assignment. He had already passed the report out to several customers, and he had received feedback, which he then integrated into the report. The final product became a brochure that could easily be passed out in his MMJ shop. The writing product was incredible, and it appeared to me that this was because of three things: being in charge of his own learning, constructing the knowledge necessary to develop the report, and solving a relevant workplace problem. This praxis, a continual process of “reflection and action,” (Freire, 1970, p. 182), is affirmed by Freire, in that the “cognitive dimensions of the literacy process must include the relationships with men with their world” (p. 181), and that the adult literacy process must “engage learners in ... constant problematization” (p. 184). Furthermore, the writing pieces he produced for the rest of the term were of much better quality than earlier in the term, which addressed the issue with respect to the transfer of learning. The issues present in previous iterations of this assignment did not exist in Chris’s subsequent work.

Chris was interested in the project, and he was attentive to the steps needed to accomplish his instruction writing; the project became relevant to him through being situated in his workplace; his confidence developed “through feedback that highlight[ed] the relationship” (Mohamed et al, 2016, p. 139) between Chris’s efforts and his results; and finally, Chris was ultimately satisfied with his final product because he was immediately able to use the product in his workplace. For Chris, this project was authentic. Rule (2006) defines “authentic learning” as those activities that “mimic real-world situations, tak[ing] place in meaningful situations that are extensions of the learner's world, and [in which] the learner is at the center of instruction” (p. 2). Chris’s success in the course prompted me to consider the literacies that students bring to the classroom that are *not* inherently connected to writing instruction.

Problem of Practice

As a department, the three faculty members who regularly teach ENG 131, two of whom have spent a significant amount of time teaching writing in K-12 and post-secondary settings and the third, the Director of Assessment at Ciudad Community College, have observed that as it stands, ENG 131 does not provide the level of authentic learning necessary for students to become competent at business communications and report writing given students’ diverse learning needs. Students in most vocational education programs – especially those that pursue Associate of Applied Science degrees (AAS) or Bachelor of Applied Science degrees (BAS) – must take ENG 131 as their single writing course. Our classes are most often populated with welding, machining, medical assistant, interior design, early childhood education, and automotive students. For most of the time that I have taught ENG 131, I have taught to course competencies

that were fairly simple (see Appendix A). These competencies have been relatively consistent with the needs business and industry leaders throughout my community; leaders in the community communicate that they look for solid writing skills, even in those careers that are not necessarily inherently about writing. Students need to be able to write clear and concise reports and succinct communications including memos, letters, and social media posts, to name a few, but the writing competency among my students has not been consistently at a proficient level.

As of the spring of 2019, the number of competencies (analogous to standards in K-12) for English 131 – Technical Writing I (ENG 131) has increased almost three-fold, and after a curriculum redesign to attempt to accommodate these new competencies (Sternier-Neely & Medendorp, 2019), in which we addressed what we thought was a lack of interest, my colleagues and I continue to find that students have not, overall, been proficient at these new competencies. While it is possible that this is due to students being uninterested in more traditional academic writing, it is also possible that students simply aren't prepared to take ENG 131 – many come to the class with very little writing experiences, and almost no positive writing experiences. This is especially complex because successful writing in unfamiliar contexts (i.e. writing transferability) counts on using “prior knowledge for new purposes, [which] represent[s] the very definition of learning transfer” (Stinnett, 2019, p. 357). Because they simply don't come to class with depth and breadth of prior writing experiences, it has become exceedingly rare within the *current* curricular framework for them to be proficient in terms of meeting course competencies. This thinking, based in what students *lack* (i.e., deficit thinking), is further explored in chapter 2, but in short, we have the obligation as teachers and community

members to recognize our deficit thinking, and to refuse to operate in that capacity (Gorski, 2012). We have an obligation to function neither as Baca Elementary, scripting our curriculum, nor as Link, meeting the needs of students who will be successful regardless of the curriculum and instruction, and because of their socioeconomic circumstances. I see that this is a problem at the micro level with respect to curriculum and instruction, and I see disparities that manifest in a major way in English education: those who are relatively privileged, either ethnically, socioeconomically, or through ability level take composition courses, and then they transfer to the university. Those who are less privileged are piped into vocational education courses, and offered a course in which they must learn technical writing *and* academic writing: English 131 – Technical Writing I. Technical Writing I (ENG 131) is required of most vocational education students in the Colorado Community College System (CCCS), from Automotive Technology to Early Childhood Education, and from Welding and Culinary Arts. Although each of the 13 community colleges that make up the CCCS are relatively autonomous, we develop course-level Student Learning Objectives (SLOs) together at a once-per-year discipline meeting in late September. Just as ECE faculty determine what the correct scope and sequence must be present in an Infant and Toddler Development class, so do the literature (LIT) faculty determine what SLOs are right for them, and ENG for them. Because we are a small, urban community college in a relatively small city, many of the nine English, Literature, and Communication must teach multiple preps under multiple prefixes. I regularly teach ENG 131, LIT 115 (Intro to Literature), and 255 (Children’s Literature), and ENG 221 (Creative Writing I). Until quite recently, I have been the only faculty member teaching ENG 131, but last year, the course

underwent a complete restructuring so that it is now equal in terms of transferability with ENG 121, our English Composition I course, and today, three full-time faculty members teach ENG 131, along with a variable number of part-time faculty. In addition to the increase in student population, the competencies jumped three-fold, so that now, ENG 131 must consist of technical *and* academic writing skills. I have noticed that a few characteristics almost always pair with my ENG 131 students: they are *already* good at problem solving and working together, and in terms of creativity in the pursuit of personal interests, one only has to walk around the CCC campus to see the influence of the industrial art made by welding and machining students.

Intervention for the Problem of Practice

The intervention for the described Problem of Practice was to create a set of authentic learning activities, inclusive of solving real-world problems, conducting open-ended inquiry, participating in social learning, and involving student choice (Rule, 2006), in order to develop the competency levels of student workplace writing. In context, workplace writing includes being able to write descriptive and instructional writing, letters and other business communications, proposals, and integrated documents, and the studied unit will include developing a proposal to address various stakeholders about a game that they design as well as the game manual itself. This game will include all of the above types of technical writing, and it is centered in the design of a game, an element that we discovered in our last study on curriculum development was an effective and meaningful way to theme the projects (Sterner-Neely & Medendorp, 2019). At this point in the term, students should be able to integrate what they have learned into a cohesive whole. As they take on the role of “game designers,” they must make choices about the

game that exists at about the complexity level of Monopoly or an iPhone application, or even a table-top role-playing adventure. Students have a great deal of choice, as that is one of the facets of authentic learning. This intervention will attempt to address the proficiency level of students as they engage in authentic learning activities over two units of study in ENG 131, one to introduce them to Authentic Learning concepts, and the other to practice and complete Authentic Learning activities to write a final game manual, inclusive of both academic and technical writing, as well as the meaningfulness of those authentic learning activities.

Admittedly, the breakout from deficit thinking to authentic learning is a difficult one. Figure 1.1 is based on feedback loops as explicated in Senge, et al (2012); it explains the reinforcing deficit narrative (the problem of practice) and the counter narrative, situated in students' multiple literacies and put into practice through authentic learning (the intervention).

For learning to be “meaningful,” it is clear that students must connect that learning to something else in their lives besides the in-class material – what Khalil and Elkhider (2016) call “deep learning” (p. 147). Coffey et al (2018) describe meaningfulness in the context of “meaningful engagement”: the “consistent, thoughtful consideration of the life and learning experiences of students, as well as the norms and expectations of conduct...of the educational institution” (pp. 15-16), that is, student competency. I have often attempted integrating “meaning” with the inclusion of elements of popular culture within my composition classroom (Sterner-Neely, 2016; 2017) and within my children’s literature classroom (2018a; 2018b) as a proposed solution to the issue of a lack of competency in my classrooms. It was not perfect, of course, but it was

something to begin with. Still, for many of my students, the inclusion of popular culture was simply not personally meaningful enough. It was engaging, certainly, but only to

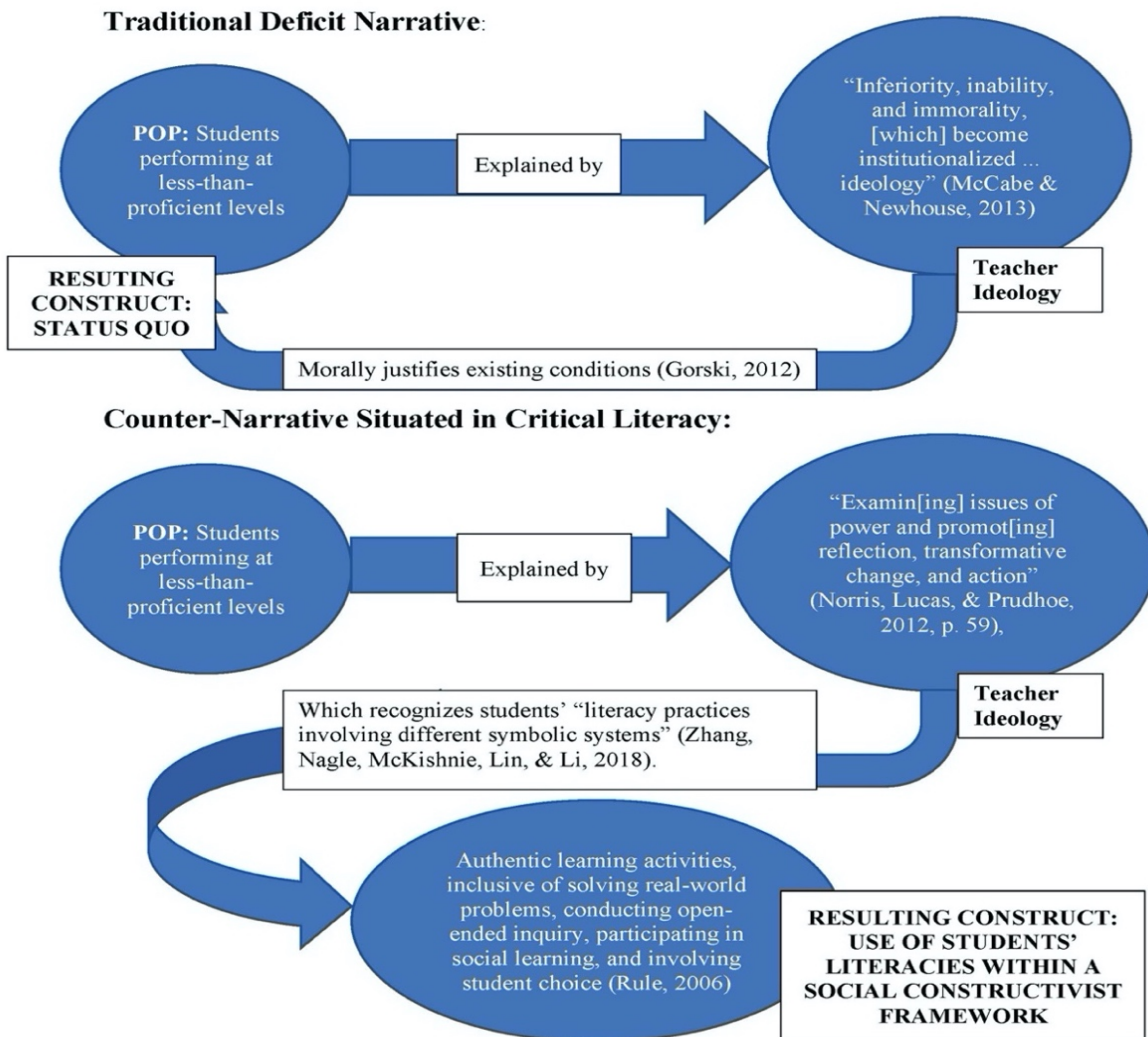


Figure 1.1 *Deficit Narratives versus Multiple Literacy Counter-Narratives*

those students who already had an interest in the inclusion of popular culture. Many of my students still struggled with gleaning meaning from the class. Authentic learning, as expressed by Rule (2006), addresses this difficulty with the inclusion of real-world problem-solving, open-ended inquiry, student choice, and social learning.

Additionally, and specific to the writing classroom, the plethora of different approaches to writing pedagogy is important to consider. Writing as a specific process rather than a product was first posited by Murray (1972), and today, Shafer (2013) notes that writing is “less likely to be about learning pre-fabricated, officially sanctioned formats, and more likely to be about fashioning new designs” (p. 317). These new designs are inherently connected to the ways in which the process of writing is collaborative in nature (Anderson & Kraushaar, 2017; Harasim, 2012). Though this combination of the construction of new knowledge and the collaborative nature of the writing process is key in understanding how students can learn how to write, it is also related to a “constructivist epistemology...that [states that] knowledge is constructed through our interactions with one another, the community and the environment, and that knowledge is not something absolute” (Harasim, 2012, p. 12), all of which are embedded in authentic learning. In my experience with methods of teaching English – inclusive of the writing process, the research processes, and the reading process – writing is almost always taught as an individual activity. In socially constructing solutions to a situated problem, students must abandon individual learning and depend on each other for constructing competency and meaning. This particular study built on what we know about the use of problem solving and gameplay, especially, as well as group work, student inquiry, and gameplay based on our last study (Sternier-Neely, 2019):

While only marginally important for the research in this study, it is important to note that Huang, Liao et al. (2014) found that the combination of game play and cooperative learning are effective for student learning. Our intent is to integrate what we know about design game-based learning experiences in the curriculum for English 131: to

“offer a high potential to foster and support learning in educational...settings (Belloti, et al, 2014, p. 1). In fact, “with properly-designed educational games, the educational system might be able to provide ‘designed’ experiences that are semiotically meaningful in that [students] are positioned in personally and socially important ways at the same time they must understand particular knowledge in order to succeed.” (Barab, et al, 2012). The game, therefore, can be a meaningful experience.

The specific competencies addressed in this intervention and the assignment are as follows (See Appendix B):

ENG 131 Competency One. Create documents that respond to audience, purpose, context, formatting, and technical genres for a variety of workplace situations.

Written Communication Competency Three.

Develop Critical and Creative Thinking.

Identify context.

Present a position.

Establish a conclusion indicated by the context that expresses a personal interpretation.

Assignment. For your final project in this class, you will develop an idea for a new game in a genre of your choosing (board, card, mobile, roleplaying, etc.) with the end goal of pitching the idea to a potential investor in hopes of securing funding to have your game produced, marketed, and sold. You will use the four elements of authentic learning as practiced in the previous lesson, including inquiry, group work, student choice, and problem solving (See Appendix H: Lesson Plans).

Purpose of Study

This convergent, mixed methods, action research study examined the effects of authentic learning on the competency levels of technical writing and the meaningfulness of authentic learning of vocational education students in a first semester, technical writing classroom. A convergent design uses “qualitative and quantitative data collected in parallel, analyzed separately, and then merged” (Creswell & Creswell, 2018, p. 127). In this study, the competency levels of the workplace writing of students as expressed in a course-level rubric were analyzed to test the efficacy of authentic learning as expressed by Rule (2006), including solving real-world problems, conducting open-ended inquiry, participating in social learning, and involving student choice. Observations of student discussion boards, students’ reflective writing, and focus-group interviews were also gathered to gain an understanding of the perceptions of student capabilities in the ENG 131 classroom during authentic learning experiences. The reason for collecting both quantitative and qualitative data is to gather a complete understanding the efficacy of authentic learning as it contributes to students’ construction of knowledge in this context. This understanding informed the decision-making processes of curriculum designers of ENG 131 as we sought to meet the needs of students in certificate programs, Associate of Applied Science programs, and nascent Bachelor of Applied Science (BAS) programs at Ciudad Community College.

Rationale

Together, the combination of the lack of background writing knowledge and the advent of the course as a GT-Pathways course has resulted in a complicated and constantly shifting pedagogical problem for educators of technical writing across the

community college system and across Colorado. The time is *now* to act on this study.

With recent developments that have allowed CCC to pilot BAS programs, solid technical writing skills are needed now more than ever. Ciudad is a blue-collar town, and we pride ourselves on educating members of the community for jobs in the steel industry, clean energy production, and health care, to name a few of the most pervasive industries in Ciudad, Colorado. I have raised concerns about ENG 131 for years, but since the course has become a GT pathways course, more faculty members are teaching the course to meet increased demand, and they have had the same issues I have had. We *must* do something about the levels of competency and meaning in the course, and we must connect students' previous experiences to workplace writing to meet the requests and demands of industry partners. To do otherwise is to fail not only our students, but the city of Ciudad as well.

Research Questions

1. After authentic learning experiences, what technical writing competency levels were attained by vocational education students in a first semester, technical writing classroom?
2. How do students perceive the authentic learning experience in a first semester, technical writing classroom?
 - a. How do students direct their learning in the authentic learning experience?
 - b. How do students interact as a group during the authentic learning experience?
 - c. How do students approach the problem-solving aspect of the authentic learning experience?

Review of Relevant Literature

It is a popular and pervasive attitude about education – especially education that exists in particularly marginalizing settings and with traditionally marginalized groups, inclusive of students who traditionally take ENG 131 – that holding teachers accountable, focusing on lifting students out of poverty, and situating the blame for poor achievement among those who perform at such levels will motivate those who are in difficult situations to emerge from achievement gaps. Gorski (2012) describes this type of deficit thinking as having a few major recognizable facets:

This thinking tends to morally justify existing social conditions;

This thinking diverts attention away from systemic conditions that exist;

This thinking discusses poverty in the context of a lack of achievement.

Such theorists as Ruby Payne (2013) subscribe to this thinking, desiring to help students create their “future stories,” and this thinking is certainly not limited to Payne. A prevailing misunderstanding of under-achievement is simply that schools – and schools alone – can help. With the possible reemergence (and at the very least, the lack of oversight) of for-profit colleges under the Trump administration and Secretary of Education Betsy DeVos, the tendency to leave the problems of poverty, racial injustice, and inequitable educational praxis are left to those who suffer most. Long, Souto-Manning, and Vasquez (2016) edit *Courageous Leadership in Early Childhood Education: Taking a Stand for Social Justice*, a collection of profiles of 13 early childhood administrators, educators who tend to be “lovingly subversive” (Lopez-Robertson et al 2016, p. 103) in their method of practically approaching the problems of equity in Early Childhood Education (ECE). These administrators not only flip the

underlying philosophical constructs of theorists like Payne (2013) to instead use a counter-narrative approach to understand students' *current* stories as empowering; they also provide current educators, pre-service educators, and teacher-educators with tools to counter the *praxis* that stems from that deficit ideology. They replace that praxis with ideals and tools to “disrupt and reject deficit framing of...communities of Color” (Haddix, 2019, p. 29). This construct – the use of students' literacies – lies at the heart of the intervention for this problem of practice. Additionally, the anecdote at the beginning of the chapter seems to confirm that engaging students in their own learning through asking them to be responsible for their own learning, for problem-solving, and for constructing knowledge through inquiry results in student products that are complex, nuanced, and meaningful.

Positionality

My experiences as an elementary teacher at under-performing schools, a middle school teacher at a high-performing school, and a composition *and* technical writing college teacher have afforded me the opportunity to see across some fairly enormous divides. I began my career as an educator in the elementary classroom, and I have observed that at almost every level in education, authentic learning as a way to access students' literacies is an important, if not vital, facet of learning, and this is supported by the extant literature (Hynes, 2019; Nestor, & Moser, 2018; Roskos, & Christie, 2011).

When I began teaching at the college level, I pursued a research agenda related to my teaching interests, but these did *not* include the use of *authentic* learning at the time. It wasn't until I included the use of LEGO® for kinesthetic modeling (Sterner-Neely, 2016) for source integration and the use of the *Potterverse*, i.e. the *Harry Potter* books,

for building communities of learners (Sternier-Neely, 2017) that I discovered that the use of language, context, and cultures that students already knew and understood was useful at all levels. When I encourage my students to use these literacies and they break away from the lesson plan, interesting things happen. In particular, I have observed that authenticity works with respect to students who identify with groups different than I identify with. I am a white, mostly male-presenting (though identifying as genderqueer), biologically intersex, liberal Christian, and each of these identities is crucial in my role as “teacher.” These are some of my identities, and along with “writer,” dancer,” “parent,” and “partner,” I approach the classroom, seeking to listen and to respond to my students’ needs.

As a social reconstructionist and a social constructivist, I see the inherent political nature of the classroom as well as the opportunity that diversity and the opportunity to listen to identities unlike mine brings to the classroom. More than anything, I want to empower my students with the tools to enact change that leads to greater critical consciousness: Freire’s (1970) “conscientização.” I recognize that my position of privilege as “teacher” and as “white male” can, almost at the outset, place me and my students in an “outsider-insider” (Herr & Anderson, 2015, p. 40) relationship that demands an almost immediate invitation on my part to participate in the development of the classroom culture.

Herr and Anderson (2015) discuss the outsider-insider relationship in an action research study, and at the outset, this is certainly what I must be cognizant of within the classroom. As an extension of these issues, I often had students enter my composition classes at PCC. In fact, as of the Spring of 2020, I still encounter students who I taught at

LCA, and my former LCA students had never really had to struggle to get through anything. I often heard the same story – over and over – high school was a breeze, but fairly boring.

In my technical writing classes, however, I have seen enormous disparities. I am very familiar with the economic disparities within my town, having lived in the midst of them as a college student, and I am also aware of the enormous divide between those who *do not* have money and those who *do* have money. This is one way in which I think that the authentic learning approach can work in the classroom. Being authentic – and authenticity in general – has been life-changing. It is not just in this study that being explicit about my positionality is important – it is in my classroom. This has allowed me to develop a sense of critical literacy, a viewpoint that “encourages readers to question, explore, or challenge the power relationships that exist between authors and readers [and] examines issues of power and promotes reflection, transformative change, and action.” (Norris et al., 2012, p. 59). In the case of this study, critical literacy is used as the framework for my own change in viewpoint from one that values deficit thinking to a view that examines the systemic issues present that contribute to a student’s inside-the-class proficiency in literacy, and that uses that viewpoint to change the curriculum and instruction to capture and value student literacies. This has led me to value students’ multiple literacies, which are those “literacy practices involving different symbolic systems (i.e. multimodal literacies) ...[and] new forms of literacy that are responses to rapid technological changes and the new global order” (Zhang et al, 2018). This is not done blindly, however. Rather the use of multiple literacies “acknowledges that differences exist and should be examined critically. This is where critical literacy comes

into play. On the one hand, critical literacy recognizes that literacy is situated in social practices and varies from culture to culture. On the other hand, it does not take each culture's literate practices for granted but investigates them critically" (Lee, 2016, p. 41).

Within the study, it will be important to facilitate competency and meaningfulness in the classroom through active problem solving, inquiry, and student-led social learning – components of authentic learning. A natural byproduct of this is that “oppressed” and “oppressors” (Freire, 1970) work together, and the Freire’s banking concept is replaced by a process that uses democracy as the driving force for social change and consciousness raising. Collectively, this addresses the types of issues present at LCA as well as my own tendencies to disregard the privileged. I do *not* seek to meet the needs of *all* my students; rather, I seek to meet the needs of *each* of my students, and in doing so, facilitate learning through authenticity rather than to marginalize students who struggling to link competency and meaning.

Research Design

This study used an action research approach to a convergent mixed methods design, in which the qualitative question and the three sub-questions are addressed at the same time as the quantitative question in order to “see if the findings confirm or disconfirm each other” (Creswell & Creswell, 2018, p. 217). I used a one-shot case study, as described by Creswell and Creswell (2018). Further discussion of this design can be found in chapter 3. Additionally, I used triangulated data sources in a qualitative framework. Further discussion can also be found in chapter 3.

Action Research

Done “*by* or *with* insiders to...a community, but never *to* or *on* them” (Herr & Anderson, 2015, p. 3, emphasis in original), action research is inherently critical in nature (Kemmis & McTaggart, 2000). Additionally, action research is meant to solve a problem (Merriam & Tisdell, 2016), and in the context of this study, the problem that this action research attempts to solve is the lack of student engagement in my classroom not only at the beginning of the semester, but also sustained throughout the semester. As teacher-researchers in the English department, each of us has committed to continually improving our individual and collective practices, and an action research approach can facilitate this continuous improvement. In fact, as action research study uses an “ongoing cycle of plan, act, observe, reflect” (Merriam & Tisdell, 2016, p. 235), so too does the English department plan our goals in the fall, act on those goals, observe the results, and reflect at the end of the year.

Convergent Mixed Methods

In order to gather a holistic understating of student learning, a convergent mixed methods design as explicated by Creswell and Creswell (2018) was developed. They explain that data is gathered and analyzed separately, and then merged together to access that holistic understanding. The research questions in this study imply a quantitative and qualitative framework, respectively, though a thorough framework for the intervention, situated in social constructivism, explains why the data must be merged.

Learning takes place in Vygotsky’s Zone of Proximal Development (ZPD)—the environmental “place” in which learning happens, whereas knowledge exists in what Tewksbury, et al. (2014) call the Zone of *Actual* Development (ZAD). They asserted,

then, that learning “may be defined as an expansion of the ZPD into the ZAD” (p. 35). Furthermore, Hung (2014) contended that “human beings make [a] place of their own and thereby create meanings” (p. 1140). Vygotsky's ZPD is the "place" where learning happens and meaning is made at this place; in fact, "individual...activities make the place meaningful...thus the learner is making the place and made by the place...the process of learning is the course of being with/in but without being bound to the place" (Hung, 2014, pp. 1140-1141). This complex, inter-dependent relationship between learner and ZPD is problematic, as one cannot have one without the other. It is therefore the quantitative proficiency levels *and* the qualitative explanation for students' experiences in authentic learning that combine to offer a holistic understanding of the authentic learning experience. Neither meaning by itself nor competency by itself implies learning; it is the intersection of the two that exemplify a student's learned and constructed experiences.

Participants

The target population was all students in first-semester, freshman technical writing classes across the Colorado Community College System. The accessible population is all students who take first-semester, freshman composition courses at Ciudad Community College (CCC). To conduct the study, I took a convenience sample (Etikan et al, 2015): the single section of a first semester, freshman technical writing class at CCC (English 131) in the summer of 2021. The sample size was seven students. It should be noted that due to the COVID-19 pandemic, another instructor was the primary instructor for this course. I participated in the course, but I was not the instructor of record.

From this sample, I observed students' discussion boards and examined student reflections and semi-structured interviews. The artifacts and the themes from the observations, reflections, and interviews were woven together to form a cohesive narrative about the class throughout each cycle of the study in order to understand students' perceptions about components of authentic learning as defined by Rule (2006). Additionally, the data from the scores on the rubrics for the workplace writing were analyzed in order to determine if authentic learning does affect student competency in workplace writing.

Data Collection Methods

Qualitative data was primarily collected by myself (Creswell & Creswell, 2018; Merriam & Tisdell, 2016) and the instructor of record for ENG 131. Following approval from the system level Institutional Review Board and selection of the specific classes that were studied, consent forms will be gathered on the first day of the term and stored on a flash drive in digital form, and in a locked filing cabinet in my office. After initial team building and group activities online, and after some direct instruction with respect to how to find resources needed for assignments, students were presented with the beginning of the unit that this study analyzed. The study consisted of two phases: in phase one, students had the opportunity to practice, collectively, the skills and documents of authentic learning that they will complete in phase two. In phase two, students individually wrote a final game manual with the opportunity to use each of the elements of authentic learning.

Qualitative data came from student reflections, observations of discussion boards, and possible semi-structured interviews in order to gather data necessary to answer

research question two (Creswell & Creswell, 2018; Merriam & Tisdell, 2016). I interviewed the instructor of record. Quantitative data was collected at the end of the unit through examining scores on already-established rubrics that guide the assessment of student competencies in order to answer research question one. These rubrics were aligned with course competencies at the course level, department level, and institutional level and are based on the American Association of Colleges and Universities' Value-Added rubrics. Evidence of proficiency with respect to the course-level competencies was examined, and as these competencies have been mapped to department and institutional-level Student Learning Objectives (SLOs), evidence of proficiency in the course-level competencies implies proficiency in department and institutional SLOs. Quantitative data was collected at the described point above, and subsequently described using descriptive statistics, including mean for each category of the rubric and for each student and the class as a whole.

Qualitative data was analyzed through a dual cycle of coding, including in vivo coding in the first cycle, which was completed directly after data collection. In the second cycle of coding, pattern coding was used to determine categories. Finally, code weaving and headings and subheadings was used to focus the codes, categories, and themes (Saldaña, 2009). The analysis was primarily completed using Delve coding software, which affirms the use of coding as explicated by Saldaña (2009).

The qualitative and quantitative data was interpreted together to determining the efficacy of authentic learning in a technical writing course, and ultimately, to develop propositions applicable to this study that can guide the curriculum development team in future terms. Further and detailed discussion of coding procedures are in chapter three.

Limitations

It is prudent to admit that this study only applies to a single unit within ENG 131, and that, in a larger context, seeking the prior knowledge of students will change from term to term and even from student to student. This study recognizes this limitation as well as the limits of my own abilities to offer choice to my students. However, using authentic learning and students' multiple literacies mitigates this limitation.

While action research is not meant to be generalizable, much can be gleaned from action research approaches to inquiry research. While a great deal of educational research is applicable in the classroom, action research, in particular, is applicable *now*. Grounded in a cyclical framework (Efron & Ravid, 2013), action research examines a particular context and applies interventions in order to make changes that are far more applicable in that context than anywhere else. Efron and Ravid (2013) also state that inquiry is not finished after the study has been published. Philosophically, this study follows their lead, and my own efforts are not limited to the confines of these pages. Rather, I recognize that I have a responsibility to not only my students, but also to my fellow educators, to contribute in ways that, ultimately, serve students in the most acute ways possible.

Another, potentially larger, limitation is present in this study and this classroom. Due to the CoVID-19 pandemic, the only available sections to do this study are online sections. Practically speaking, this means that most of the study was completed asynchronously, including the instruction, the final project, and the observations. This is due to the requirements that online courses have no face-to-face component. That said, the interviews themselves were completed synchronously over Zoom. Observations were shifted to observing the data from discussion board posts. The intent, here, was to

observe exactly what students were doing to interact with each other, and to pull qualitative themes that emerged from those student interactions.

Significance

Although this study was specifically applicable to my classroom in my context, this study has the potential to serve as a model for curriculum development at other institutions that also teach ENG 131. Listening to my colleagues' frustrations, both at my own institution and at the institutions across Colorado is disconcerting, at best. However, for this course, considering students' multiple literacies has the potential to address the issues that all of us have encountered, including the implications for curricular and instructional methodology in more traditional settings and using more traditional methods. Additionally, this study has significance for vocational education students, in that it contextualizes their writing within their lived experiences. Finally, and in a larger sense, this study has implications for any student in the Colorado Community College System, as the inclusion of ENG 131 as a GT course can allow for greater options for students across Colorado.

Ethical Considerations

Ethical considerations are crucial to consider in any study (Creswell & Creswell, 2018; Merriam & Tisdell, 2016; Efron & Ravid, 2013). In this particular study, several efforts have been made to address these potential pitfalls:

Ethical Issue one: Institutional Vulnerability

Block and Gordon (2018) describe a population with institutional vulnerability as "individuals [who] have the cognitive capacity to consent but may not be able to make a truly voluntary choice and may be unduly influenced (or coerced) to participate when

they otherwise might not have done so.” In order to mitigate this potential vulnerability, it is important to consider the consent forms offered as examples by my own institution’s IRB (Institutional Review Board, 2019). These exist on the system-level website (the Colorado Community College System), and the instructions the sample consent form, and a consent form that I have completed to address this issue are attached. The qualitative consent form is labeled at the top of the form (See Appendix C).

According to the Colorado Community College System’s Institutional Review Board Operating Procedures – CCCS IRB OP (2007), the Primary Investigator (PI) can apply for a review of a research proposal under an “exempt” protocol if certain requirements are met. Among those requirements is the following:

(a) Research conducted in established or commonly accepted educational settings, involving normal educational practices, such as (i) research on regular and special education instructional strategies, or (ii) research on the effectiveness of or the comparison among instructional techniques, curricula, or classroom management methods. (p. 6)

It is under this requirement that I will submit a proposal for an “exempt” protocol, subject to review by the CCCS IRB.

Ethical Issue Two: Data Security

For most *quantitative* data that deals with student competencies at my institution, it is a normal practice to use student data that is stored on our assessment platform (eLumen), which is only accessible by the instructor and those who have a legitimate reason to access the data (such as the VP of instruction or the assessment director). This is a little bit different for *qualitative* data, and the biggest concern is that the data can be

accessed by staff members at CCC who might not have a legitimate interest in the data. Therefore, I stored recordings and transcripts in a locked cabinet, and I placed the digital files associated with that data on thumb drives and stored those thumb drives in a locked cabinet as well. Additionally, the data was coded so that no student-connected, Personally Identifiable Information is available.

Ethical Issue Three: Deferential Vulnerability

I am white and male-presenting, and with respect to these two identities, there may be an issue with what Block and Gordon (2018) call “deferential vulnerability.” To mitigate this, it is important to consider how to place myself in a position that is not authoritative with respect to my students. In fact, I have experienced, anecdotally, the success of the democratization of the classroom, particularly with respect to students who identify as LGBTQ+, and particularly those students who are transitioning and who identify as a gender or genders that are inconsistent with their biological sex. One of the reasons for this is because I am very open with my college students about my own gender identity. I am a white, mostly male-presenting (though identifying as genderqueer), biologically intersex, liberal Christian, and each of these identities is crucial in my role as “teacher.” I easily find myself aligned with the liberation theology of Paulo Freire (Kirylo, 2011), as it tends to take seriously the call of Christ to serve *and* liberate the oppressed. In addition, I am a US Army veteran, and out of my experiences in Iraq, I have become a pacifist. Including these understandings in my study and in the write-up of my study can help mitigate this vulnerability.

Ironically, perhaps, with the advent of the COVID-19 pandemic, deferential vulnerability has actually been addressed. As an online instructor, there is a certain

amount of anonymity that I have used in the past to make students feel more comfortable. In addition, I was not the instructor of record for the course. Again, this has the potential to address issues regarding deferential vulnerability. Since they never saw me face-to-face except for the semi structured interview, deferential vulnerability was reduced.

Organization of the Dissertation

Chapter one of this dissertation provides the reader with an overview of the study itself, including operational definitions to follow. Chapter two provides a review of the literature surrounding the problem and the intervention. Chapter three provides the methodology, and chapters four and five present and analyze the data.

Definitions of Terms

Authentic Learning

Those activities that “mimic real-world situations, tak[ing] place in meaningful situations that are extensions of the learner's world, and [in which] the learner is at the center of instruction” (Rule, 2006, p. 2), and it includes problem solving, open-ended inquiry, student choice, and social learning.

Competency Levels

In this study, “competency levels” are defined as a specific aggregated score on the established rubric available for English 131 and tested through multiple terms. Further, “proficiency” is defined as scoring a “3” or above on the rubric.

Multiple Literacies

Those “literacy practices involving different symbolic systems (i.e. multimodal literacies) ...[and] new forms of literacy that are responses to rapid technological changes and the new global order” (Zhang et al, 2018).

Student Reflections

As part of the qualitative data, students will be writing reflections, inclusive of narrative, evaluation, and critical reflection (Sparks-Langer and Colton 1991).

Technical Writing

Technical writing is defined in the students' textbook as "the process of making and sharing ideas and information in the workplace as well as the set of applications such as letters, emails, instructions, reports, proposals, websites, and blogs that comprise the documents you write" (Tijerina, 2019). Specific to the context of ENG 131, "technical writing" pulls from this definition to refer to the collection of writing that students complete at the end of English 131, inclusive of a letter, a proposal, and descriptive writing.

CHAPTER 2

LITERATURE REVIEW

On the surface, the problem of practice that is addressed in this study is one of a lack of student technical-writing competence in technical writing. Compounding this issue is the addition of new competencies to Technical Communication I (ENG 131) in the Colorado Community College System (CCCS), developed to make ENG 131 equal in transfer status to English Composition I (ENG 121) in the CCCS: in 2018, the English discipline group in the CCCS developed ENG 131 into a guaranteed transfer course equivalent to ENG 121 (“gtPathways”).

When these competencies were adopted, I attempted a curriculum redesign to account for the necessary change in content (Sterner-Neely & Medendorp, 2019). The purpose of this action research study was to examine the process of a game-based curriculum redesign, pilot, and implementation and to study the factors that contribute to student learning. In examining the literature, we found that play-as-learning is an effective way to potentially harness a co-construction of meaning, and “students who play can easily witness a transformation of their learning (Barab, et al., 2012, p. 518). That study, therefore, did not result in any significant differences in competency and meaning, the implications of learning (Khalil & Elkhider, 2016), as compared to previous semesters. In truth, I was stuck in the same place as I had been with ENG 131. As I sought a solution to the problem of practice, the integration of authentic learning in ENG 131, defined in this context as activities that “mimic real-world situations, tak[ing] place

in meaningful situations that are extensions of the learner's world, and [in which] the learner is at the center of instruction” (Rule, 2006, p. 2), became a viable solution that could be applied in this context. Furthermore, I was able to take game design, which students were very interested in, as well as problem-solving and group work, into this particular study, and I know that these elements work (Sternier-Neely & Medendorp, 2019). Embedded within a social constructivist framework, authentic learning pursues both competence and meaningfulness (Newmann et al., 1995). It is therefore appropriate that the following research questions were developed in order to seek to understand the efficacy and the meaningfulness of authentic learning:

1. After authentic learning experiences, what technical writing competency levels were attained by vocational education students in a first semester, technical writing classroom?
2. How do students perceive the authentic learning experience in a first semester, technical writing classroom?

This literature review seeks to provide a framework for understanding the problem of practice and for situating authentic learning as the appropriate intervention to address the problem of practice, and it is divided into several sections. In the first section, the strategies used for this literature review are discussed. The next section includes the theories used to frame both the problem of practice and the intervention, including historical perspectives used to address similar problems and that use similar solutions and interventions. Following this, a close examination of related research is offered, including the possible relationship between those studies and this study. Finally, a summary and specific connections to this study are offered.

Literature Review Methodology

In this literature review, I used the following databases: Education Resources Information Center, a digital database of research in education sponsored by the Institute of Education Sciences, Education Source, a research database for education-related journals, books, conference papers, and JSTOR (Journal Storage), a general research digital library, used to gather writing-specific articles. In these databases, I searched for the following terms: authentic learning, social constructivism, competency, technical writing, post-secondary, secondary, deficit thinking, countering deficit thinking, and multiple literacies in order to gather evidence from research related to my study. I used peer-reviewed, original research and meta-analyses, theoretical and seminal articles, and the following textbooks: *Curriculum Theory* (Schiro, 2013); *Becoming a Teacher* (Parkay, 2020); and *Developing the Curriculum* (Oliva & Gordon, 2013). In a minority of cases – Payne (2013) for framing deficit thinking, Freire (1970) for his seminal work, *Pedagogy of the Oppressed*, and Giroux (2014) for his thinking regarding social justice – I have used these authors' books.

Theoretical Framework

The following theoretical framework is divided into two major sections: the problem of practice and the intervention. Within each section, issues related to both curricular ideologies and instructional methodologies are discussed.

Problem of Practice

The problem of practice, as noted earlier in this chapter, is a lack of competency in student workplace writing, inclusive of memos, letters, and social media posts; however, this problem is further compounded by a number of factors, including the

addition of curricular competencies developed by the English discipline group of the CCCS as important skills for students to be able to do. These can be explained by existing curricular ideologies and learning theories.

Within the context of curriculum ideology, students' lack of competency, from a social efficiency perspective (Schiro, 2013) can be presented. Education should be concerned, according to Bobbitt (1918), with what is important in the workforce; this is consistent with Oliva and Gordon's (2013) concerns regarding the needs of society as one part of where the curriculum should come from (the other two being needs of students and needs of subject matter). Historically, ENG 131 has been concerned with what is important in the workplace (see Appendix A), and although the revised competencies do include skills within workplace contexts, they also include competencies specific to academic writing courses (see Appendix B)

In the Colorado Community College System, discipline groups take a scholar-academic belief that curriculum should be driven by experts in the field (Schiro, 2013). However, this ideology is mingled with a social efficiency perspective informed by educators like Bobbitt (1918), maintaining the belief that deficiencies exist in skills. In fact, Bobbitt makes the claim that vocational skills are precisely intended to address deficiencies, and it is the workforce – the workers within the specific vocational context – that determine the skills that must be found by educators to be present or deficient in students. The educators within the CCCS determine the competencies that should be addressed within a particular course or curriculum as evidenced by the academic knowledge of those educators. It is no wonder, then, that the competencies for ENG 131

have developed an academic tone and demand competence in academic skills, for academic knowledge is at the heart of the scholar academic (Schiro, 2013).

The scholar academic and the social efficiency perspectives, however, imply a serious and troubling construct: they imply students, themselves, are deficit (Schiro, 2013), which is framed as an issue of morality and inferiority (McCabe & Newhouse, 2014). McCabe and Newhouse's editorial to the "Interrupting Deficit Narratives in Literacy Education" (p. 3) themed issue of *Global Education Review* defines and gives an overview and a synthesis of articles addressing common themes within deficit narratives and how those narratives can be discussed and countered using counternarratives and related thinking. The issue, as a whole, addresses the "intersection of literacy education, marginalized individuals and groups, and poverty from an international perspective" (p. 3). Deficit narratives assume that the burden of poverty rests on students, and deficiency, both in schools and in society, framed as "inability, inferiority, and immorality, [which] becomes institutionalized ideology" (McCabe & Newhouse, 2014, p. 3). This institutionalized ideology is one that is inherently present in a social efficiency-focused examination of the deficiencies of students in ENG 131, but authentic learning, situated as it is in problem-solving and student-led inquiry (Rule, 2006) provides a possibility for a counternarrative to deficiency narratives.

Disrupting these narratives involves, *first*, valuing student strengths – valuing the literacies of students and of their communities. Building upon what students already know and have already been successful in is key, here, according to McCabe and Newhouse (2014). They note that the poor are often intentionally isolated and blamed for their situation. They issue a call to action to speak out against these narratives, since

students are at significant risk: “before their education begins, they are already behind” (p. 5). Currently, then, instead of framing student deficits as the fault of students, as the instructor, I have a responsibility value my students’ strengths. This is further affirmed by the related learning contexts that frame deficit thinking.

Learning theory and philosophical underpinnings of education can explain these deficit narratives as well. Behaviorism (Skinner, 1953; Parkay, 2020) is founded on a system of rewards and punishments that offers consequences that shape a student’s behavior using environmental factors. Social efficiency ideology within curriculum theory is closely related. Teachers follow established curricula, and the efficacy of teachers’ efforts to shape students’ behavior is measured by objective, standardized tests: students change in behavior is what matters; learning is therefore that which can be seen as a change in behavior, and learning is valued over meaningful growth (Schiro, 2013).

This perspective is situated in what students perform to show a change in behavior or not; that is, in deficit thinking (Gorski, 2012). A cycle, beginning with student deficits framed as student inferiority (McCabe & Newhouse, 2014), moving to curriculum that is embedded in social efficiency and learning embedded in behaviorism, and finally, moving back to deficits propagates in a continuous feedback loop (Senge et al., 2012). This continuous feedback loop tends to morally justify existing social conditions (Gorski, 2012). There is, however, a framework for countering this thinking, which is at the heart of my intervention for my problem of practice, which seeks to break out of the deficit narrative through using authentic learning.

Intervention

The framework for my intervention draws upon tenets of authentic learning within a social constructivist framework. The use of students' multiple literacies is discussed first in order to establish a theoretical framework for countering deficit thinking. Following this discussion is a presentation of the curricular and instructional frameworks necessary for my intervention, which is authentic learning.

Multiple literacies. Multiple literacies, based on the work of Anderson and Irvine (1993), Zhang et al., (2018), Giroux (2014), and Osorio (2018) is defined as those “literacy practices involving different symbolic systems (i.e. multimodal literacies) ...[and] new forms of literacy that are responses to rapid technological changes and the new global order” (Zhang et al., 2018). Addressing the multiple literacies of my students specifically allows me to break out of the reinforcing feedback loop of Senge et al. (2012), which sees student deficiencies as inherently connected to what happens in the classroom. Authentic learning connects to multiple literacies through the use of student directed activities, student inquiry, and collaborative construction of meaning (Rule, 2006), all three of which invite students to use literacies that are not inherently in the classroom.

Furthermore, the efficacy of the use of students' literacies is clear: Zhang et al. (2018) conducted a meta-analysis of existing research on multiple literacy pedagogies, inclusive of 66 articles about multiliteracy ranging from 2006-2015, in order to provide a “conceptual synthesis and effectiveness review” (p. 34). Their meta-analysis resulted in conceptual papers, qualitative, quantitative, and mixed methods research papers, in which they discovered a steadily growing body of research addressing multiliteracies.

Theoretical frameworks in the articles were found to be solid, overall. The studies included in the research generally drew clear conclusions about the efficacy of the use of multiliteracies, including the use of students' real-life experiences, "overt instruction" (p. 43), which is the direct and explicit connection between in-school and out-of-school literacies, and "transformed practice," which "shifted learners' at-risk/ deficit identities to multiple identities of promise" (p. 44). Researchers also found that literacy practices were often linked to personal identities, including racial, "ethnic, linguistic, and cultural identities" (p. 47). It should be noted that much of the limitation in this meta-analysis centered around the lack of research in specific areas, including the use of collaboration using multiple literacies and critical framing of multiliteracies, meaning that further research is warranted and needed to determine the efficacy of non-critically neutral multiliteracies. The growing body of research surrounding the use of students' multiple literacies supports the efficacy of these constructs as a counter to deficit thinking. It is useful, in this case, to provide a precise example of the use of multiple literacies.

Giroux (2014) notes that educators need to enable students to engage in multiple literacies (Giroux, 2014). This empowers students to think critically as they interact with learning experiences and as they extend that learning to outside-the-classroom experiences. This can be directly seen in the work Osorio (2018), who states that the use of student literacies is "a mutual humanization pedagogical approach can be described as a process that welcomes *shared ownership* between the educator and students in problem-posing education where students become coinvestigators rather than simply the receivers of information" (p. 7, emphasis added). This also counters deficit thinking through the use of student's multiple literacies: the combination of co-creation of meaning and

problem-posing education can be used in social constructivism, and more specifically, authentic learning instructional frameworks.

Addams (2017) notes that education widens a familial (and cultural) gap between immigrant parents and children, as Osorio (2018) affirms. Home, in this context, is one set of literacies, and school is another. Education is damaging to students unfamiliar with the established in-school cultural context because it is so different – if a student embraces these in-school literacies, “he has prematurely asserted himself long before he is ready to take care of his own affairs” (Addams, 2017, p. 55). Dividing students from their families will contribute to those students being ineffectual parents. Students’ literacies (in this case, in particular, their *cultural* literacies) are valid *and* needed; immigrant children bring richness, not liabilities, to the classroom, and this is readily seen in the ENG 131 classroom. If students are unfamiliar with the academic contexts within the ENG 131 classroom, then rather than blaming students for their deficiencies, much can be done to use the literacies that students already have and that they bring to the classroom. Once the countering of deficit thinking using students’ multiple literacies has been established, an examination social constructivism as the dominant learning theory can be conducted.

Social constructivism. In terms of learning theory, learning is a social act that is co-created through language, resulting in meaning for the learners (Vygotsky, 1979). Vygotsky’s Zone of Proximal Development (ZPD) has been proven to be an effective model for understanding students’ epistemology (Powell & Kalina, 2009). Knowledge in this context is constructed through linguistic dialogue in social interactions—that it is co-created in the environment, whereas learning takes place at “an individual level through collaboration” (Churcher et al, 2014, p. 35) in Vygotsky’s ZPD (1978), the environmental

“place.” Another step needs to be discussed, here: that knowledge exists in what Churcher et al (2014) refer to as the Zone of *Actual* Development – ZAD. Learning “may be defined as an expansion of the ZPD into the ZAD” (p. 35). According to Hung (2014), “human beings make [a] place of their own and thereby create meetings” (Hung, 2014, p. 1140), and Vygotsky’s ZPD is the “place” where learning happens and where meaning is made at this place. In fact, “individual...activities make the place meaningful...thus the learner is making the place and made by the place...the process of learning is the course of being with/in but without being bound to the place” (Hung, 2014, pp. 1140-1141). Meaning is, further, co-constructed through the ZPD (Vygotsky, 1978), and knowledge must be co-constructed through social interactions (Powell & Kalina, 2009). These social interactions within the ZPD are part of the efficacy within authentic learning.

Likewise, Dewey (1897) very much affirms Vygotsky in his assertion that education is about the individual and society, and in that people are “social individual[s], and that society is an organic union of individuals” (p. 77). School is meant to facilitate those social interactions that a person needs to be fully actualized, and content is only content in relationship to the social existence of a student; it should be founded on “the development of new attitudes towards, and new interests in, experience” (p. 78). Learning methods are centered in meaningfulness to students, and efforts toward competency should be redirected to meaningfulness. Neither false cultivation (that is, a frivolous pursuit) nor discouraging of students’ interests should be the pursuit of methodology; rather, the teacher, through careful observation, can offer to students that which students are ready for. Social progress, in this context, is driven by education, and social progress takes place through improved consciousness (Dewey, 1897), what Freire (1970) would

refer to as *conscientização*. Dewey's views, here, cannot be overstated: he states that, as a "social servant...the teacher is always the prophet of the true God" (p. 80), which sounds hyperbolic, though it certainly fits with the development of an awareness of the problems of poverty in a Freirian and Girouxian context.

Authentic learning as facilitator of social constructivism. In the context of this study, authentic learning is defined as activities that "mimic real-world situations, tak[ing] place in meaningful situations that are extensions of the learner's world, and [in which] the learner is at the center of instruction" (Rule, 2006, p. 2). This perspective aligns with Deweyan social constructivism as a learner's world (Schiro, 2013), and it aligns with the perspectives that Addams (2017) and Counts (2017) hold regarding social reconstructionism. Counts claims that alongside of awful circumstances remains hope, promise, and possibility, and that successful schools are for the development of society, not just the study of society. Further, Counts contends that the American dream should be restructured to include marginalized voices and to make society better for everyone. In the context of this study, this includes the voices of those students who must take an unfamiliar writing course: English 131. Likewise, Addams (2017) states that, as teachers, we have to do more to connect students to their own literacies. Education, for Addams, must embrace culture that is "wide and deep and universal" (p. 56) to connect students and their parents and their new country. This relationship between in-school literacies and out-of-school literacies is crucial in this study.

Authentic learning, as defined above, consists of four distinct components (Rule, 2006): real-world problems and solutions, inquiry and metacognition, social

constructivism, and student-directed activities. Each of these components is discussed in the following paragraphs.

Real-world problems and solutions. Addressing real-world problems can be connected to a sense of critical consciousness, *conscientização*, which is a process of becoming aware of the problems of poverty and of oligarchical hegemony (Freire, 1970). Freire makes the claim that problematizing education cannot serve the interests of the oppressor, for no oppressor would permit the oppressed to question *why*? Through addressing problems through authentic learning, issues of power and privilege are addressed at the same time. Problematizing learning offers an opportunity for a counternarrative to the thinking of the status quo.

Inquiry and metacognition. When student learning is expressed as meeting competencies only, meaning is sacrificed (Ye & Cheng, 2018). Authentic learning addresses this deficiency in the development of students. Further, student inquiry that uses workplace writing is more meaningful than academic writing (Cox et al., 2009). Cox et al. describe a case study in which cooperative learning component of authentic learning: students work in cooperative learning groups to address a community-based need and to solve that issue as a group, creating technical writing documents based on the needs of the project. Workplace writing, in this context, includes collaborative goals, varied purposes and audiences, reader-focused writing, and instructional writing, and students use critical thinking skills, reading and writing evaluation, and writing as opposed to the use of templates and ready-made genres. Cox et al. contend that letters, memos, and other workplace writing gives the wrong impression in the technical writing classroom: that writing is easy, and not a complex, situated problem. With respect to

metacognition, Preus (2012) found that authentic learning was fostered through reflective action and peer support, and that it facilitated “open-ended questions...[and] metacognitive strategies (p. 67). Applied to my own ENG 131 classroom, authentic learning has the framework necessary to facilitate this higher-order thinking.

The efficacy of authentic learning has been determined in a number of studies. Ozverir et al. (2017) attempted to investigate the use of authentic activities in an English as a Foreign Language class, and they found that authentic activities should have real-world relevance, be complex and ill-defined, inviting student problem solving, use multiple resources, provide opportunities to collaborate, and with respect to inquiry and metacognition, provide opportunity to reflect.

Group work. Within authentic learning, group dynamics can replace individual practices as the group co-creates meaning regarding the material that they are learning (French et al., 2011). Social constructivism is differentiated from collaborative or competitive learning by the use of individual roles and accountability (Kagan, 2002), and it uses situational lessons consisting of authentic and “reliable learning activities” (Huang et al, 2014, p. 128), during which students are more likely to solve problems, as cooperative learning can increase student interactions, facilitate positive interactions, and overcome “inadequacies of traditional learning” (p. 138). Research supports these ideas. Zielinski (2017) attempted to explore the implementation of constructivist frameworks in community college faculty members’ classrooms, and she made the following recommendations: students should practice collaboration, which was shown to be useful for competence and meaningfulness; instructors should embrace authentic learning, inclusive of the use of real-world applications and the use of service-learning and

internships; and instructors and students should work to link material with personal experiences, which is, essentially, the use of multiple literacies.

Similarly, Centellas and Love (2012) conducted a study on the use of collaborative group assignment. The purpose of this quasi-experimental study was to examine the efficacy of the use of a collaborative group project in order to teach a specific political science course competency. Centellas and Love found that evidence for collaborative learning efficacy regarding teaching abstractions and project increased competency through the use of collaborative group projects, loosely under the larger “active and experiential learning” categories (p. 506). As this component is part of authentic learning, the collaborative structure will be a part of the ways in which the current study will facilitate authentic learning.

Student-directed activities. In this fourth component of authentic learning as identified by Rule (2006), it is important to note that student/learner-centered practices are vital, which use social constructivism learning theory (Vygotsky, 1978; 1979). Additionally, student-directed activities imply the use of multiple literacies, which seek to use what students bring to the classroom rather than what they are directed to learn (Zhang et al., 2018). These can provide a counter-narrative to deficit thinking, increasing a sense of students’ humanization (Osorio, 2018), which values students as co-creators of knowledge and meaning (Vygotsky, 1979; Osorio, 2018). Lombardi (2007), in examining the core of authentic learning, found that it deals with problem-solving in real-world contexts, inclusive of participation in community-based practices, problem and project-based learning, case studies, and role playing. Students have the opportunity to build skills, including judgement, patience, learning transfer, and flexibility. The author states

that examples of authentic learning practices include simulations, student developed media, inquiry, peer evaluation, research, and documentation and publishing. In the same article, the author asks what makes authentic learning effective (Lombardi, 2007), which is found to be student-led learning, which invites and demands that students look for connections on their own; this practice is vital to authentic learning and to “new contexts [that] need to be explored” (p. 8).

Finally, Lombardi (2007) asks the following question: why is authentic learning important? He posits that the approach that authentic learning takes is embedded in a scholar academic ideology, though it uses many of the elements of more progressive philosophies of teaching and learning, especially learner centered and social reconstruction philosophies. In other words, authentic learning tends to take many facets from each ideology and apply them in ways that work well.

Historical Perspectives

In the following section, the movement from deficit thinking to a sense of critical consciousness that leads to a valuing of counternarratives and student literacies is discussed.

Deficit Thinking

Deficit thinking is rooted in a sense of student immorality and inferiority (Zhang et al., 2018). When students are unfamiliar in-class literacies, combined with cultural divides, this results in “gaps in knowledge” (Hale, 2020, p. 247), and the blame for deficits is placed in the hands of students (Payne, 2013). Common thinking states that holding teachers accountable, focusing on lifting students out of poverty, and situating the blame for poor achievement among those who perform at such levels will motivate

those who are in difficult situations to emerge from achievement gaps (Pollack & Zirkel, 2013), but Gorski (2012) counters this thinking. In fact, Gorski describes this type of deficit thinking as having a few major recognizable facets: that it tends to morally justify existing social conditions, that it diverts attention away from systemic conditions that exist, and that it discusses poverty in the context of a lack of achievement.

This thinking described by Gorski can be seen in the writings of theorists as Ruby Payne (2013) who subscribe to this thinking, desiring to help students create their “future stories” (Payne, 2015). Others, however, flip the philosophical constructs of theorists like Payne (2013) to instead use a counter-narrative approach to understand students’ *current* stories as empowering (Hale, 2020). In addition, they also provide educators, with tools to counter the *praxis* that stems from that deficit ideology. They replace that praxis with ideals and tools to “disrupt and reject deficit framing” (Haddix, 2016, p. 29). This sense of becoming critically conscious is embodied in Freire’s (1970) *conscientização*: the act of transformation into a state of state of *becoming* conscious to problems of poverty and power. Transformation, in this case, is an ongoing *process* rather than a specific end state. In his seminal work, *Pedagogy of the Oppressed*, Freire (1970) describes the act of becoming conscious – *conscientização*. Additionally, Freire describes the Banking Concept of Education, a focus of substantial criticism in *Pedagogy of the Oppressed*, in which rote memorization “becomes an act of depositing, in which the students are the depositories and the teacher is the depositor” (p. 72). In this context, learning results in a product only – that which is pulled from a student at test time – social efficiency (Schiro, 2013). As a response to this banking concept, Giroux (2004) describes critical *pedagogy* as “a form of political intervention...that is capable of creating the possibilities for social

interaction” (p. 34). Intervention, then, implies action – a process that moves towards Freire’s (1970) *conscientização*, an awakening of the problems of poverty and of an oligarchical hegemony.

Additionally, Kyrlo (2011) defines “critical pedagogy” as “living an examined life relative to the art and science of teaching” (p. 213). He goes further than this, however, when he explains that critical pedagogy is more than just “talk.” He quotes Steinberg in saying that “liberals talk...radicals must do” (p. 215). In this way, the banking concept of Freire is replaced by a process that moves towards a more socially just community (Giroux, 2004). For my own classroom, this leads to teaching ENG 131 for the purpose, ultimately, of connecting students to active change in their communities, inclusive of learning how to use the components of authentic learning for this purpose.

Student Literacies

Examining the culture of the movement of students from high-poverty schools within Ciudad, Colorado through a social-efficiency focused, vocational education that specifically values skills competency over meaningfulness (Schiro, 2013) is important to consider. Defined by Howard (2010), culture encompasses socio-economic factors, gender, language, family, and upbringing, among other factors (p. 53). Students who come from wealthy families in Ciudad populate high-performing K-12 schools (Colorado Department of Education), and this trend continues through academic and vocational education at the community college level. It should be noted that more important than the understanding of a particular culture is the understanding of “equity and inequity and of justice and injustice” (Gorski & Swalwell, 2015, p. 36), and this examination has been

undertaken in this study in order to provide an understanding for the problem of practice and a framework for the use of student literacies as a counter to that thinking.

By way of example, in “Use of Native Language and Culture (NLC) in Elementary and Middle School Instruction as a Predictor of Mathematics Achievement” (Van Ryzin & Vincent, 2017), the authors demonstrate that a number of studies in the early parts of this decade (2010-2012) found that American Indian/Alaskan Native (AI/AN) tend to “lag behind their...peers in academic achievement and graduation rates” (p. 3) – deficit thinking. This tends to essentialize the *incredibly* vast and enormous set of experiences that is “NLC.” The researchers in this article hypothesized that when pedagogical praxis more closely matched students’ Native experiences, such as “attentive involvement in family and community practices and events” (p. 4) – including storytelling – especially oral traditions – that students will do better, and this is precisely what they found, specifically with respect to math achievement. They state that “students whose cultural identity is more aligned to traditional Native beliefs and activities should gain the most from Native- focused educational programs” (p. 28), and that the findings suggest a more “nuanced effect” with regards to math and NLC (p. 30).

Looking at narrow and nuanced effects of a particular group can lead to very different conclusions than generalizations can (Haddix & Price-Dennis, 2013). Haddix and Price-Dennis found that literature, inquiry, and dialogue functioned as tools that allowed [the teacher] to craft experiences for the students that would challenge them to question inequitable beliefs, policies, and practices in their school community....by creating space in the classroom for students to engage in critical work around multiple texts, [the students became] informed and vocal citizens of the school community.

Through the use of “unconventional” learning experiences, students are more empowered to challenge that structure (Kinloch et al., 2017). These unconventional learning experiences provide for the windows, mirrors, and sliding glass doors of Sims Bishop (1990), and they provide a way for students to practice their thinking in varied contexts. This use of, essentially, rhetorical structure (audience, purpose, and tone) does something similar with regards to student self-efficacy and empowerment (Martinez & Montaña, 2016) and the more fluid “code-meshing” of Boutte and Johnson (2013).

Deficits as Positive Points

Hale (2020) uses a meta-analysis meant to argue that student deficits are not potential difficulties, but potential opportunities; that deficits *as* opportunities are key. Deficits, Hale states, can be examined as “the disjunct between the respective cultural capitals of the student and institution” (p. 249). Hale states that educators can address what students need, in particular, and specifically. In fact, students are already aware of their deficits; they do not need reminding; what educators must do, instead, is to act on what students already know, which connects to the current study because the use of what students already know is embedded in the student-directed activities and inquiry of Rule’s (2006) components of authentic learning. Taken collectively, valuing what students already know “foregrounds student *affect* as a meaningful component of student success” (p. 259), which is a major component of social constructivism.

Related Research

In the following section, research is presented that relates to two elements: the use of deficits a counter to deficit thinking and the use of components of authentic learning as effective teaching and learning tools.

Zuo and Schreitrum (2019) studied authentic learning classroom interventions, “investigating whether well-designed classroom practices can effectively engage students in topics that students do not necessarily connect within their daily life,” which can lead to “teaching practices to increase student engagement, as well as to improve student learning and interest in global agriculture” (p. 100). This investigation resulted in increased understanding of content and increased interest in content and developed a rationale for the use of authentic learning as a vehicle for student literacies. Zuo and Schreitrum (2019) note that their study follows previous studies that show increased understanding and interest after authentic learning interventions. Additionally, meaningfulness and competence based on self-reported survey – increase of interest and understanding – varied across grade distribution; not likely due to grades. Authentic learning, therefore, has the potential to be an efficacious vehicle for valuing student literacies, and therefore, to counter deficit thinking.

Authentic learning is an efficacious way to foster critical and creative thinking (Beavers et al., 2017). One of the components that Rule (2006) identifies is metacognition, inclusive of critical and creative thinking. Beavers et al. (2017) explored the themes that Early Childhood Education (ECE) students reflected on during a seven-week summer practicum in order to see if reflections had an impact on student critical thinking skills through the analysis of “reflective dialogue using qualitative data and quantitative analysis of...critical thinking skills” and to “identify patterns of student thought” when students were engaged in reflection (p. 5). The results of the qualitative reflections were grouped into several themes, including details that revealed only basic recall and comfort level; themes also, however, indicated critical and creative thinking,

including a desire to improve knowledge and participate in professional development, which the author state is “evidence of their increasing abilities to reflect on their experiences and practices and to engage in critical thinking” (p. 13). Based on the results of this study, authentic learning should be efficacious for building competency *and* meaning within the classroom.

Authentic learning is also useful for determining curriculum competencies. Robertson et al. (2012) investigated competencies related to event management within the context of hospitality studies. In this exploratory case-study, which used both personal experience and praxis, and was situated in context, which a crucial facet of teacher education inquiry, researchers identified their own positionalities as they moved through this study. Researchers in the study used authentic learning to determine the set of competencies that need to be included in the event management curriculum. While a good deal is known about the hospitality industry needs, according to Robertson, et al., little is known about student needs. The study found that student perceptions need to be a central focus of course curriculum in order to align with what students are interested in and potentially competent in. This aligns with existing research on authentic instruction and with the use of authentic learning in the context of the current study.

In terms of offering possibilities for real-world connections, a component of authentic learning, social media can be harnessed to provide a context and setting that is embedded in students’ realities. Galvin and Greenhouse (2019), in their meta-analysis that explored the use of social media in an authentic learning context examined the existing research on how high school writing courses have used social media, and more specifically, on which factors were useful and which were barriers to student learning.

Galvin and Greenhouse found that social media, in general, are efficacious learning spaces, that the use of modeling and scaffolded instruction contributes to student learning, that social media was used as a final project space, a supplemental tool, and as an authentic context, and that the successful implementation included the use of student-directed choices regarding social media and authenticity (use of social media in the way it is intended on a specific platform). Admittedly, the researchers found that when interest lacked, participation was not likely, and that more research is needed to determine which platforms are most efficacious.

Another component of authentic learning, offering opportunities to solve problems in an authentic context, is important to consider: Williams et al. (2013), addressing problem-based learning, and discusses and addresses the abstractions embedded within “authentic audiences...[as] a tangible anchor for learning” (p. 247). Williams et al. state that technical communication documents must address multiple audiences at one time – experts and non-experts; managers and users; each document often has three or more audiences. In a typical classroom, however, the “audience” of a paper is often the students’ peers or instructor. Williams notes that a difference exists between “addressing” an audience and “invoking” an audience (p. 248), and problem-based learning can address the latter, as in the procedures in the current study. Problem-based learning, Williams claims, “addresses a specific problem, relies on self-guided learning, includes experiential learning, involves activity-based learning including research, involves inter-disciplinary learning, includes exemplary practice, and is principally group-based” (p. 248). Students in a New Media and Rhetoric course, in the process of using problem-based learning, learned how to collaborate and co-create

meaning, how to develop key skills related to the content, and how to determine the relevant deliverables for the assessment pieces of the learning.

Peltola (2018), in a qualitative descriptive study using third-year advanced writing for public relations students, found that authentic learning is a potentially efficacious vehicle for advanced writing. Peltola describes the authentic learning experiences of students using “experiential learning modules, small group learning methods, authentic exercises, and instructional scaffolding techniques to improve student writing and promote workplace readiness” (p. 322). Similar to Rule (2006), Peltola claims that authentic learning includes real-world problem-solving, open-ended inquiry and metacognition, group collaboration, and presentation of findings. Peltola found that working in small groups and presenting to class members improved communication skills. In fact, in Peltola’s study, no student scored unacceptable in their writing. Student reflections indicated that students thought that the use of small groups and authentic learning was positive and that it helped them to think and to transfer their learning to other classes.

Authentic learning is not just useful for increasing competency in writing; it is also useful for increasing student meaningfulness. Thibodeaux (2019), in a mixed methods study on student perceptions of choice and ownership, examined student understandings of their own choices, inclusive of ownership of their learning and the use of their voice. Thibodeaux found that choice, voice, and ownership needs to happen not only at course levels, but also at programmatic levels as well. Admittedly, this is a limitation within the current study. Additionally, Thibodeaux found that students do take charge of their learning in this context, but mostly after they have become invested in the

process. Sometimes, Thibodeaux notes, learner choice implies that students will not be entirely comfortable, though making choices and practicing being in charge of one's own learning was a powerful motivator.

In relationship to this study, in particular, Oksiutycz and Aziomya (2017) found that action research can be used to develop curriculum that supports course skills and competencies, project-based learning, and social action. Overall, their project resulted in curriculum that increased students' deep learning, interest in the subject matter, and soft skills, including group collaboration and critical thinking. Students participated in community-oriented work, which focused on the showcasing of their projects, which, ultimately, led to a number of award-winning projects in this mixed-methods, action research case study. Oksiutycz and Aziomya (2017) used group collaboration and project-based learning, which "highlights the interconnectedness of different sections of the curriculum, promotes deep learning, integration of knowledge and develops in learners a sense of responsibility for their own learning through their engagement with real life problems" (p. 198). Their study supports the curriculum I will be using to address a specific social problem (feeding high-risk and elderly people who are homebound due to their risk of complications from COVID-19), and it specifically supports many of the components of social constructivism and authentic learning found within my intervention, including group work and project-based learning, which is discussed next.

When examined holistically, it is important to consider how these studies can inform the current study. Watogodakumbura (2013) discusses how to offer constructs for the integration of authentic learning in the classroom. Watogodakumbura states that authentic learning can provide students with the opportunity for meaningfulness and high

levels of self-actualization, and that questions (i.e. problem-based learning) are very effective in an authentic learning context. Watogodakumbura notes that staying on task, as it pertains to what is important in a particular area is also important. In fact, this last concept is important to consider in that it contrasts with the accepted practice of covering all facts and concepts within a particular study area. Teachers must encourage students in inquiry-based methods for pursuing their own learning, both related to the content and beyond the content. The author states that teachers should “not overload a curriculum with everything that appears interesting, rather we need to prioritise [the curriculum] to identify the most important that fit in the limited time period” (p. 301). Question-based learning and sticking to the absolute most important concepts is more conducive to authentic learning, inclusive of contextualizing learning to students’ day-to-day lives; this question-based and essential knowledge contributes to a depth-over-breadth construct, which is, in essence, deep learning itself.

These constructs contribute to an intrinsically motivated classroom, rather than a classroom that is solely motivated by extrinsic factors. Further, these constructs invite students into a “deeper learning experience resulting in more lasting and useful outcomes” (p. 303). Collectively, these studies have the potential to inform the development of the current study through integrating the use of Rule’s (2006) four components. Each of the above studies addresses a component of Rule’s (2006) components of authentic learning: the use of real-world problems and solutions, inquiry and metacognition, social constructivism, and student-directed activities. These offer a chance for increased writing competency as well as increased meaningfulness for students.

The preceding research notes that not only is authentic learning efficacious in helping students learn, but that it does so by valuing what students bring to the classroom. The deficiencies of the workplace writing of students in ENG 131 framed within a deficit thinking context is problematic, to be sure, but frameworks exist that provide a counter to this thinking (Gorski, 2012; Gorski & Stalwell, 2015). Among these frameworks is the use of students' literacies: multiple literacies (Zhang, et al., 2018). These literacies provide a way for students to use what they already know and understand to accomplish inside-the-classroom tasks and to solve real-world problems through authentic learning, itself an instructional methodology framed within social constructivism as a curriculum theory (Schiro, 2013) and as an educational philosophy (Parkay, 2020). The research discussed in this chapter is shown to be efficacious for not only addressing student deficiencies (Zuo & Schreitrum, 2019), but also for facilitating student meaningfulness (Rule, 2006; Cox, et al., 2009; Zielinski, 2017).

Connection to the Problem of Practice

The problem of practice is, on the surface, an issue of student deficiency within workplace writing, but the causes for these deficiencies are complex and systemic. This process flips the established narrative of student deficiency to one that counters the deficit thinking that places the blame for a lack of student competency on the students themselves (Zhang et al., 2018; Hale, 2020), and instead of viewing students as deficient, it values the literacies that students already have and that they bring to the classroom. By virtue of a framework that invites students to direct their own activities, authentic learning implies the use of multiple literacies, which seek to use what students bring to the classroom rather than what they are directed to learn (Zhang, et al., 2018). By

facilitating the use of authentic learning as established in the extant literature, the current study attempts to provide the potential for an increase of student proficiency of workplace writing and the meaningfulness of student workplace writing as co-constructed in a social constructivist framework. After a close examination of the efficacy of authentic learning, it is concluded that the use of authentic learning examined to determine the effects of authentic learning on the competency levels of the workplace writing and the meaningfulness of authentic learning of vocational education students in a first semester, technical writing classroom.

CHAPTER 3

METHODOLOGY

This convergent mixed methods action research study examined the effects of authentic learning on the competency levels of the technical writing and the meaningfulness of authentic learning of vocational education students in a first semester, technical writing classroom. A convergent design uses “qualitative and quantitative data...collected in parallel, analyzed separately, and then merged” (Creswell & Creswell, 2018, p. 127). In this study, the competency levels of the workplace writing of students as expressed in a course-level rubric were analyzed to test the efficacy of authentic learning as expressed by Rule (2006), including solving real-world problems, conducting open-ended inquiry, participating in social learning, and involving student choice. Observations of student discussion boards, students’ reflective writing and focus-group interviews were gathered to gain an understanding of the perceptions of student experiences in the ENG 131 classroom during the authentic learning experience. The reason for collecting both quantitative and qualitative data was to gather a complete understanding the efficacy of authentic learning as it contributes to students’ construction of knowledge in this context. This understanding will inform the decision-making processes of curriculum designers of ENG 131 as we seek to meet the needs of students in certificate programs, Associate of Applied Science programs, and nascent Bachelor of Applied Science (BAS) programs at Ciudad Community College.

Problem of Practice

Successful writing in unfamiliar contexts (i.e. writing transferability) counts on using “prior knowledge for new purposes, [which] represent[s] the very definition of learning transfer” (Stinnett, 2019, p. 357). Because students in English 131 simply don’t come to class with the same kinds of prior writing experiences as traditional students, it has become exceedingly rare within the *current* curricular framework for them to be proficient in terms of meeting course competencies. Although we were not successful in the curriculum redesign completed prior to this study (Sternier-Neely & Medendorp, 2019), the inherently reflective nature of action research (Merriam & Tisdell, 2016) allowed us to identify several blind spots in our thinking; most acutely, that we were building our curriculum design around what students *lacked* rather than students’ existing literacies.

Research Questions

1. After authentic learning experiences, what technical writing competency levels were attained by vocational education students in a first semester, technical writing classroom?
2. How do students perceive the authentic learning experience in a first semester, technical writing classroom?
 - a. How do students direct their learning in the authentic learning experience?
 - b. How do students interact as a group during the authentic learning experience?
 - c. How do students approach the problem-solving aspect of the authentic learning experience?

Chapter Overview

This chapter outlines the research design and methods of the Dissertation in Practice (DiP). It offers an overview of the DiP, a description of the research design and intervention, and a description of the participants. In addition, it includes the data collection measures and instruments, as well as the research procedure and the methods for analyzing the data and a discussion of the methods for ensuring validity and reliability.

Context and Participants

Ciudad Community College (CCC) is a small, urban community college, with a Full-Time Equivalent (FTE) of 3,412 in 2018-2019, and a total of 7,345 students in the same year (2019 Facts). 42% of CCC students identify as Hispanic or Latino, qualifying CCC as a “Hispanic Serving Institution” (HSI), defined as an institution of higher learning that “has an enrollment of undergraduate full-time equivalent students that is at least 25 percent Hispanic” (U.S. Department of Education). In any given year, I have between 40-120 students enrolled in my English 131 classes, usually in the fall and spring, though I also usually have a summer section of between 10-20. This study included one class of ENG 131 in the summer of 2021.

Setting

The setting of this study will be in a 100-level, technical writing course. Typically, the majority of my students identify as cisgender males, with about 25% in any given semester identifying as female, and a small number identifying as queer, transgender, or gender non-binary. The racial and ethnic makeup of the class is similar to the institution at large, and the racial and ethnic makeup of the class is discussed in detail

in chapter 4. Most of my students come from backgrounds that are steeped in vocational education, and many of them have been practicing their vocation for a number of years already. For example, the class is mostly dominated by welding, machining, and automotive students, and most of those students have been welding fences, working in machine shops, and fixing cars long before they began a path towards credentialing in their vocational area. It should be noted at this point, that due to the COVID-19 pandemic, this is an online course. In addition, due to staffing requirements, I am not the instructor of record for the course. I am functioning like an assistant instructor, and I have access to course materials as well as the data that students are developing in their observations, including discussion boards, reflections, and rubric scores. Additionally, I have interviewed the instructor of record for this course, Liz (L. Medendorp, personal communication, 15 July 2021).

Participants

The target population was all students in technical writing classes across the Colorado Community College System. The accessible population was all students who take technical writing courses at Ciudad Community College (CCC). To conduct the study, I took a convenience sample of ENG 131 classes that I am assigned at CCC. The sample size is 7, though I am also interviewing the instructor of record for the course. The course met asynchronously (online) for 8 weeks.

Research Design

This convergent, mixed methods, action research study examined the effects of authentic learning on the competency levels of the workplace writing and the meaningfulness of authentic learning of vocational education students in a first semester,

technical writing classroom. A convergent design uses “qualitative and quantitative data...collected in parallel, analyzed separately, and then merged” (Creswell & Creswell, 2018, p. 127). The reason for collecting both quantitative and qualitative data is to gather a complete understanding the efficacy of authentic learning as it contributes to students’ construction of knowledge in this context. This understanding will inform the decision-making processes of curriculum designers of ENG 131 as we seek to meet the needs of students in certificate programs, Associate of Applied Science programs, and nascent Bachelor of Applied Science (BAS) programs at Ciudad Community College.

Action Research

An action research study uses an “ongoing cycle of plan, act, observe, reflect” (Merriam & Tisdell, 2016, p. 235), and this matches both the research questions themselves and the mixed methods design. The action research cycle is expressed in the way in which the *process* of the intervention is a focus of the study, and how that process as it is refined through the cycle can influence a difference in student competency in my classroom as well as how students perceive their experiences during the authentic learning experience. Admittedly, I have often applied this to my courses, but I often place the *act* portion of the action research process before the *plan* portion. To mitigate this, a more deliberate and intentional design for action research was present in this study, with the ultimate purpose of improving my own practice, inclusive of curriculum design and instructional methodology (Herr & Anderson, 2015).

Convergent Mixed Methods

Convergent mixed methods research is, at its heart, an attempt to understand something as a whole (Creswell & Creswell, 2018). If qualitative inquiry is about the

depth of a study and quantitative inquiry is about the breadth of a study (Paton, 2002), then mixed methods research combines the two into a balancing act. Furthermore, convergent mixed methods research takes the depth versus breadth challenge and integrates them to another degree. This is at its heart, the purpose of this study – to gain a holistic understanding of the constructed knowledge and meaning – collectively, the *experiences* – of students in my classroom.

It should be noted at this point that while I have one quantitative question and one qualitative question, I have three qualitative sub-questions. The purpose of this was to understand the facets of authentic learning as they are expressed through group work, collected through observations and semi-structured interviews, and through individual experiences, collected through reflections and semi-structured interviews. Collected together, they answered the qualitative question, and the qualitative data and the quantitative data, analyzed separately, will then be integrated into a cohesive whole – implications for the purpose of the study. Zohrabi (2013) notes that “the quantitative data are analyzed through descriptive statistics and qualitative data by means of descriptive and thematic interpretations” (260), and in essence, the takeaways from this study are those things that I can conclude about how authentic learning relates to students’ construction of knowledge.

Quantitative Portion

The quantitative data attempted to answer the first research questions. After data was collected through scores on the rubric, it was analyzed through descriptive statistics. Descriptive statistics can offer a way to simply present what exists through the use of minimal data points (Fraenkel et al 2015), and this supports the qualitative portion of the

study. Within the English Department at CCC, these data potentially offer a way to examine competency rates across the semester and across terms, which extends the reach of this study into the past and future.

Quantitative variables include the independent variable (the use of authentic learning) and the dependent variable (scores on the rubric). To ensure validity, student assignments were scored using a normed rubric. Additionally, the three main instructors for ENG 131 scored the rubric.

Qualitative Portion

Merriam and Tisdell (2016) highlight the importance of leaving stories intact, and then using those stories as intact narratives of a participant's experience. Sparks-Langer and Colton (1991) affirm this approach. They state that "participants construct and reconstruct narrative plots to gain a deeper understanding of their experience" (p. 42). This is the intention of the qualitative analysis, and after collecting data through observing discussion boards, collecting reflections, and conducting interviews, the analysis was completed through a two-cycle coding process, followed by focusing strategies to develop categories and themes.

Intervention

The purpose of the intervention for the described problem of practice was to create a set of authentic learning activities, inclusive of solving real-world problems, conducting open-ended inquiry, participating in social learning, and involving student choice (Rule, 2006), in order to develop the competency levels of student Technical writing is "the process of making and sharing ideas and information in the workplace as well as the set of applications such as letters, emails, instructions, reports, proposals,

websites, and blogs that comprise the documents you write” (Tijerina, T. et al., 2019).

Specific to the context of ENG 131, “technical writing” pulls from this definition to refer to the collection of writing that students complete at the end of English 131, inclusive of a letter, a proposal, and descriptive writing.

Procedures Before the Intervention. Following approval from the system level CCCS Institutional Review Board (IRB), inclusive of approval for the study and approval of the consent forms (see Appendix C), consent forms were gathered on the first day of the term and stored on a thumb drive in digital form, and in a locked filing cabinet in the primary investigator’s office. Any questions or concerns of students will be addressed in an appropriate and professional manner. The students were given instruction on several elements prior to the start of data collection: students received direct instruction on reflection writing as outlined by Sparks-Langer and Colton (1991) and modified over time to fit the needs of my classroom and courses, and students received a short video instruction on problem-solving, group work, inquiry, and student choice, as well opportunities to practice each. These videos align with Muller (2008) and Muller et al.’s (2008) ideas about how to stimulate cognitive load by offering a misconception and then the correct concept. He found that presenting common *misconceptions* before presenting the correct concepts was instrumental in student understanding of a given concept when those concepts were presented in almost any new media format. In addition, we know that each of the associated activities are helpful for classes, but we do *not* how using them together with help them in their final projects.

This writing unit is the fourth unit in the sequence of ENG 131. The intent was that, by this time, students had some measure of buy-in, they will be oriented to the

course, including being able to find resources online and in the Learning Management System (LMS), and they will have some basic instruction in document design. Following the introductory unit and the unit on document design, students will be introduced to the unit, which functions as the curriculum for the authentic learning instructional methodology.

Sensitive student information will be handled in accordance with FERPA guidelines and the guidelines of the Institutional Review Board (IRB) of the Colorado Community College System (CCCS), including the use and maintenance of data and consent forms (See Appendix C). In addition to the any digital materials, the CCCS requires hard copies of interview transcripts, reflections, and any other data instrumentation to be kept for three years following the close of the study (Colorado Community College System, 2018).

Procedures During the Intervention. Students will be given an opportunity to practice each component of authentic learning, including the following:

Student choice. Student choice is practiced in the proposal that students develop for the final project, instructed by the video accompanying the assignment. See Appendix I: Proposal, and the image below from a screenshot of the video for student choice:

Inquiry. Inquiry is practiced in the “Finding Technical Documents” activity that students complete before the final project, instructed by the video accompanying the assignment. See Appendix J: Finding Technical Documents, and the image below from a screenshot of the video for inquiry:



Figure 3.1 *Making Choices Video Screenshot*



Figure 3.2 *Inquiry Video Screenshot*

Group Work. Group Work is practiced in the Peer Testing activity that students complete before the final project, instructed by the video accompanying the assignment. See Appendix K: Peer Testing, and the images below from a screenshot of the video for group work:

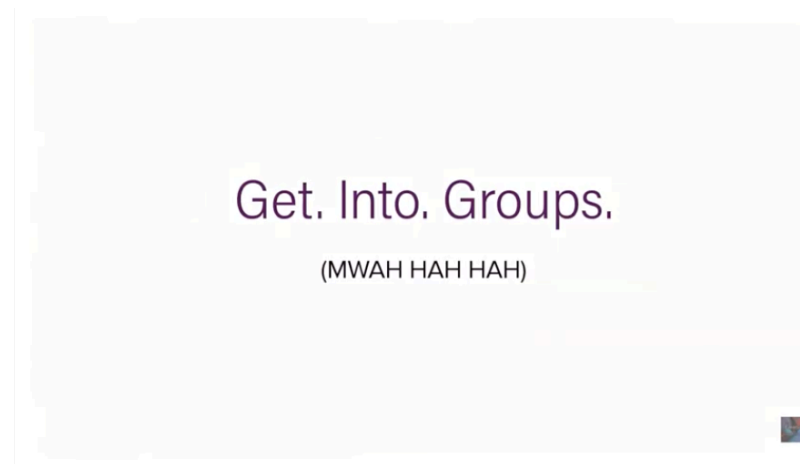


Figure 3.3 *Group Work Video Screenshots*

Problem solving. Problem Solving is reflected in the “Catchphrase” activity that students complete before the final project, instructed by the video accompanying the assignment. See Appendix L: Catchphrase, and the image below from a screenshot of the video for problem solving:



Figure 3.4 *Problem Solving Video Screenshot*

During the final stage of the intervention, students were given an assignment – the Final Game Guide – and they will be asked to use the types of skills developed in the preceding activities for this final project. The use of this game is predicated on the success within my last study in English 131 that found that games were effective at keeping students engaged during long term projects (Sternier-Neely & Medendorp, 2019). The purpose of this game within the context of the study is to integrate all of the facets of authentic learning into one single assignment that students use both as a learning opportunity and an assessment itself. The game uses the following competencies from the syllabus:

ENG 131 Competency One. Create documents that respond to audience, purpose, context, formatting, and technical genres for a variety of workplace situations.

Written Communication Competency Three.

- Develop Critical and Creative Thinking.
- Identify context.
- Present a position.

- Establish a conclusion indicated by the context that expresses a personal interpretation.

The practice round is described above, and the final assignment is as follows:

During the second stage of the intervention, students were given an assignment – the Final Game Guide – and they were asked to use the types of skills developed in the preceding activities for this final project. For this final project in this class, they will develop an idea for a new game in a genre of their choosing (board, card, mobile, roleplaying, etc.) with the end goal of pitching the idea to a potential investor in hopes of securing funding to have their game produced, marketed, and sold (See Appendix M: Final Game Instructions). They will use the four elements of authentic learning as practiced in the previous part, including inquiry, group work, student choice, and problem solving.

Materials/Equipment/Media:

- In order to assist students, each group can search a number of resources for assistance, including the instructor. However, in order to assist a group, they must have first exhausted searches in the textbook, the companion textbook website, and the LMS.
- *Technical Communication Fundamentals* (Powell, 2017)
- Authentic learning lectures on the Learning Management System

Instruments

Quantitative data was gathered based on elements of student competency, and disaggregated by race, ethnicity, sex, and gender, and these data were based on scores from already established rubrics for workplace writing that have been developed for the

course during the last curriculum redesign (See Appendix F: Workplace Writing Rubric). Three data sources were collected for the qualitative portion of this study: observations of discussion boards, reflections, semi-structured interviews, including an interview with the instructor of record, Liz. These are types of data that, according to Merriam and Tisdell (2016), are affirmed for use in qualitative portions of action research studies, though it is noted that quantitative tools can also be used in mixed methods action research. These tools, along with the analysis of rubric scores encompassed the total data collection tools and instruments used in this study. Data will be primarily collected by the researcher (Creswell & Creswell, 2018; Merriam & Tisdell, 2016), though the data comes from four main sources:

Observations of Discussion Boards

The observations in this study serve as a data point as an attempt to accurately describe the collaborative experiences in the classroom (Merriam & Tisdell, 2016). This is affirmed by Efron and Ravid (2013), who state that “the act of observation provides a powerful insight into the authentic life of schools and classroom” (p. 86). Furthermore, they offer some basic guidelines that quality observations should maintain:

- Inconspicuousness
- Organization
- Reflections (pp. 91-92)

Just as other methods, the intent is not to produce an objective description, but rather, to understand myself and my students through observations (Merriam & Tisdell, 2016; Efron & Ravid, 2013; Creswell & Creswell, 2018). These observations of discussions

will be taken after students have completed their collaborative process, and out of these observations came choices about who to interview.

In terms of the discussions as observational places, it should be noted that discussions have been around since the inception of e-learning (Harman & Kohang, 2005), and they continue to be places where students collaborate in an as of “yet to be fully realized either in a completely online or in a hybrid (a combination of online and face-to-face) instructional setting” (p. 69). I pulled from this idea that discussion boards are solid and tested spaces for students. That said, I looked for students’ comments regarding the discussions themselves. In other words, in addition to looking for evidence of problem solving and inquiry, for example, I also watched for comments about the use of discussion boards for collaborative work.

Reflections

Narrative reflections were conducted after the end of the intervention. In a study on how reflection affects deep learning, Young (2018) found that reflection contributed to student performance as well as perceived performance. Because improvement *through* reflection is not an intentional facet of this study, the reflections will follow an already established rubric based on Sparks-Langer and Colton’s (1991) three facets of reflection, inclusive of narrative reflection, evaluative reflection, and critical reflection. This rubric has been refined in my classroom over the past seven years, and I use it as a standard practice for all classes, though it is modified to suit the particular discipline in which I am teaching at a given moment (literature, creative writing, or technical writing) This fits with Creswell and Creswell’s (2018) guidelines regarding the sources or qualitative data. While there is “no consensus on effective strategies to teach and analyse [sic] reflection”

(Roberts, 2016, p. 21) students need “focused attention on all levels of the reflective spectrum through scaffolded experiences” (p. 22), and in the development of this rubric for reflection, I have offered specific and explicit direction using Sparks-Langer and Colton’s (1991) three facets of reflection. Additionally, Sparks-Langer and Colton (1991) state that “participants construct and reconstruct narrative plots to gain a deeper understanding of their experience” (p. 42). This narrative approach to reflective writing necessitates that students tell a story about their experiences and that they analyze and critically evaluate those experiences. The “story” will be told through the development of their reflective writing. A meta-cognitive aspect – Sparks-Langer and Colton’s (1991) critical facet – will ask students to consider how the process of reflection has contributed to their engagement and experiences in the class.

Semi-structured interviews

As a follow-up to the reflections and observations, I took a purposive sampling of two students (Etikan et al, 2015) to participate in a semi-structured interview at the end of the term. Criteria for this sample include those students who specifically raise a concern or discuss a positive event in their group. These functioned in a similar way as a student conference functions, with a discussion between myself and the student, and they were recorded. Merriam and Tisdell (2016) explain the effectiveness of types of questions to be asked during an interview, and they highlight a situated interview structure within particular philosophical paradigms. In this case, a “constructionist” (p. 112) type of interview can be most effective, for my aim in this development of the data collection, analysis, and interpretation is to construct a story of the experiences of students in my classroom (See Appendix E: Semi-Structured Interview Questions). While I followed the

interview questions when it was appropriate to do so, I also allowed the interviews to go in a natural direction.

As these questions are an attempt to further understand how students directed their learning, the social learning of students, and the problem-solving facet of authentic learning, these questions include open-ended questions, with the understanding that students can and should “raise and pursue issues that are related to the study but were not included when the interview questions were planned (Efron & Ravid, 2013, p. 98). See Appendix E: Semi-Structured Interview Questions.

I conducted and recorded these interviews using Zoom, and the recordings themselves were stored on a thumb drive and locked in my office. Additionally, I took notes during the interviews, and memos were written as soon as possible afterwards. Any records of the interviews (notes, audio recordings, etc.) were stored on a thumb drive, and written and digital records will be locked in my office for the requisite three years as directed by the CCCS IRB (2007). Interviews were conducted at a convenient time for students, and the interviews were transcribed immediately following the interview and analyzed directly after transcription. Upon finishing recording, I transcribed the interviews exactly as they were given, complete with filler words as outlined by Efron and Ravid (2013).

An alignment of data tools is contained in the table below, which explains the relationship between the research questions and the data collection instrument:

Table 3.1 *Research Question and Data Collection Tool Alignment*

Research question	Instrument	Purpose
1. After authentic learning experiences, what technical writing competency levels were attained by vocational education students in a first semester, technical writing classroom?	Scores on established rubrics	Quantitative evidence of the efficacy of authentic learning on course competencies. Confirmation or rejection of a relationship between authentic learning and course competencies.
1. How do students perceive the authentic learning experience in a first semester, technical writing classroom?	Observations of discussions boards, reflections, semi-structured interviews	Qualitative understanding the efficacy of authentic learning as it contributes to students' construction of knowledge and meaning.
A. How do students direct their learning in the authentic learning experience?	Observations of discussions boards, reflections, semi-structured interviews	Understanding of the "student directed" facet of authentic learning.
B. How do students interact as a group during the authentic learning experience?	Observations of discussions boards, semi-structured interviews	Understanding of the "social learning" facet of authentic learning.
C. How do students approach the problem-solving aspect of the authentic learning experience?	Reflections, semi-structured interviews	Understanding of the "problem solving" facet of authentic learning.

Data Analysis

Quantitative data was collected based on the rubric scores, and subsequently described using simple statistical methods, including averages of each criterium and of each student's score.

Qualitative data was analyzed through a dual cycle of coding, including in vivo coding (Saldaña, 2009) in the first cycle, in order to “understand the meaning of [participant] experiences as revealed in the story” (Merriam & Tisdell, 2016, p. 24), which were completed directly after data collection. In the second cycle of coding, pattern coding was used to determine categories (Saldaña, 2009). Finally, code weaving and headings and subheadings were used to focus the codes, categories, and themes (Saldaña, 2009). These data were coded manually. Boutet et al. (2017) affirm the use of “manual coding over automated coding because this type of procedure has the advantage that it permits human interpretation and enhances the ability to extract meaning from the data” (p. 3). Coding of each instrument follows:

Observations of Discussion Boards. Observations of discussion boards, including the content and the meta-data (time and date) was coded in the first cycle using in vivo coding through Delve software. It will be coded on the same day as the discussions are downloaded from the Learning Management System (LMS). In the second cycle of coding, observations were coded using pattern coding (Saldaña, 2009), in order to “identify an emergent theme, configuration, or explanation” (p. 152). After both coding cycles, analysis memos were written directly after the first cycle of coding, and after the second cycle, a reflective memo was written.

Reflections. Student reflections will be coded using in vivo coding as noted above (Saldaña, 2009) in the first cycle, and pattern coding in the second cycle, for the “development of major themes” (p. 152). Here, as well, analysis and reflective memos were written after each cycle, respectively.

Semi-Structured Interviews. These were the last set of data that will be coded, using in vivo coding in the first cycle in order to “enhance and deepen an...understanding of [participants’] cultures and worldviews” (p. 74), and pattern coding in order to make sense of the cohesive whole of students’ words.

Coding Process and Focusing Strategies

In order to process the data while it is still fresh, Merriam and Tisdell (2016), Efron and Ravid (2013) and Saldaña (2009) suggest the use of memo-writing just after the data has been coded. This is the process that I followed, writing several types of memos. Saldaña (2009) offers some insight into the actual writing process. He states, “I simply write what’s going through my mind, then determine what type of memo I’ve written to title it and thus later determine its place in the data corpus” (p. 33). He goes on to discuss the process of writing memos – how they should be written creatively, unencumbered by logic and evidence. This affirms my subjective stance towards the qualitative portion of the research, and it is, most certainly, a methodology that I can get on board with. After memo-writing, Saldaña explains, the memos themselves can be coded for data analysis as well. Finally, with data analysis complete, I weaved the codes together into a cohesive narrative, one that draws categories and themes. The words of the students appear in this narrative (Efron & Ravid, 2013). These categories and themes

will be labeled with headings and subheadings to gather the subjective pieces into a cohesive whole.

Triangulation of the Data

Both the quantitative scores and the qualitative codes, categories, and themes were examined to gather a holistic view of the participants' lived experiences, further affirming a convergent mixed methodology. Inferences from these data were then written to conclude the action research process (Merriam & Tisdell, 2016).

Rigor and Trustworthiness

Rigor, in traditional research is addressed through validity, reliability, and generalizability, though qualitative researchers point out the importance of credibility, transferability, dependability, and confirmability as more suitable criteria rather than the traditional reliability, validity, and generalizability (Merriam & Tisdell, 2016; Krefting, 1991). Creswell and Miller (2000) equate the term "validity" with "trustworthiness" and "credibility" (p. 124). In this study, validity is assured through the following elements

Peer debriefing. I work with a team of instructors, inclusive of another English faculty member and the director of assessment at CCC, and it has been my experience that we are always willing and able to provide support and confrontation about our ideas and methods. These instructors and I provided "support, play devil's advocate...and ask hard questions about methods and interpretation" for the qualitative data (Creswell & Miller, 2000, p. 129). Additionally, we conducted a norming session, and we will score rubrics to ensure rigor and trustworthiness (Creswell & Creswell, 2018; Creswell & Miller, 2000).

Thick, rich description. Creswell and Creswell (2018) describe thick, rich description as a way to communicate results through the researcher's "detailed descriptions...about a theme" (p. 200), with the result that the reader will experience results that are richer than without the description. In addition to the theoretical perspective, these descriptions are in line with what I teach my own students about how to describe and define settings and themes within the writing. These descriptions, then, offer an opportunity to provide holistic details for the reader, increasing validity in the research (Creswell & Creswell, 2018).

Researcher reflexivity. By disclosing, discussing, and addressing my biases in the section on positionality, and indeed, in the whole research process, I am contributing to researcher reflexivity, "whereby researchers report on their beliefs, values, and biases that may shape their inquiry" (Creswell & Miller, 2000, p. 127). In turn, this contributes to process validity.

Triangulation. Outcome validity is addressed through triangulation, a validation method in which researchers "search for convergence among multiple and different sources to form themes or categories in a study" (Creswell & Miller, 2000, p. 126). Multiple sources were collected to ensure that data is consistent, including data collected through observations of discussion boards, reflections, semi-structured interviews, and rubric scores (Creswell & Creswell, 2018; Merriam & Tisdell, 2016).

Member checking. This validity procedure is one in which data is "taken back to participants to review the findings" (Creswell & Miller, p. 127). Participants had the opportunity to see and comment on transcripts of interviews and on themes and codes for the qualitative research as a whole. This procedure addresses democratic validity.

Although generalizability is impossible in action research in the traditional sense (Fraenkel et al., 2015), this study has the potential to inform practitioners. In fact, the notion that practice *must* be situated in research has been challenged (Bryk, 2015), and Bryk has even flipped the evidence/practice binary stating that “practice-based evidence is an essential complement to findings from other forms of educational research” (p. 467). This action research study, situated in practice, insofar as it addresses those elements of validity as outlined by Creswell and Miller (2000) and uses the above elements, offers rigor in establishing trustworthiness. Replicating this study is possible, and my colleagues and I continue to maintain conversations about how to do that in ENG 131 and other English and literature classes.

Summary

The change from deficit thinking to valuing students’ literacies as expressed in authentic learning is expressed in the context of this study, and consequently, examined to determine the efficacy of authentic learning. More concretely, this chapter covered the research design and methods of the Dissertation in Practice (DiP), and it offered an overview of the DiP, a description of the research design and intervention, and a description of the participants. In addition, it included data collection measures and instruments, as well as the research procedure and methods for analyzing the data and a discussion of methods for ensuring validity and reliability.

The methodology expressed in this chapter is a product of that growth that I see in myself and in my classroom. Both the approach to the research, realized within an action research context, and the design of the research, a convergent mixed methodology as expressed by Creswell and Creswell (2000) illustrate the intersection of the personal and

the professional (Coffey et al., 2018), which are expressed in the proficiency of students' workplace writing (rubric scores) and the meaningfulness of students' lived experiences. The data gathered include the workplace writing itself, the scores on the associated rubric, observations during the authentic learning experience, reflections before and after the intervention, and semi-structured interviews of selected students. These data will be collected, analyzed, and merged in order to understand the construction of knowledge, inclusive of proficiency and meaning, of students participating in the intervention described within this chapter.

In order to validate the proficiency and meaningfulness, a number of approaches are taken, including triangulation of the qualitative data, member checks, and peer debriefing. Collectively, and through the collaboration of participants and members of the English department, we seek to provide a better experience for students and teachers of ENG 131 through the curriculum and through the instructional methodology.

CHAPTER 4

FINDINGS

Chapter four begins with a review of the problem of practice, the research questions, and the methodology. The qualitative and quantitative results are then examined, first separately, and then triangulated, in order to gather a holistic understanding of the results.

Problem of Practice

The problem of practice developed out of two major issues, the proficiency students have on technical writing competencies, and the addition of new competencies to technical communication I (ENG 131) in the Colorado Community College System (CCCS). Two years ago, ENG 131 was made equivalent to Freshman Composition I in terms of transferability (“gtPathways), which essentially means that students in technical writing courses must also be able to transfer their knowledge to academic contexts.

We addressed this issue formally and informally, and although we did find that game play is an effective way to potentially harness a co-construction of meaning (Stern-Neely & Medendorp, 2019), and within that construct, that “students who play can easily witness a transformation of their learning” (Barab, et al., 2012, p. 518), we also found that our curriculum and instruction did not result in any significant differences in competency and meaning, the implications of learning (Khalil & Elkhider, 2016). This study follows; it uses authentic learning, defined in this context as “meaningful situations that are extensions of the learner's world,” (Rule, 2006, p. 2). Authentic learning pursues

both competence and meaningfulness, and as those two elements were desired, the following research questions were developed, including the subquestions under research question two:

Research Questions

1. After authentic learning experiences, what technical writing competency levels were attained by vocational education students in a first semester, technical writing classroom?
2. How do students perceive the authentic learning experience in a first semester, technical writing classroom?
 - a. How do students direct their learning in the authentic learning experience?
 - b. How do students interact as a group during the authentic learning experience?
 - c. How do students approach the problem-solving aspect of the authentic learning experience?

Methodology

This convergent, mixed methods, action research study examined the effects of authentic learning on the competency levels of the workplace writing and the meaningfulness of authentic learning of vocational education students in a first semester, technical writing classroom. Convergent mixed methods research is, at its heart, an attempt to understand something holistically (Creswell & Creswell, 2018). Mixed methods research combines qualitative and quantitative data into a balancing act (Paton, 2002), that is, the experiences of students in my classroom. Collected together, they

answered the qualitative question, and the qualitative data and the quantitative data, analyzed separately, was then integrated into a cohesive whole – implications for the purpose of the study.

Changes in Procedure

As discussed in chapter three, I was not the instructor of record for the course in which I did this action research project. This was due to a number of things, including the effects of the COVID-19 pandemic and staffing requirements that necessitated another instructor being the instructor of record for this course. Additionally, the “observations” were of specific discussion boards rather than in class since the discussions themselves took place on the discussion board. Out of the 13 students originally enrolled, six did not finish the course, either due to dropping or withdrawing from the course, one did not complete the consent form, and the rest are included here. Finally, only two students out of seven students who passed the course were willing to be involved in the semi-structured interviews: Carrie and Ephram (pseudonyms). However, the instructor of record was willing and able to offer me an interview so that I could gather a more complete understanding of students’ experiences.

Data Analysis Results

The results and analysis that follow are both qualitative and quantitative. After examining the quantitative results, the qualitative results follow, and then the data is examined together for a holistic understanding of the results as a whole. This triangulation is a validation method in which researchers “search for convergence among multiple and different sources to form themes or categories in a study” (Creswell & Miller, 2000, p. 126).

Findings Related to Research Question One

Quantitative data were gathered from student rubric scores (see Appendix F). The rubric itself is modified from the American Association of Colleges and Universities' (AAC&U) Critical Thinking Value Rubric. From the fall of 2018 through the spring of 2019, CCC developed institutional level rubrics, and the director of assessment led this effort. She is also the instructor of record for the course being studied, and she was able to provide valuable insight into the historical development of institutional rubrics (L. Medendorp, personal communication, 16 July 2021). The English department, of which the director of assessment is a part, developed several rubrics, and the one included here became the course level rubric that fed into the department, division, and institutional assessments, respectively.

On this rubric, in particular, we are looking for the content, but in technical writing, the presentation is very important (Pfeiffer & Adkins, 2012), so 40% of the students' grade comes from those criteria. The rubric was normed to include the expository material (Content: Explanation), the students' opinions (Content: Student Perspective), the implications of the document (Content: Conclusion), the presentation of the document as it relates to the intended audience (Presentation: Format and Audience), and the formatting of the document as it relates to the purpose of the document (Presentation: Purpose). Ideally, students would have scored a 3 in all areas. In other words, scoring 3 or higher not only indicates a passing grade on the English 131 assessments; it also means that students are meeting expectations at department, division, and institutional levels due to the vertically aligned rubrics at each level. This particular

rubric was normed over time and integrated into English 131, and it was used to answer research question one:

After authentic learning experiences, what technical writing competency levels were attained by vocational education students in a first semester, technical writing classroom?

In attempting to answer this question, the following table shows the scores of each student as well as the mean for each criterium and the mean of each student across the criteria:

Table 4.1 *Student Raw Scores*

Pseu- donym	Content: Explanation	Content: Student Per- spective	Content: Conclusion	Presentation: Audience and Format	Presen- ation: Purpose	Mean
Tighe	4	4	4	3	4	3.8
Carrie	3	4	3	2	3	3
Reynold	3	3	3	4	4	3.4
Ephram	3	2	3	2	4	2.8
Moses	4	4	3	3	4	3.6
Joseph	4	4	3	4	4	3.8
Mean	3.5	3.5	3.17	3	3.83	3.4

Examining the mean scores for each student reveals that most of the students scored a 3 or above, and the mean scores for all students was 3.4. The one student who scored lower than 3 could have easily done better, I believe, though this was not evident until I spoke with Ephram in their interview. More on Ephram's experience will be discussed in the qualitative section.

The mean scores for each criterium are interesting to consider; students scored the lowest on their Audience and Format criterium, while they scored the highest on the Purpose criterium. Examining the students' artifacts reveals hints regarding why this

happened. Carrie, for example, created a product that is clear in purpose in its presentation, but it is lacking in formatting for a specific audience. This can be seen in the following images from Carrie's game design. In the first image, she clearly presents each section for a specific purpose.

This game will last approximately 30-45 min. There is a shorter option as well.

If you are competitive in a fun way this is the game for you.

Set Up:

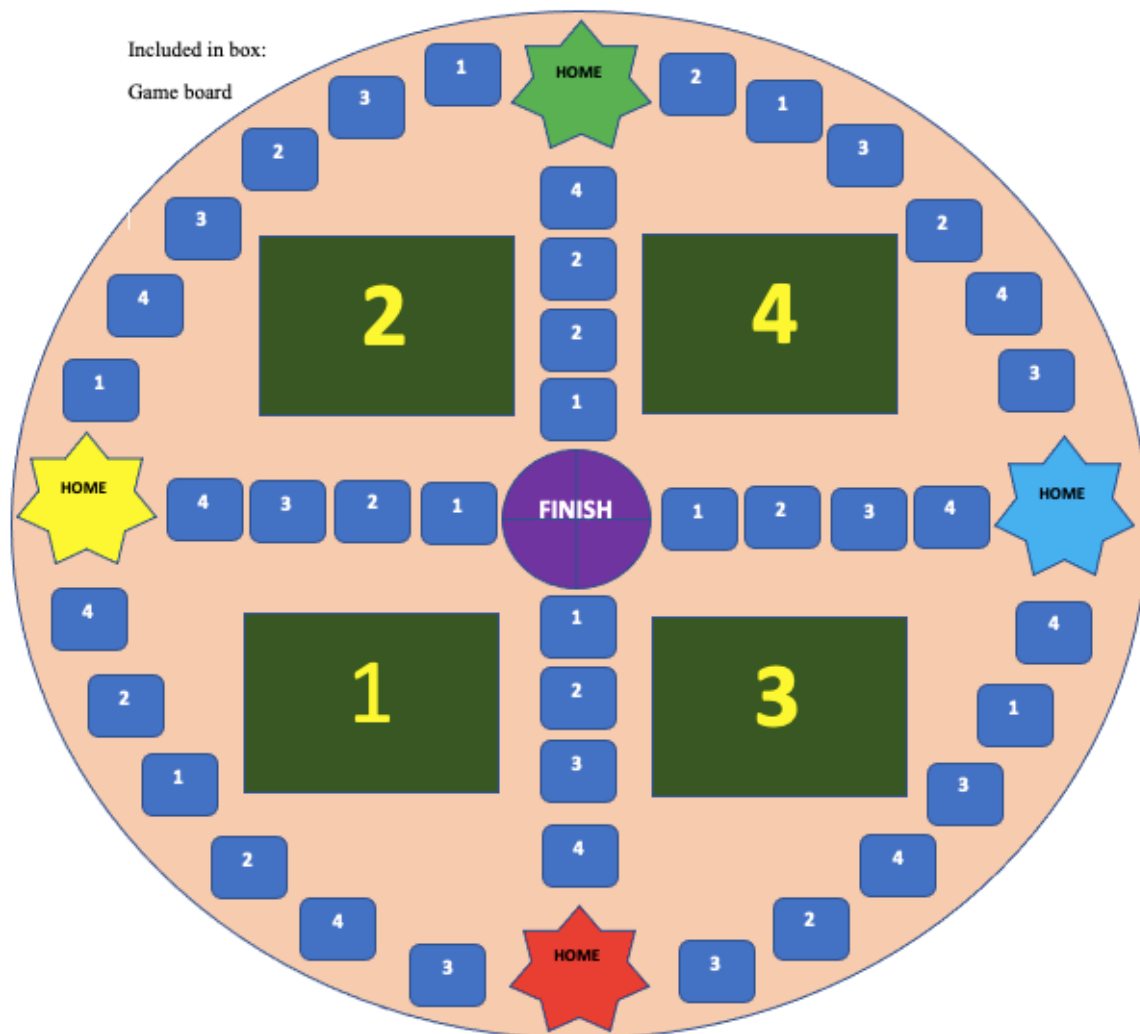
Lay out the board on a flat surface. Place the cards on their corresponding number spot on the board. Each player will choose a color.

To Begin:

Each player will roll the dice to see who goes first. The player that rolls the highest number will go first. Play will proceed clockwise.

Figure 4.1 *Carrie's Game Instructions*

She was clear and concise, and the purposes were clear. We debated giving Carrie a 3 or a 4, and while she "Conforms to applicable format for the intended purpose," (See Appendix F: Workplace Writing Rubric), this is not what we felt was "an attractive design," so she received a 3. In the next image, Carrie presents part of her game board. In this case, Carrie certainly put in effort. However, Carrie states that this game is for an audience of 8+. When we first looked at this, we thought that Carrie's game design was not presented in a way that meets the needs of the audience. However, her effort was clear, and she received a 2 on this criterium because her efforts resulted in a partial formatting for the intended audience. Per the assignment instructions, she should done one the following:



Dice: There are two die that have a dot on each of 6 sides representing the numbers one to six.

Figure 4.2 *Carrie's Game Board*

Audience & Market Value

Describe the demographic or core characteristics of the targeted audience for this game or community project (e.g. ages, skill level, interests, etc.), including the elements of the game or community project that make it marketable to these customers in the current consumer landscape—what, specifically, makes it appealing to this targeted audience? After determining this, use that information (along with the purpose of your game) to design your game guide. Remember to

include attractive elements, including headers and text markers, and keep in mind design rules, such as filling the space on the page with about 50% white space. Upon reflection and after going back through her proposal and game board, however, I think that her game design is not worth a 2; in fact, on the Audience criterium, she truly did target her audience, but not explicitly. A 3 or 4 would have been more appropriate. I thought that it would be prudent, at this point, to discuss this with Liz and to determine if this had any effect on her grade. It did not, but it is definitely important to consider this. Indeed, this brings up an important point about education in general: there just isn't the time to sit with the projects that we need. In truth, I do not know how to address this without collaboration; this will be further discussed in chapter 5.

In Ephram's case, the score reflected a lack of effort to identify the audience and to write to a specific audience. However, the audience can be inferred, to a degree, which is why he received a 2. The purpose of his game, however, was clearly, concisely, and creatively communicated, and it was solidly presented, as in the image below:



Introduction

In a time of endless war, a being that can only be comprehended as God tells every sentient species a tournament for anyone's wish to come true is being held, as the best of the best accumulate and the low of the low gather to win the tournament is the goal of everyone participating.

Figure 4.3 *Ephram's Introduction*

For the Purpose criterium, Ephram received a score of 4. Again, however, even though this is an attractive design, the instructions for the purpose are as follows:

Describe the inspiration for the game (where the idea came from) and explain the overall concept, theme, or story behind it, as well as the purpose of the game or community project (e.g. The purpose of this game is to escape within 60 minutes.). Use this section as an opportunity to grab your client's interest and get them excited about the game idea or community project you are proposing.

As I reconsider these instructions, it is clear that Ephram did not meet the criteria, which is similar to what happened with Carrie. In general, however, students did score higher on the Purpose criterium than the Audience criterium. This pattern can be seen in examining the individual scores, but also based on the means of the two columns. Presentation is as important as content in technical writing (Pfeiffer & Adkins, 2012); the scores should reflect that, and they simply do not. To be sure, the Conclusion criterium needs to be addressed as well, but this is not as urgent as the presentation criteria at this point.

The quantitative data presented here is encouraging, as it reflects mostly passing scores for each criterium, but it also reveals that effort must be applied to teaching more effectively, the implied skills within the Audience criterium. This is the first time I have truly noticed this phenomenon, and I was curious whether this was evident in previous semesters. Anecdotally, I can say that for at least the last two semesters, this appeared to be a criterium that was weak across the board, though I could not see it as clearly until examining the data for this particular study. This data gives a great deal to consider in terms of the implications of the data, which will be further discussed in chapter 5.

Profiles of Student and Teacher Participants

The following profiles are from the six students who passed the course. In total, there are two Latino males, two White males, one female, and one non-binary person. Each of these students, except Ephram, scored 3 or higher on the final rubric. Presented first are the students who wrote reflections and completed the discussion board that was used for observations. Presented next are the students who wrote reflections, participated in discussions, and with whom I conducted semi-structured interviews. Presented last is Liz, the instructor of record for the course and the Director of Assessment at CCC.

Tighe. Tighe is a white male in his early 20s who is a part-time student in fire science. He is currently a volunteer firefighter in Ciudad. His final grade in the course was an A.

Reynold. Reynold is a white, male, part-time student in Auto Technology. His final grade in the course was a B.

Moses. Moses is a Hispanic male in the Welding program at CCC. His final grade in the course was a B.

Joseph. Jacob is a Hispanic male in the Industrial Technology program. He attends full time, and his final grade was an A.

Carrie. Carrie, one of my interviewees, is a white female in her 40s, and a full-time student in the Health Information Technology program at Ciudad Community College (CCC). Carrie's final grade was a B. She is a very busy mom, student, and employee. Generally speaking, she is fairly quiet and succinct, and to speak with Carrie was similar to speaking with many of my own former tech-writing students. That is, she is diligent and her words speak less than her artifacts and reflections. She was very

involved with communicating on discussion boards, but her interview was less than I had hoped for, though I certainly did glean more about her experiences through that interview than I would have otherwise.

Ephram. Ephram, my other interviewee, is a white, non-binary person in their early 30s who is a part time student in Industrial Technology Maintenance. Their final grade in the course was a B. Chatting with Ephram was an absolute delight. Ephram, who prefers they/them pronouns, though they scored the lowest in the class on the rubric, was one of the most involved and charismatic students. One thing to note: this truly could have made a difference in Ephram's grade. If there had been a way to communicate Ephram's passion while these projects were in progress, my guess is that they would have been able to be redirected towards efforts that would have resulted in a higher grade.

Liz. Liz was the instructor of record and one of the three faculty members at CCC to teach ENG 131. She is also the Director of Assessment at CCC. After considering the discussions, reflections, and interviews, it felt like something was missing in order to help me understand what happened, holistically. I requested an interview with Liz, and she readily agreed. Liz and I are good friends and solid colleagues. She and I have worked together in previous studies (Sternier-Neely & Medendorp, 2019), and we have spent a great deal of time assisting and coaching each other to get at better teaching praxis. Her interview, like Ephram's and Carrie's, was done through Zoom, and she was candid and delightful to chat with.

Findings Related to Research Question 2

In order to answer research question two, *How do students perceive the authentic learning experience in a first semester, technical writing classroom?* Several sub-

questions were developed, which are aligned with the corresponding collection tool in chapter three. Although this structure was the intent, data saturation did not occur until discussions, reflections, and interviews were coded and categorized for each subquestion.

Because the questions and the data ended up being intermingled, it is prudent to discuss each subquestion, and then to discuss the themes that developed as I considered the data holistically, as Saldaña (2006) describes. He states that this is an appropriate choice: data should, indeed, be pulled apart and then put back together through coding and through the development of categories and themes.

How do students direct their learning in the authentic learning experience?

In general, students appreciated the opportunity to direct their learning. Joseph stated in his discussion that he felt a sense of freedom in being given choices. Likewise, Tighe thought that “inquiry-based work was fun,” but that he could have used some more direction, as the project he chose was a bit “simplistic.” As an example of this, the following image came from Tighe’s game:



Stunt planes: Designed as a good all-around aircraft that allows you to fly low and fast around obstacles



Jets: The fastest aircraft in the fleet. They do great at going fast, but struggle making maneuvers at the higher speeds so don't let that get away from you!



Passenger planes: The slowest airplane in the fleet, but allows you to get bonus points for completing levels

Figure 4.4 *Tighe’s Game Guide:*

It is possible that Tighe did not understand what the difference between student choice and inquiry were. Tighe did *not* choose an idea that was too simplistic, and with appropriate scaffolds, it is possible that Tighe would have been able to see that. His self-efficacy was not as high as I would like after doing a project like this, which would have been nice to address within the class. As an example of *his* writing, he produced the following:

Fly Through was designed as a skill-based game for everyone and all ages. The way we accomplished this was by creating a variable difficulty level system. The higher the level of flight, the harder the game gets. This allows everyone to have a good time without making the game too hard, too fast. You'll notice the backgrounds during the flights are based on real places across the world. During these flights you will have to navigate canyons, through cities and under bridges!

In this case, Tighe has descriptive writing targeted towards a specific audience for a specific course. The rest of his project is similar; it is certainly complex and rich.

Moses felt that the inquiry helped to “expand [his] creativity and imagination,” but Reynold did not enjoy the inquiry at all. He stated that he had a rough time picking a game design. All of the folx¹ above were present in discussion boards and the reflection,

¹In this case, I use the term “folx” as opposed to “folks” specifically as a way of signaling inclusion. The term is defined in the Cambridge English dictionary as “a way of writing ‘folks’ (= people) that emphasizes the fact that you intend the word to include all groups of people.”

and Ephram and Carrie offered input on data points as well as their interview. Ephra, stated that they enjoyed the actual search process, and they stated that “doing something you enjoy makes working on it much more fun to work on.” We discussed this at some length and they told me that some of what he is interested comes from an autism diagnosis. Ephram specifically wanted me to share that information, as he feels like it is not a limitation for him.

On the other hand, Carrie was not a fan of the inquiry process. She said that she understood the necessity of the process, but that it certainly wasn’t fun for her. I was curious about this aspect. I spoke with Liz, and we were able to make some sense of this. Liz stated:

For 131 specifically, I would say the more student directed choices we can offer the better. I think that's one of the reasons why envisioning this class with this game team has made it so much more successful over the past few semesters because it does give students sort of boundaries, but basically free reign within those rather large boundaries to just explore and play literally with, with their games.

She and I were in agreement about this. We discussed Carrie’s responses and we thought that giving Carrie more direction in terms of guiding the inquiry process might have helped. This could be accomplished simply by narrowing the inquiry process with scaffolds so that the students’ choices were not overwhelming. Certainly, this is an area that I can do better on, instructionally, and in chapter 5, I will discuss this further.

How do students interact as a group during the authentic learning experience? Students had *lots* of differing opinions about collaboration in the classroom.

Moses was adamant that “trying to debate and compare ideals through a laptop is kill[ing] the energy in a lively debate.” In a face-to-face classroom, it is absolutely easier to facilitate small group discussions, but in a post-CoVID-19 world, this is not a priority, and discussions must be online, at least partially. However, offering students the opportunity to discuss in class through Zoom *and* offering them the opportunity to participate asynchronously through discussion boards might help. This certainly would have begun to address Reynold’s concerns, including the fact that he was not a fan of discussion boards either. He stated that he “never enjoyed doing schoolwork or projects in groups or with other people,” and he went so far as to state that it hindered his process.

On the other hand, Ephram was positive about collaboration, especially on the discussion board. He said that the discussion board was useful, but that he is not a fan of them. He stated that the instructor gave “detailed responses,” which was a “nice change.” While this was great info, when I brought this up to them in our interview, our conversation drifted to how he spoke and interacted with others. Essentially, he spoke about his desire to code-switch, a phenomenon in which people shift between or among languages and dialects as they need to (Martin & Nakayama, 2018). Martin and Nakayama noted many distinct needs for this phenomenon, including using code-switching for emphasis, to set one apart, or even the opposite, to fit in. More about this is revealed in the section below discussing the themes. Carrie was more matter of fact, discussing *how* to collaborate and how she collaborates versus how the collaboration helped or didn’t help. Additionally, Carrie was not very vocal in her interview. However, Liz and I discussed group collaboration, and she reminded me that “they really rely on each other a lot and rely on looking at what others have posted” for examples. Indeed,

much of the praxis in this study is founded on theories of social constructivism, and French et al (2011) claims that group dynamics can replace individual practices as the group co-creates meaning regarding the material that they are learning.

How do students approach the problem-solving aspect of authentic learning?

Problem solving was probably the most dismissed aspect of authentic learning. I discuss this in the section below, but here, it should be noted that most of the comments (and there were only a few) about problem solving were barely evaluative at all. For example, Moses stated that he “didn’t have many problem-solving issues,” and Reynold stated that problem solving was the “*most* useful part,” though he did not elaborate on what his process was or how he used those skills.

Likewise, Tighe simply stated that he “didn’t have a whole lot of issues.” Ephram, too, gave a marginally reflective answer: “problem solving is always a useful skill to have, and I appreciate any chance to refine those skills.” Although we didn’t discuss this much, Liz and I did talk about problem solving. She referred to this skill when she stated “I feel like about the students who end up in technical writing. I think they’re much more practical, hands on, and want to, like, make it as meaningful in real world meaningful as possible.” Although I have observed the same and come to the same conclusions, I also see that my instruction with regards to problem-solving was inadequate. First of all, the project itself offered too many variables and too few scaffolds. In essence, an ill-structured problem was presented to students, and while the information was there to work out the solutions, I did not do enough scaffolding to make this as meaningful as it should have been. Ill-structured problems are those that have “multiple solution paths; and multiple criteria for evaluating solutions; [and] they are more difficult to solve”

(Jonassen, 2010, p. 3). Jonassen also states that ill-structured problems often require domain-specific problem-solving methods. This is a possible way to connect multiple literacies of students to the literacies in the writing classroom, to be specific. Jonassen (2011) reminds the reader that problems need to have appropriate cognitive scaffolds. While students did the problem solving, it lacked richness and creativity, and it could be due to the video lecture itself.

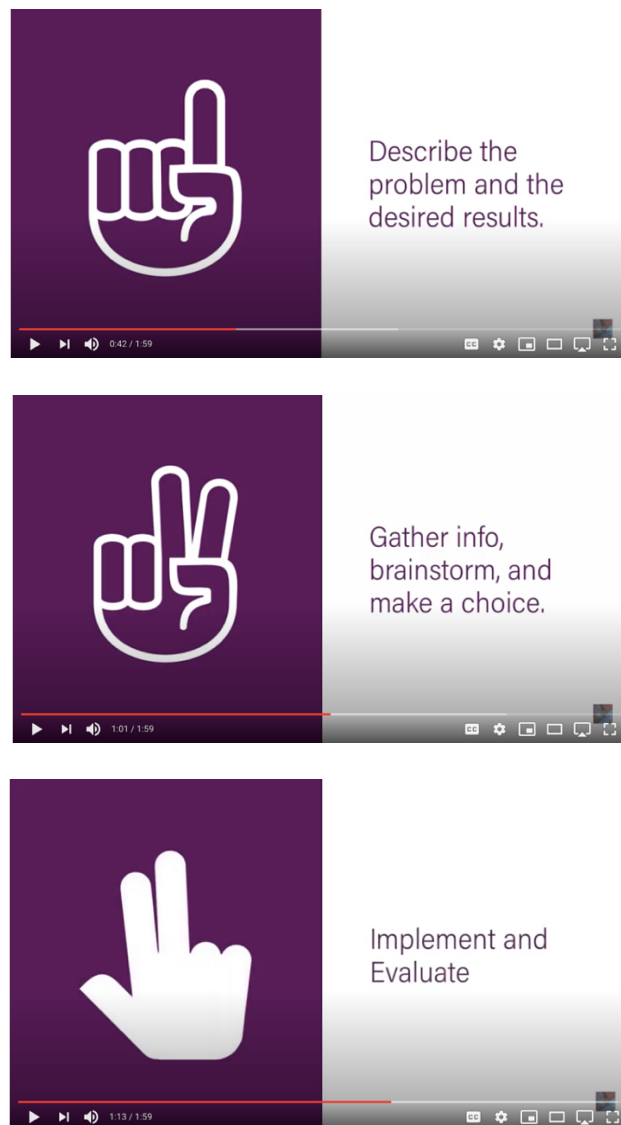


Figure 4.5 *Problem Solving Lecture Screenshots*

The data itself is certainly useful, but even more useful was when I began coding and categorizing in order to glean the themes present in this qualitative data. Those themes are presented in the following section.

Summary of Themes

Several themes emerged as I was analyzing the qualitative data. In attempting to answer the second research question, which addresses the meaningfulness of authentic learning, students described experiences that broadly fall into one of several overarching themes: frustration and contentment, the use of student choice, and the connection between in-school and out-of-school literacies. This last theme includes data on how the elements of the game contributed to their overall perceived technical writing competency. Contributing further to these themes is a discussion between the instructor of record and myself, and my own thoughts and reflections in each theme. As I describe these themes, I will note how each theme is connected to the sub-question that then answers the second research question.

Frustration and Contentment. This theme was derived from the descriptions of how students used group work, and how they describe that use within their discussion boards, their reflections, and the interviews that I conducted. It should be noted that online classes can be quite impersonal, but as I mentioned in chapter 3, I had anticipated the discussion board being a valuable resource, though I certainly wanted to pay attention to their thoughts. Ephram noted that discussions can be useful in their reflection, saying:

Discussions are definitely useful. I'm not a fan of them, I find it somewhat awkward, but I see their purpose. The feedback from our instructor has been super useful, it covers exactly what you missed or what you could have done better. I've

had some instructors give pretty vague feedback, it's a nice change to have detailed responses.

I noted this is my own reflections, and this has been a very difficult aspect to address in online instruction. Indeed, I did not mean for this class to be taken online, and it certainly did add an aspect of complexity to the course. When I spoke with the instructor of record, Liz, she had this to say that having other students for feedback is crucial, and that she has observed students being inspired by other students' work.

She went on to talk about how the primary discussions that take place between students happen on discussion boards, but the primary ways that students interact with instructors is through individual feedback. From my own perspective, this is what I see as well, but Ephram and others seem to desire that interaction on discussion boards between teachers and students as well as between peers.

Moses relayed his frustration with discussion boards as well, going so far as to describe debating and comparing ideas in a discussion board as being counterproductive to a discussion. However, not everyone was so disillusioned with discussion boards, and more broadly, with collaboration in general as a facet of authentic learning. Tighe, though the class was challenging for him, stated that "the feedback on assignments has helped a lot since most of the time I unfortunately feel lost in this class if I'm being honest."

Likewise, Joseph appreciated the discussions as well: "As a whole, I think the discussion group helped bring new ideas and input for the various assignments we were given. I liked being able to see everyone's ideas that eventually ended up inspiring some of my own."

Within the discussions, students had the opportunity to describe the different collaborative tools that they wanted to use in order to create the space and opportunity for group work. The prompt for that discussion included the following (See Appendix L)

Search online for collaboration tools or technologies that would help teams to work together on projects. Keep in mind the many different tasks teams might need to accomplish in order to collaborate successfully, such as communication, brainstorming, editing, revising, providing feedback or comments, coordinating schedules, etc.

In that space, what was said was just about as revealing as what was not said. At CCC, we use WebEx and WebEx Teams for collaboration among faculty and staff, and the intent and directive from the college's administration is that we use WebEx for collaboration between teachers and students as well. However, this tool was not brought up at all, and in fact, many other collaborative tools were discussed, including Facebook Workplace, Zoom, or, as Tighe stated, "something as ancient as Skype." In fact, Ephram stated that they needed to use tools that that already used in other settings. When I asked them to elaborate on this, they said, "Well it's frustrating, you know? Like they know we can use Zoom. We use it everywhere, but they can't use it here?" He used air quotes in the following sentence: "I don't get why school has to use 'educational tools.' We are designing a game. Just let use [stuff] we get." This allusion to the multiple literacies of students was reflected in many of the comments about what was accomplished in the classroom.

In fact, aside from the collaborative tools that students used in the classroom, students discussed and reflected on the types of inquiry that they were asked to do. In

short, the instruction about inquiry focused on the act of asking questions, as in the following screenshot from one of my video lectures:

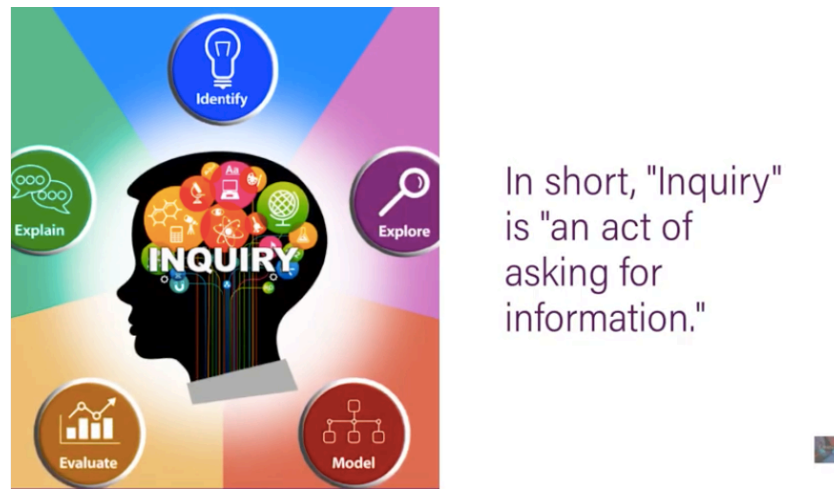


Figure 4.6 *Inquiry Lecture Screenshot*

Near universal praise for allowing students to investigate what they wanted to investigate was stated in student reflections. Carrie, a self-described “educational pessimist,” said that inquiry work was “not too bad,” and that she was “efficient when it comes to finding certain templates/documents to suit what [she] needed.” When I interviewed her, this was our exchange:

ME: You said in your reflection that the inquiry work was “not too bad.” Can you tell me more about that?

CARRIE: Well, just that, you know? It isn’t like I particularly enjoy going on a treasure hunt every time I have to learn something new, but I see the point.

ME: The point?

CARRIE: Yeah...yes. The point. Like it’s not fun, per se, but when I feel free to do whatever I want, I learn a lot more; like there’s more trial and error.

ME: Do you like that kind of experience?

CARRIE: I definitely do not. But again, I see the point.

Carrie and I laughed about this deadpan delivery, which helped us both to break the ice. She relayed to me that it was often hard to be completely honest with teachers because they “don’t like being told that their way isn’t working,” but that she appreciated the time I took to value her perspective. She also stated that this was the case within the classroom: “It’s like Liz was more my parent than my teacher. She helped me figure all the game stuff out. I am probably 30 years older than her, but that’s how I wish other teachers were.”

Other students also relayed their appreciation of inquiry. Joseph stated that “being given the option to search for our own tools and templates really gave me a sense of freedom and options to be creative with my assignments.” Likewise, in his reflection, Tighe said that “Inquiry based work was fun since it allowed me to see different views and ideas from others.” Finally, Ephram said that some of their favorite moments were in free inquiry. They said:

I enjoy searching for things online, I spend a lot of time hunting down 50-year-old research papers in my downtime, so I would like to think I've started to get pretty good at it. It was a fun addition for me.

I asked them what they meant by their statement. They said that research is a normal thing that they enjoy. I laughed and I said I understood that:

ME: I can spend hours digging into some sort of obscure topic.

EPHRAM: You autistic?

ME: What do you mean?

EPHRAM: It’s an autistic person thing to do focused and specific research.

ME: Hm...I didn't know that.

EPHRAM: I'm autistic.

ME: Is that relevant? Can I share that info in my study?

EPHRAM: I hope you do. We autistics are really good at finding stuff out.

ME: So people with autism...

EPHRAM: Autistic people. For me, being autistic is an identity...part of my identity. Please make sure you mention that.

ME: Will do. So Autistic people...

EPHRAM: We just wanna research, but we want to research what *we* want to research. Find a way to do that, and at least for me, I'm gravy.

For Ephram, being allowed to research an open-ended topic was freeing.

Likewise, for Joseph, it felt like “freedom to breathe.” He stated, “Being given the option to search for our own tools and templates really gave me a sense of freedom and options to be creative with my assignments.” This was, across the board, something that students appreciated: the ability to do what *they* wanted with their research and products.

The use of student choice. This theme and the theme prior certainly had some overlap. “Inquiry,” as I defined it in the students’ online lecture, is “An act of asking for information” (“Inquiry”), whereas the “student choice” aspect of authentic learning was meant to offer them an opportunity to take what they knew and use that in the classroom. That said, it did not always work out like that. As noted above, Tighe stated that he was glad that he was allowed to choose his own topic” Moses, however, stated that it was the aspects of student choice that helped him step out of his comfort zone. He stated, “Doing projects of my own such as the gameplay project or making your 36 hours plan has

helped me expand my creativity and imagination into creating new documents and gameplays in new and exciting ways.” Ephram was similar: “The freedom of choosing our own work was nice. It allows some variation, and creativity. And doing something you enjoy makes working on it much more fun to work on.” I asked them to elaborate on this topic in my interview with them. This turned into a very interesting conversation.

EPHRAM: It’s like what I was saying before, you know?

ME: With, like, giving you freedom to research?

EPHRAM: Right, but there’s a trick to it.

ME: A trick? How so?

EPHRAM: There was this one kid always bitching about...can I say bitching?

ME: You can say bitching.

EPHRAM: You a’ight, Neely. That’s what I am talking about. Why can’t I talk like my normal self in class or on discussion boards or something?

ME: Is that important to you?

EPHRAM: I mean, I get I gotta speak all straight and white...I mean I know I’m white, but I didn’t grow up talkin’ like that, you know?

ME: So you are saying you want to...

EPHRAM: Just be myself. And in classes, I feel like I am always hiding a piece of that. You feel me?

ME, after a longer pause: I think I do. I identify as genderqueer.

EPHRAM: Damn, I knew it.

Our conversation flowed easily after that, and we talked about the ways in which code-switching works and how those things can be accessed in the classroom. For Ephram,

student choice seemed to be much more about their own identity rather than choosing what to do in the classroom. We parted ways, agreeing to grab a cup of coffee and look at the interview transcript together. Unfortunately, this didn't happen exactly as planned, due to the COVID-19 Delta variant progressing in the community, so we shared a conversation on the phone. Ephram specifically asked me to communicate with my audience that conversations like this were important to "people like me." "Non-binary folx?" I asked. "Well, yeah, but even more basic, [I mean] students," he said. "Just people in general, I guess."

Reynold and Joseph were less than enthusiastic about having the freedom to choose: Reynold said that he struggled with choices. He said that he is "used to being told what my projects should be about/based on, so it is a change to have so much freedom in what projects should be." Likewise, Joseph stated that he also "had a slightly challenging time trying to pick a game design. I wanted something simple but that represented my interests." These contradictions were tough to process, as on the one hand, choice was working for some students and not working for others. Carrie, for example, was not a fan of the game design, but she did see how an external element that they already understood was helpful, even if the game design "wasn't something [she] would have chosen."

To make sense of this further, I discussed what Liz thought would be helpful to take away from the larger conversation. She stated that we should be offering

basically free reign within those rather large boundaries to just explore and play literally with, with their games. And I think that again, even though some students may not be super into it off the bat at the beginning, I think that it gives them that

extra creative element that a lot of times they don't expect to get from a technical writing class.

My own experiences regarding this perspective is similar, but I have also seen students get very overwhelmed. Liz and I discussed what to do in those cases. What happens when a student wants to do a flashy project, but the skills are beyond them? Liz said that we can offer them one-on-one tutorials or a bank of tutorials that we can build. She said, “Whether it's just like a quick tutorial, I'm like, hey, here's a quick and dirty way to edit graphics or something along the lines. I think would be a really great way to help round out what they learned from 131.” The biggest takeaway, we agreed, was that scaffolding the creativity and the skills they needed to be creative in their projects is key in the future.

The connection between in-school and out-of-school literacies. This theme is further divided into two sub-themes: problem solving as an out of school literacy and life connections as a bridge between literacies.

Problem solving. Students had a great deal to say about how the elements of authentic learning connected to their lives, and first in this theme is the idea that students must solve ill-structured and well-structured problems, in the manner of Jonassen (2011) in this project: that is, some issues have multiple paths and multiple solutions, while others have precise answers. Students needed to solve a particular problem, that there was a need for a particular marketable game, and that, after the development of a proposal for that need, students needed to develop the full product. However, as a process, this aspect of authentic learning was almost a non-issue for students. As noted above, Jonassen makes clear the need for cognitive scaffolds, which I did not provide, and therefore, students didn't use. Instead, they were very vocal in terms of their metacognition. For

example, Moses stated that he “didn't have many problems solving issues except just trying to understand the assignment at first.” Likewise, Tighe stated that he

Didn't have a whole lot of issues with the problem-solving aspect. I'd say that it's nice that the instructor is prompt with responses in emails and willing to give feedback when requested. Everything else that I had issues with on MS word was easily found through google.

Other students were appreciative, but unconcerned. Reynold stated that problem solving was useful for him, and he always needs “practice and tips for determining audiences and a bit of document revision,” and Ephram echoed this, saying that “problem solving is always a useful skill to have, and I appreciate any chance to refine those skills.” Speaking to Liz was helpful in understanding this aspect.

ME: What are your thoughts about this class? Do you see...does this kind of stuff like them talking about [problem solving]...do you see that as helpful? Did you see that reflected at all in there in the work that they did?

LIZ: Yeah, I'd say especially I think it helps a lot that every week they had to do some sort of a reading response that addressed that. Specifically, ask them, how does this connect to your real life if at all right? So, kind of consistently bringing that up as a theme throughout the semester, I think was especially helpful in particular because for whatever reason, this semester, I had a lot of students who are already working in jobs that directly are relevant to what we taught class, whether it's in their actual chosen career field, or it's just they kind of realized. Oh, wow. I thought I was just writing an email because I'm in in the office, but it actually does there's a lot more to think about when it comes to that.

ME: Do you mean in general?

LIZ: I would say that in addition to how it connects to their real life, the students, this semester and most semesters that I've done this class, especially because it's fully online, they really rely on each other a lot and rely on looking at what others have posted and what other people are working on for their projects as sort of inspiration to know if that's just because of the nature of a fully online class.

ME: I see how that's important in their lives. They already know how, in many cases.

LIZ: I feel like about the students who end up in technical writing. I think they're much more practical, hands on, and want to, like, make it as meaningful in real world meaningful as possible, I would say and yeah, I would agree that for whatever reason that just lends for this class. At least it lends very well to that sort of collaborative feedback. And also, I feel like they're less afraid to make mistakes, which is really, really valuable.

Some of this is certainly due to the fact that the project (and consequently, most of the course) was embedded in authentic learning, but more generally, Liz and I have been working to make this a meaningful course. We have known for a long time that it was not connecting with students, so we have gathered an enormous amount of “practice-based evidence” (Bryk, 2015, p. 467) to continue the action research cycle. This iteration of the cycle, that is, this study, furthered those efforts with authentic learning in particular, and the course was designed instructionally to keep authentic learning in the front of our minds.

Life connections as a bridge between literacies. This sub theme was written about in student reflections extensively. Joseph, for example, said that the course helped him at work almost immediately. He said:

I am a trainer at my job so I must do my best to make sure new hires get the right information, in a clear way so they can have a smooth transition into the job. I have learned to be clear and concise in the way I present information to my team as well as learned how to effectively understand my audience.

Likewise, Moses discussed writing to his audience: “One thing that really opened my eyes about this class was obtaining a perspective on how different types of correspondence, presentations, documents, game design can appear different to multiple people.” In this case, Moses has taken his own multiple literacies regarding the elements that he connected with in the class, and he is considering his audience, which meets the course standards, but also contains elements of problem solving and collaboration.

Kinloch et al. (2017) claimed that through the use of “unconventional” learning experiences, students are more empowered to challenge their thinking. These unconventional learning experiences, and consequently, his use of, essentially, rhetorical structure (audience, purpose, and tone), has the potential to build his self-efficacy (Martinez & Montaña, 2016), which can be seen in his confident reflection above.

Tighe even empathized with technical writers in general, saying “this class has helped me understand and have a greater appreciation for those that do things like writing proposals for a living since it’s not the easiest thing in the world for me.” Ephram discussed how this particular course helped them in other classes. They said:

It's done me some good in my other classes, especially in the paper I'm writing as my final project for a COM class. The knowledge of audience types and the idea of writing for each type differently has been a useful tool.

As we discussed this in our interview, I asked them to speak more about this. They said that they might not have noticed in but for the reflections that were completed in class.

EPHRAM: Honestly, as much as it sucked, the reflections were good for me.

ME: How so?

EPHRAM: Because we had to do them so often, I got to thinking how my choices on projects would come out in future writings and reflections, you know?

ME: Yeah, yeah.

EPHRAM: Having to cycle back to that at the end of every unit made me think more carefully about choices in the future.

ME: So how does that connect to your COM class or other things outside of 131?

EPHRAM: Well, that's what I mean, Neely. It got me thinking about my choices. For 131, for COM. Hell, I was thinking about how to speak to a drive through worker.

ME: I think you hit on why teachers ask for more formal speech in class.

EPHRAM: Yeah, but they don't ask me for *all* my speech, feel me?

For Ephram, like others, reflecting was the difference between noticing and not noticing their positionality with reference to their audiences. Pointing it out was the key. Ephram also made connections about the use of multiple literacies in the above exchange. Ephram felt like if they could be asked to speak in a certain way, that they should be

allowed to ask to speak in their ways as well: that is, they should be using their out of school literacies in school.

Triangulation

Overall, I found that the qualitative data did support the quantitative data, and that facets of authentic learning, combined with processes such as reflections to consider those facets, can lead to increased competency and meaningfulness, which are the implications of learning, according to Khalil and Elkhider (2016).

Summary

In this chapter, I covered the findings associated with this study. I relayed and analyzed the quantitative data followed by the qualitative data. I discussed the themes evident in the qualitative data, followed by a discussion of all the data together. Chapter 5 follows, wherein I discuss the implications of these findings.

CHAPTER 5

IMPLICATIONS AND RECOMMENDATIONS

On the east side of Ciudad, Colorado, near a neighborhood locally referred to as “The Dogpatch,” sits another school: Beautiful Village Elementary (BVE, pseudonym). In the time it has taken me to develop this study, this school has been chartered, built, and staffed in accordance with the rich educational experiences of students in mind. With no bus and no free and reduced lunch, however, students living near BVE must attend Baca elementary, where programmed instruction is the name of the game. At Baca, they get rote memorization. At BVE, field trips to the university. It is a deficit mindset, followed by the programmatic curriculum and instruction of a social efficiency-focused school (Schiro, 2013) that funnels students into a track best suited for kids with working parents or parents who can afford to send lunches with their children. Ciudad now has a pipeline from kindergarten through college that will widen the achievement gaps that can be seen among schools in Ciudad.

Flipping that deficit mindset has not been easy, but at the two-year college level, I have found it to be worthwhile. When students pass through the doors of my classroom, my goal is to see them as already having brought important literacies to the classroom. In fact, with the advent of ENG 131 as a guaranteed transfer course, I can do nothing else. There is simply not enough time built into the term to divide competencies into discrete tasks. Instead, this study examines what happened when I took a number of these competencies and applied authentic learning as explained by Rule (2006) in order to

assist students in passing this course and to assist them in developing meaningfulness alongside of that journey into becoming proficient at those competencies. Students must connect their learning to something *else* in their lives for learning to be meaningful; Khalil and Elkhider (2016) call this “deep learning” (p. 147). Coffey et al (2018) describe meaningfulness in the context of “meaningful engagement”: the “consistent, thoughtful consideration of the life and learning experiences of students, as well as the norms and expectations of conduct...of the educational institution” (pp. 15-16), that is, student competency.

Research Design

This mixed methods study used action research to step into the study and back out again, particularly given the action research cycle of “plan, act, observe, effect (Merriam & Tisdell, 2016, p. 235). The qualitative question is addressed at the same time as the quantitative question in order to “see if the findings confirm or disconfirm each other” (Creswell & Creswell, 2018, p. 217). Quantitative data were analyzed, followed by qualitative data, and I used triangulated data sources in a qualitative framework. The data sources were then converged and analyzed together to glean a holistic understanding of students in the classroom. The following research questions and sub-questions were considered:

Research Questions

1. After authentic learning experiences, what technical writing competency levels were attained by vocational education students in a first semester, technical writing classroom?

2. How do students perceive the authentic learning experience in a first semester, technical writing classroom?
 - a. How do students direct their learning in the authentic learning experience?
 - b. How do students interact as a group during the authentic learning experience?
 - c. How do students approach the problem-solving aspect of the authentic learning experience?

Chapter Overview

Chapter five includes the implications for practice and research, my own reflection, including limitations, and finally, a brief summary.

Summary of the Findings

In order to answer the first research question, I scored students on a workplace writing rubric to assess their competency in a game-based project that integrates student literacies with course competencies. I analyzed the data and determined that each student scored either 3 or above on their rubric. I also calculated mean scores for each category.

In order to answer the second research question, I observed and analyzed students' discussion board posts, as well as student reflections and interviews with two students and the instructor of record. I found that the perceptions of students were, in general, that facets of authentic learning were meaningful, that the instruction of those facets needs adjustment, and that metacognition through reflection is a useful way to help students consider those facets and their meaningfulness. I concluded that authentic

learning could lead to competency and meaningfulness, which are the implications of learning (Khalil & Elkhider, 2016).

As the semester started, the instructor of record and I recognized that we were going into the term with the intention that we should not be thinking about what students' lack. Certainly, theorists such as Bobbitt (1918) claim that vocational programs are designed to address a deficit in skills, and for the most part, that has been the case with ENG 131. However, educators like Gorski (2012) and Osorio (2018) claim that we can humanize our students by meeting them where they are – or rather meet them where they can bring their literacies to the classroom. Rule (2016), in the context of authentic learning, provides a counter-narrative to deficit thinking through the use of authentic learning. McCabe and Newhouse (2014) note that “before [a student] begin[s their] education, they are already behind” (p. 4). This was certainly my viewpoint before considering that there was another perspective that could account for deficits. Indeed, it is difficult to develop oneself into an educator not defined by behavioral changes in students in the manner of behaviorism (Skinner, 1953). As it turns out, there is a great deal that contributes to a student's learning in my technical writing classrooms outside of the behavioral changes that a social efficiency doctrine provides. In the back of my mind, I thought that much of this would be connected to students' careers, but it was much more connected to the ways that students view their contributions to learning rather than the change in behavior itself. An example of this is seen in Ephram's interview, when they remarked about the reflections themselves as a pathway to learning. Ephram said, “because we had to do [reflections] so often, I got to thinking how my choices on projects would come out in future writings and reflections.” Ephram got to anticipating what was

going to be asked of them, and they started to look for those things in the next assignment.

Likewise, Giroux (2014) notes that educators need to enable students to engage in multiple literacies, and students began to see things in this way themselves. Tighe stated, “we are designing a game. Just let use [stuff] we get.” This allusion to the multiple literacies of students was reflected in many of the comments about what was accomplished in the classroom. These literacies empower students to think critically as they interact with learning experiences and as they extend that learning to outside-the-classroom experiences. Osorio (2018), who states that the use of student literacies is “a mutual humanization pedagogical approach can be described as a process that welcomes shared ownership between the educator and students in problem-posing education where students become coinvestigators rather than simply the receivers of information” (p. 7). This “shared ownership” is key: the literacies that they bring to the classroom literally already belong to students.

Throughout the study, I was delighted to see that meaningfulness as well as competency were interwoven throughout. Cox et al. (2009) noted that student inquiry that uses workplace writing can be more meaningful than academic writing. As I considered this take on student inquiry, I had some difficulty reconciling the comments of students with the research on facets of authentic learning, particularly within problem solving. This is, as far as I can see, a shortcoming of my own rather than a shortcoming of the design of the study. I had wanted the problem-solving aspect to encompass social justice through the development of projects that created change in the community. In truth, I was stuck on this aspect for a long time. As I dug into Freire’s (1970) *Pedagogy of the*

Oppressed, and as I specifically reflected on his “banking model” and his commission to increase the critical consciousness (conscientização) of students through problematizing the classroom, I realized that developing the proposal and the game were problematization. Alvesson and Sandberg (2011) state that problematization is for attempting to “disrupt the reproduction and continuation of an institutionalized line of reasoning” (p. 252). Coffey et al. (2018), however, discuss the importance of intersecting the institution’s goals and student literacies. I have seen the importance of this intersection as well. Finally, Freire makes the claim that problematizing education cannot serve the interests of the oppressor. In the future, then, my goal is to problematize this assignment in a bigger way; Through considering my students’ literacies, and considering the needs of the institution, an important component in curriculum design (Oliva & Gordon, 2013), I can both “disrupt...an institutional line of thinking” *and* meet course competencies. Certainly, I recognize that this needs work, which will be reflected in my action plan.

Writing to different audiences was also something that had mixed reactions from my students. Moses stated, “one thing that really opened my eyes about this class was obtaining a perspective on how different types of correspondence, presentations, documents, game design can appear different to multiple people.” In a typical classroom, the “audience” of a paper is often the students’ peers or instructor. Williams et al. (2013) noted that a difference exists between “addressing” an audience and “invoking” an audience (p. 248). Tighe also noted this responsibility, saying that “this class has helped me understand and have a greater appreciation for those that do things like writing proposals for a living since it’s not the easiest thing in the world for me.”

From the findings and based on the connections between the literature and the current study, three things should be noted: first, that students often used ideas about student choice and inquiry interchangeably. Second, problem solving was seen as something that was already known or as something uninteresting or both. Third, reflections as a way to express metacognition was key in considering students' perceptions that led to developing a sense of meaningfulness.

Action Plan

Similar to a cyclical curriculum development cycle in the manner of Taba (Oliva & Gordon, 2013), action research is a cycle, and it is one in which a researcher-practitioner can enter into at any point. Indeed, my own entrance into this study has long been within the action research cycle. The action research cycle uses an “ongoing cycle of plan, act, observe, reflect” (Merriam & Tisdell, 2016, p. 235), and the planning for this study began well in front of the pages here. As we finished our curriculum redesign (Sternier-Neely & Medendorp, 2019), and as we reflected on the results, we determined that a second study was necessary that accounted for the deficit mindset that we had been stuck in. With that realization, this study's planning phase was born.

The purpose of this study was to see if authentic learning had any effect on the competency levels and the meaningfulness of students in English 131. Certainly, I was pleased to find that each student did very well on their assignments, and I was pleased to find they found meaningfulness in the classroom through authentic learning. However, continuing the discussion of the data here means that an action plan must account for the three caveats above, regarding student choice and inquiry, problem-solving, and student reflections. With that in mind, the following is my action plan for this study:

Table 5.1 *Action Plan*

Date	Activities	Rationale
Fall 2021	Implement a similar structure as in Summer 2021, modifying it to meet in-class needs; address focused efforts in problem-solving, student inquiry, and student choice; continue to use reflections with fidelity.	Taking results from this study, these are the foci that I need to develop.
Fall 2021	Study and reflect on the integration of cognitive load theory and develop a plan for the inclusion of this theory in future iterations of ENG 131.	This specifically addresses the frustration levels of students.
October 2021	Study and write curricula that includes problem-posing as a fundamental aspect.	Problem posing and solving must be better developed than in this study. This aspect must be intentional in nature.
November 2021	Confer with ENG 131 faculty to design learning experiences that better teach how to use problem-solving, student choice, and student inquiry.	This follows from the cell above and from the study as a whole.
December 2021	Conduct interviews and reflections to understand students' experiences with the above.	This continues the action research cycle in a manner consistent with this study.
December 2021	Design Spring 2022 curriculum to match results from December.	This step also continues the action research cycle.
March 2021	Facilitate a round-table discussion regarding discussion board best practices at the Spring 2022 Colorado Association for Developmental Education.	This addresses shortcomings in my discussion board practices.
Spring 2021	Integrate results and curriculum with efforts to implement a sense of multiculturalism in accordance with the sensibilities and goals of the institution.	This intersects the study and the curriculum for ENG 131 in a deliberate way so that Coffey et al.'s (2018) personal and professional can be met.
Summer 2021	Develop a better personal system for grading, where I can ruminate for a time on student work.	This step is meant to address my own shortcomings regarding assessment.

The steps above have the potential to not only make the experience for students in ENG 131 more robust and meaningful, but the efforts in this study also have implications for our department, division, and college. In the sections that follow, the implications for classroom practice and for continued research are discussed.

Implications for Classroom Practice

As I noted above, the implications for classroom practice are broad. These include instructional changes as well as curricular changes, and can be discussed alongside of the themes that were present in this study, including frustration and contentment, the use of student choice, and the connection between in-school and out-of-school literacies.

Frustration and contentment

My goal underneath this theme is to decrease their frustration and to increase their contentment. Several theoretical frameworks exist to address this specific theme, but as I reflect on frustration and contentment, cognitive load theory comes to mind. Specifically, a high level of germane cognitive load means that students have “engage[d] in deep cognitive processing such as mentally organizing the material and relating it to prior knowledge” (DeLeeuw & Mayer, 2008, p. 223). This would indicate that low intrinsic and extrinsic cognitive loads and *high* germane cognitive load are necessary. Intrinsic cognitive load occurs when simultaneous problem solving must be done in order to address the issue, and extrinsic cognitive load occurs when there is too *much* stimuli in the learner’s immediate space (Paas & Sweller, 2014). Paas and Sweller also note that increasing germane cognitive load, which has to do with working memory, can do a great deal to engage learners – and it does not inherently cause an increase in extrinsic cognitive load. Additionally, Muller, et al. (2008) found that specifically targeting

germane cognitive load through video dialogs that presented misconceptions were effective at increasing scores on post-test measures of competency in a specific scientific concept. In this study, social constructivism played a large role in working out students' thinking, but this also seemed to be somewhat distracting to students. Muller, et al. found that vicarious learning experiences, such as the dialogs described above, can decrease the observer's mental load. Further, in the context of social constructivism, this can have the same effect as activating prior knowledge, since "observing a way of thinking must come before internalizing it" (p. 282). As a more specific goal, then, my aim is to decrease the elements that are possibly distractable. At this point, I can see myself targeting skills more specifically (such as problem solving, which will be discussed later), focusing more deeply on single concepts within authentic learning and guiding students to how that can transfer to in-class literacies, and aligning my curriculum in online courses with multimedia and instructional technology theory. It is for this reason that in my action plan I explain that among other things, this fall is dedicated to developing a sense of competence within cognitive load theory.

The second major undertaking within this theme is to do *something* about the discussion boards. I have observed engaged students and disengaged students, and this is definitely something that needs to be addressed. Covelli (2017) notes that "many online classrooms fail to effectively use the [discussion] board to encourage social interaction and learning" (p. 139). This is certainly a flaw in my own teaching, and it is something that I can address. Distilling Covelli's recommendations to a few sentences is impossible, but she notes that the underlying principle here is to collaborate with other faculty, administration, *and* students. She states, "facilitating roundtable discussions would assist

a particular institution to dialogue on what has been successful and not successful in the online classroom” (p. 143). In my action plan, I note that I will be facilitating such a discussion at a spring conference.² With the results from that conference, I can better include changes to that piece of instructional design. This would be ideal for me and for others as we can make efforts to continue this collaboration long after the conference is over.

The Use of Student Choice

Two implications exist for this particular theme: distinguishing between choice and inquiry, and scaffolding those choices. In the first case, students often confused the difference between student choice and student inquiry. As I noted in chapter 4, “inquiry” is “an act of asking for information” (“Inquiry”). Discussing the effects of inquiry in this study is almost an impossible task, for often, when students said something about inquiry, they often meant “student choice.” Similar to researching and implementing problem-solving at more effective levels is the task of developing a sense of competence within inquiry itself. The implications, then, would indicate that it is prudent to develop the scaffolds to support the process of inquiry as well as the process of making decisions and

² I will submit to the Colorado Association for Developmental Education’s Spring 2022 conference. As a past president of the organization, I am a stakeholder in the association’s decisions, and this discussion has the potential to be good for college-level and developmental level students alike.

choices so that students can be better informed on those final projects. I note in my action plan above, November 2021 is dedicated to these tasks.

One final thing should be noted about the theme. Students often either enjoyed pursuing a choice that they made or they truly did not like it. One way to address this is within the scaffolds described above. I have observed the same phenomenon within other classes, and I addressed it through a number of things. I categorized the choices that students had so that they could think about bigger choices first and nuanced choices later, and I have opened the invitation for students to not have a choice at all (though this was not entirely useful). It is for this reason that I will collaborate with my English 131 faculty to design learning experiences that better teach how to make choices for projects.

Life Connections as a Bridge between Literacies

I have noted above, already, how I intend to address problem-solving tasks underneath this theme, but I do want to especially note one thing: as I reflect on it, it occurs to me that there are many, many ways to teach problem-solving. I remember that as an undergraduate, problem-solving was the focus of my student teaching portfolio. Everything that semester was focused on problem-solving, from the first day when my second graders enter the classroom and they were asked to determine how much money was in a change purse without any additional information to the unit itself, this could be an exciting prospect within English 131 as well. In fact, while I could address all four factors of authentic learning, it would be especially interesting to have them begin problem-solving on the first day of class. In October 2021, I intend on researching and developing the curriculum to meet my students' needs regarding problem-solving skills.

This last sub theme is probably the one that is the most exciting to me. It addresses multiple literacies specifically, including developing a sense of competence with audience and purpose, and this was surprising to me. My own understanding of my students' literacy was only extended to the recreational or vocational things that students already had competence with. As they developed these literacies in this classroom, Ephram even said that what they have learned in this class carries over to other classes. Likewise, Moses and Joseph appreciated how they can better relate to their audiences. Certainly, this is an ideal end state, and it is something I would have liked to have seen, but to be honest, I did not make the connection that once students developed these competencies regarding audience and purpose, they would become parts of the literacy is that students owned. These literacies, for all intents and purposes, became outside-of-the-classroom literacies that they took into new classrooms.

One final note about my action plan and the implications of this study for classroom praxis. I have always struggled with assessment and grading. I suppose that this is analogous to a piece of writing that is never finished, since because at some point, that piece of writing has to be published or turned in and it has to be "finished." I can except us with regards to my assessment skills, but I absolutely need to figure out a way to assess my students better with these major projects. As I looked back on Carrie's and Ephram's projects, I realized this. In order to address this, I can research and discuss these things with my colleagues, and I can take a class at Colorado State University – Pueblo: ED 545 Assessment & Data Driven Instruction. My final determination regarding taking this class in the fall of 2022 will be made in the summer.

Implications for Further Research

There is no doubt in my mind that the above implications for classroom practices intersects with the implications for further research. Indeed, some of the most important implications for research exist within the scaffolds that I want to develop for problem-solving, student choice, and inquiry. An action research study on the integration of cognitive load theory for reducing extrinsic cognitive load and increasing germane cognitive load might be prudent, along with a study on problem-solving methods as well as instructional methods for teaching problem-solving.

Further implications for research, and one area that I believe will be quite complex exists in the development and implementation of discussions (including discussion boards) in the online classroom. There is a great deal to be addressed with this research, including whether discussion boards truly work in my own classroom or not. This research could be centered on an action research cycle, but it could also be developed into a phenomenological or grounded theory study with the goal of understanding what occurs in online discussions versus face-to-face discussions. Certainly, there are many limitations associated with these research efforts.

The third area that should be addressed in research is fairly glaring: the difference between authentic learning experiences in a face-to-face classroom versus an online classroom. In fact, with the advent of COVID-19 and the “hyflex” learning experiences that combine face-to-face teaching with synchronized online and asynchronous online teaching, it is more prudent than ever to embed learning experiences into multiple modalities. With that in mind, a study into the effects of the same type of authentic learning experiences on the competency levels of the workplace writing of students in

different formats of teaching would offer insight into how to better design those experiences for future students.

Reflection

One of our greatest challenges in this generation of educators is to figure out how to manage multiple modalities regarding learning, each of which seem to demand our full efforts. Teaching face-to-face is not the same as teaching online, which is not the same as teaching in a hybrid format. On a daily basis, I am frustrated with technology. I am frustrated with not having a moving camera so that I have to stay still in order to see what my students online are doing and saying while I am also focusing on my in-class students. I am frustrated that classes get changed from online to face-to-face to hybrid and back to online not just within a single semester, but sometimes within a single week. However, that said, I truly believe that educators and others who subscribe to action research are in a much better position than many other vocations. It is not just a full dissertation-length study that can inform practice. It is our day-to-day cycles of planning, acting, observing, and reflecting that we can harness in order to make changes to our praxis that will have immediate effects. Indeed, my efforts to view education as a way to understand other people is predicated on the fact that I have to change what I do on a moment by moment basis, as all educators must. It integrates my faith, my gender, my sexuality, my ethnicity, and all of the intersectional identities of my students, including as scholars of writing in general and technical writing in particular. What I do with what I have left of my career is a direct result of the values I have developed as an educator, but also, what I do is a direct result of this study. I would be remiss if I did not recognize how I grew and how I changed over the course of this study. This study has forced me to take

not only a look at my praxis, but also a close look at myself and the ways that I interact with people. I tell every class on my first day with students that I have three goals for them: first, to walk away from the class as better people, second, to walk away as better writers, and third, to walk away with something concrete that they can point to that shows their expertise. This is what I want for myself as well, and the complexity of thinking about how to address all of these nuanced issues has been life-changing.

Summary

This action research project was a mixed methods study focusing on the integration of authentic learning and the effects of authentic learning on the proficiency level and the meaningfulness of students in an ENG 131 classroom. I found that the four facets of authentic learning, including student choice, inquiry, group collaboration, and problem-solving (Rule, 2006) are effective at increasing the proficiency levels of students as well as the meaningfulness of students in my classroom. However, there are several caviats to consider: first that problem-solving, student choice, and inquiry need to be scaffolded as to allow students to use them effectively while also not getting overwhelmed. In addition, and unexpectedly, I discovered that I need to address issues with discussion boards. While not every student enjoyed every aspect of authentic learning, students' meaningfulness was evident even among those students who *disliked* facets of authentic learning. For English 131, then, it can be concluded that authentic learning is a relatively stable and efficacious instructional design.

REFERENCES

- 2019 Facts. (2019). *Ciudad Community College*. [Http://www.pueblocc.edu/IR/CCC-Facts.pdf](http://www.pueblocc.edu/IR/CCC-Facts.pdf)
- Addams, J. (2017). The public school and the immigrant child. In D. Flinders & S. Thornton (Eds.), *The curriculum studies reader*, 5th ed., (pp. 55-57). Routledge.
- Alvesson, M. & Sandberg, J. (2011). Generating research questions through problematization. *The Academy of Management Review* 36(2), 247-251.
- Anderson, G., & Irvine, P. (1993). Informing critical literacy with ethnography. In C. Lankshear and P. McLaren (Eds.) *Critical literacy: Politics, praxis, and the postmodern*. SUNY Press.
- Anderson, P., & Kraushaar, K. (2017). We must write together. *Voices from the Middle*, 25(2), 47-50.
- Atwell, N. (1998). *In the middle*. Boynton/Cook.
- Axelson, R.D., & Flick, A. (2011). Defining student engagement. *Change*, 43(1), 38-48. <https://doi.org/10.1080/00091383.2011.533096>.
- Barab, S., Pettyjohn, P., Gresalfi, M., & Volk, C. (2012). Game-based curriculum and transformational play: Designing to meaningfully positioning person, content, and context. *Computers & Education* 58(1), 518-533.
- Beavers, E. Orange, A., & Kirkwood, D. (2017). Fostering critical and creative thinking in an authentic learning situation. *Journal of Early Childhood Education*, 38(1), 3-18. <http://dx.doi.org/10.1080/10901027.2016.1274693>

- Belloti, E. (2014). *Qualitative networks: Mixed methods in sociological research*. University of Manchester Press.
- Block, J., & Gordon, B. (2018). *Populations in Research Requiring Additional Considerations and/or Protections*.
<https://www.citiprogram.org/members/index.cfm?pageID=665&ce=1#view>
- Bobbitt, F. (1918). *The curriculum*. Riverside Press.
- Bourke, B. (2014). Positionality: Reflecting on the Research Process. *The Qualitative Report*, 19(33), 1-9. <https://nsuworks.nova.edu/tqr/vol19/iss33/3>
- Boutet, I., Vandette, M., & Valiquette-Tessier, S. (2017). Evaluating the implementation and effectiveness of reflection writing. *The Canadian Journal for the Scholarship of Teaching and Learning*, 8(1), 1-16.
- Brameld, T. (1950). Patterns of educational philosophy. World Book.
- Bryk, A. S. (2015). 2014 AERA distinguished lecture: Accelerating how we learn to improve. *Educational Researcher*, 44(9), 467-477.
- Clinton, J. & Roush, C. (2016, August 10). *Poll: Persistent partisan divide over 'Birther' question*. <https://www.nbcnews.com/politics/2016-election/poll-persistent-partisan-divide-over-birther-question-n627446>
- Coffey, S., Anyinam, C., & Zitzelsberger, H. (2018). Meaningful engagement with academic integrity through a focus on context and relationship. *New Directions for Community Colleges*, (183), 15–23.
- Colorado Community College System. (2007). *Institutional review board operating procedures*. <https://internal.cccs.edu/wp-content/uploads/documents/CCCSIRBOperatingProcedures.doc>

- . (2018). *Institutional review board*. <https://internal.cccs.edu/student-affairs/institutional-review-board/>
- . (2019). SP 9-71 – Community college course numbering system. <https://www.cccs.edu/policies-and-procedures/system-presidents-procedures/sp-9-71-community-college-course-numbering-system/>
- . (2010). 2010 CSAP district and school disaggregated summary results. <https://www.cde.state.co.us/assessment/coassess-dataandresults#2010>
- Covelli, B. (2017) Online discussion boards: The practice of building community for adult learners. *The Journal of Continuing Higher Education*, 65(2), 139-145. <https://doi.org/10.1080/07377363.2017.1274616>
- Cox, M., Ortmeier-Hooper, C., & Tirabassi, K. (2009). Teaching writing for the “real world”: Community and workplace writing. *The English Journal*, 98(5), 72-80.
- Creswell, J. & Creswell, J.D. (2018). *Research design: Qualitative, quantitative, and mixed methods approaches*, 5th ed. Thousand Oaks, CA: SAGE Publications, Inc.
- Creswell, J., & Miller, D. (2000). Determining validity in qualitative inquiry. *Theory into Practice*, 39(3), 124-130.
- Dewey, J. (1897). My pedagogical creed. *The school journal*, LIV(3), 77-80. <https://infed.org/mobi/john-dewey-my-pedagogical-creed/>
- Efron, S., & Ravid, R. (2013). *Action research in education: A practical guide*. Guilford Publications, Inc.
- ENG 131 (2019, Summer). https://erpdnssb.cccs.edu/PRODCCCS/ccns_pub_controller.p_command_process

- or?pi_search_type=SB_COURSE&pi_subj_code=ENG&pi_crse_numb=131&pi_archive_date=&pi_course_status=A&pi_term_code=202010
- Etikan, I., Musa, S. A., & Alkassim, R. S. (2015). Comparison of convenience sampling and purposive sampling. *American Journal of Theoretical and Applied Statistics*, 5(1), 1-4. <https://doi.org/10.11648/j.ajtas.20160501.11>
- Fraenkel, J., Wallen, N., & Hyun, H. (2015). *How to design and evaluate research in education*. McGraw Hill Education.
- Freire, P. (1970). *Pedagogy of the oppressed*. Bloomsbury Academic.
- French, L. R., Walker, C. L., & Shore, B. (2011). Do gifted students really prefer to work alone? *Roeper Review*, 33, 145-159.
- Galvin, S. & Greenhow, C. (2019). Writing on social media: A review of research in the high school classroom. *Tech Trends*, 64, 57-69. <https://doi.org/10.1007/s11528-019-00428-9>
- Giroux, H. (2004). Critical pedagogy and the postmodern/modern divide: Towards a pedagogy of democratization. *Teacher Education Quarterly*, 31(1), 31-47.
- . (2014). *Neoliberalism's war on higher education*. Haymarket Books.
- Giroux, H., & McLaren, P. (1989). *Critical pedagogy, the state, and cultural struggle*. State University of New York Press.
- Gorski, P. (2012). Perceiving the problem of poverty and schooling: Deconstructing the class Stereotypes that mis-shape education practice and policy. *Equity & Excellence in Education*, 45(2), 302-319.
- <http://dx.doi.org/10.1080/10665684.2012.666934>

Gorski, P. (29 July 2012). *Paul Gorski on deficit ideology and poverty*.

<https://www.youtube.com/watch?v=AJ2YQeZy4Hk>

Gorski, P. C., & Swalwell, K. (2015). Equity literacy for all. *Educational Leadership*, 72(6), 34-40.

GT-CO1 Intro. writing course. (2018, October 25).

<https://highered.colorado.gov/Academics/Transfers/gtPathways/Curriculum/Courses.aspx?cat=GT-CO1>

GT-CO1: Introductory Writing Course Required Syllabus Information. (2018, Spring).

<https://internal.cccs.edu/wp-content/uploads/documents/GT-CO1-Required-Syllabus-Info.pdf>

gtPathways (Guaranteed Transfer). (n.d.).

<https://highered.colorado.gov/academics/transfers/gtpathways/curriculum/courses.aspx>

Hale, A. (2020). Not scraping the bottom of the barrel: Disadvantage, diversity, and deficit as rich points. *Art and Humanities in Higher Education*, 19(3), 244-263.

<https://doi.org/10.1177/1474022219832453>

Harasim, L. (2012). *Learning theory and online technologies*. Routledge.

Harman, K. & Koohang, A. (2005). Discussion board: A learning object.

Interdisciplinary Journal of Knowledge and Learning Objects 1, 67-77.

Herr, K., & Anderson, G. (2015). *The action research dissertation: A guide for students and faculty* (2nd ed.). Sage Publications, Inc.

Howard, T. (2010). *Why race and culture matter in schools: Closing the achievement gap in America's classrooms*. Teachers College Press.

- Hsieh, H., & Shannon, S. (2005). Three approaches to qualitative content analysis. *Qualitative Health Research*, 15(9), 1277-1288.
<https://doi.org/10.1177/1049732305276687>
- Huang, Y., Liao, Y., Huang, S., & Chen, H. (2014). Jigsaw-based cooperative learning approach to improve learning outcomes for mobile situated learning. *Journal of Educational Technology & Society*, 17(1), 128-140.
- Hung, R. (2014). Learning as existential engagement with/in place: Departing from Vandenberg and the Reams. *Educational Philosophy & Theory*, 46(10), 1130-1142. <http://doi.org/10.1080/00131857.2013.799997>
- Hynes, M. J. (2019). My shadowing lesson: The importance of play. *School Administrator*, 76(2), 14-15.
<https://login.pallas2.tcl.sc.edu/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=eue&AN=134556374&site=ehost-live>
- Inquiry. (2021). *Oxford learner's dictionary*.
<https://www.oxfordlearnersdictionaries.com/us/definition/english/inquiry>
- Jonassen, D. (2011). Supporting problem solving in PBL. *Interdisciplinary Journal of Problem-Based Learning* 5(2). <https://doi.org/10.7771/1541-5015.1256>
- Kagan, S. (1989). The structural approach to cooperative learning. *Educational Leadership*, 47(4), 12-14.
- Katajisto, L. (2010). Implementing social media in technical communication. *2010 IEEE International Professional Communication Conference*, pp. 236-242.
<https://doi.org/10.1109/IPCC.2010.5530019>

- Kemmis, S., & McTaggart, R. (2000). Participatory action research. In N. Denzin & Y. Lincoln (Eds.), *Handbook of qualitative research* (2nd ed., pp. 567–605). Sage.
- Kerlinger, F. (1986). *Foundations of behavioral research*, 3rd edition. Holt McDougal.
- Khalil, M. K., & Elkhider, I. A. (2016). Applying learning theories and instructional design models for effective instruction. *Advances in Physiology Education*, 40(2), 147-156.
- Kirylo, J. (2011). *Paulo Freire: The man from Recife*. Peter Lang Publishing, Inc.
- Krefting, L. (1991). Rigor in qualitative research: The assessment of trustworthiness. *The American Journal of Occupational Therapy*, 45(3), 214-222.
- Ladson-Billings, G. (1995). Toward a theory of culturally relevant pedagogy. *American Education Research Journal* 32(5), 465-491.
- Lee, C. (2016). Teaching multiple literacies and critical literacy to pre-service teachers through children's-literature-based engagements. *Journal of Language and Literacy Education*, 12(1), 40-52.
- Lombardi, M. M. (2007). *Authentic learning for the 21st century: An overview*.
<https://net.educause.edu/ir/library/pdf/eli3009.pdf>
- Long, S., Souto-Manning, M., & Vasquez, V. M. (2016). *Courageous Leadership in Early Childhood Education: Taking a Stand for Social Justice*. Teachers College Press.
- Martin, K. and Nakayama, T. (2018). *Intercultural communication*. McGraw Hill.
- McCabe, P. Convincing students they can learn to read: Crafting self-efficacy prompts. *The Clearing House*, 79(6), 252-257.

- McCabe, P., & Newhouse, E. (2014). Interrupting deficit narratives in literacy education. *Global Education Review* 1(2), 3-6.
- Merriam, S. & Tisdell, E. (2016). *Qualitative research: A guide to design and implementation* (4th ed). San Francisco, CA: Jossey-Bass.
- Milner, H. R. (2013). Analyzing poverty, learning, and teaching through a critical theory lens. *Review of Research in Education* 37, 1-53.
- Mohamed, S., Embi, M., & Nordin, N. (2016). Designing e-portfolio with ARCS motivational design strategies to enhance self-directed learning. *Higher Education Studies* 6(4), 138-145.
- Muller, D. (2008). *Designing effective multimedia for physics education* (Unpublished doctoral thesis). University of Sydney.
- Muller, D. A., Sharma, M. D., & Reimann, P. (2008). Raising cognitive load with linear multimedia to promote conceptual change. *Science Education*, 92(2), 278-296.
- Murray, D. (1972). Teach with writing as a process not product. *The Leaflet*, 11-14.
- Nazario, L., Borchers, D., & Lewis, W. (2013). *Bridges to Better Writing*, 2nd edition. Wadsworth Cengage Learning.
- Nestor, O., & Moser, C. S. (2018). The importance of play. *Journal of Occupational Therapy, Schools & Early Intervention*, 11(3), 247-262.
<https://doi.org/10.1080/19411243.2018.1472861>
- Newmann, F., Marks, H., & Gamoran, A. (1995). Authentic pedagogy: Standards that boost student performance. *Issues in Restructuring Schools*, 8, 1-12.

- Norris, K., Lucas, L., & Prudhoe, C. (2012). Examining critical literacy: Preparing preservice teachers to use critical literacy in the early childhood classroom. *Multicultural Education* Winter 2012, 59-62.
- Oksiutycz, A., & Aziomya, C. (2017). Using action research for curriculum development and improving the learning experience: A case study. *South African Journal of Higher Education*, 31(3), 193-208.
- Olivia, P. & Gordon, W. (2013). *Developing the curriculum*, 8th edition. Pearson.
- Osorio, S. (2018). Toward a humanizing pedagogy: Using Latinx children's literature with early childhood students. *Bilingual Research Journal*, 41(1), 5-22.
[Http://doi.org/10.1080/15235882.2018.1425165](http://doi.org/10.1080/15235882.2018.1425165)
- Ozverir, I., Osam, U. V., & Herrington, J. (2017). Investigating the effects of authentic activities on foreign language learning: A design-based research approach. *Educational Technology & Society*, 20(4), 261–274.
- Paas, F., & Sweller, J. (2014). Implications of cognitive load theory for multimedia learning. In R. Mayer (Ed.), *The Cambridge Handbook of Multimedia Learning*, 27-42. Cambridge University Press.
[Https://doi.org/10.1017/CBO9781139547369.004](https://doi.org/10.1017/CBO9781139547369.004)
- Patton, M. (2002). *Qualitative research and evaluation methods*, 3rd ed. Sage.
- Payne, R. (2015). Why I set goals. <https://www.ahaprocess.com/why-i-set-goals/>
- Peltola, A. (2018). The classroom as think tank: Small groups, authentic exercises, and instructional scaffolding in an advanced writing course. *International Journal of Teaching and Learning in Higher Education*, 30(2), 322–333.
- Pfeiffer, W., & Adkins, K. (2012). *Technical communication fundamentals*. Pearson.

- Pollack, T. & Zirkel, S. (2013). Negotiating the contested terrain of equity-focused change efforts in schools: Critical race theory as a leadership framework for creating more equitable schools. *Urban Rev*, 45. 290-310.
<https://doi.org/10.1007/s11256-012-0231-4>
- Porath, S. L. (2016). Conceptual, pedagogical, cultural, and political dilemmas of implementing a constructivist workshop approach to teaching literacy. *Teachers and Teaching: Theory and Practice*, 22(7), 879–891. <https://doi.org/10.1080/13540602.2016.1185822>
- Powell, K. C., & Kalina, C. J. (2009). Cognitive and social constructivism: Developing tool for an effective classroom. *Education*, 130(2), 241-250.
- Powell, T., Arnett, J., Logan, M., Race, C, Reardon, T., Linimon, L., & Monroe, J. (2017). *Sexy technical communication*, 2nd Edition. (2017).
<https://oer.galileo.usg.edu/communication-textbooks/2>
- Preus, B. (2012). Authentic instruction for 21st century learning: Higher order thinking in an inclusive school. *American Secondary Education*, 40(3), 59-79.
- Roskos, K., & Christie, J. (2011). The play-literacy nexus and the importance of evidence-based techniques in the classroom. *American Journal of Play*, 4(2), 204-224.
<https://login.pallas2.tcl.sc.edu/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=eric&AN=EJ985588&site=ehost-live>
- Rule, A. (2006). Editorial: The components of authentic learning. *Journal of Authentic Learning* 3(1), 1-10.

- https://dspace.sunyconnect.suny.edu/bitstream/handle/1951/35263/editorial_rule.pdf?sequence=1
- Schiro, M. S. (2013). *Curriculum theory: Conflicting visions and enduring concerns*. Sage Publications.
- Senge, P., Cambron-McCabe, N., Lucas, T., Smith, B., Dutton, J., & Kleiner, A. (2012). *Schools that learn: A fifth discipline fieldbook for educators, parents, and everyone who cares about education* (2nd ed.). Crown Business.
- Shafer, G. (2013) Writing, reader response, and the community college. *Community College Journal of Research and Practice* 37(4), 313-318.
- <https://doi.org/10.1080/10668920903529981>
- Skinner, B. F. (1953). *Science and human behavior*. Simon and Schuster.
- Slavin, R. E. (2014). Making cooperative learning powerful. *Educational Leadership*, 72(2), 22.
- South, S. (2018). Eva Baca inducted into Proby Cultural Heritage room.
- <https://www.elpomar.org/blog/detail/eva-baca-inducted-into-proby-cultural-heritage-room/1914/>
- Sparks-Langer, G. M., & Colton, A. B. (1991). Synthesis of research on teachers' reflective thinking. *Educational Leadership*, 48, 37–44.
- <https://login.pallas2.tcl.sc.edu/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=cue&AN=508342019&site=ehost-live>
- Sterner-Neely, M. (2016, July 3). Everything Is [NOT] Awesome [When It's Time for Bed]: How My Toddler Taught My College Students to Write with LEGO. Workshop presented at *Denver Comic Con*, Denver, Colorado.

- . (2017, February 14). “Gotta Get Back to Hogwarts!”: *Potterverse* pedagogy as pedagogical presentation.” Paper presented at the *Southwest Popular/American Cultural Association Conference*. Albuquerque, New Mexico.
- . (2019, February 22). Mud***** Need Not Apply: Why Salazar Slytherin Was Correct in Wanting to Deny Muggle-Born Wizards Admission to Hogwarts and the Implications for Critical Consciousness. *Southwest Popular/American Cultural Association Conference*. Albuquerque, New Mexico.
- . (2018, April 21). *When We Kiss the Dead: Storytelling as Resistance in the Trump Era*. Presentation at the Transitions and Transactions IV Conference, Borough of Manhattan Community College, City University of New York, New York, NY.
- . (2018, June 18). *Villains in the Classroom: The Successes and Challenges of Translating Empathy for Pop-Culture Villains into Critical Consciousness*. Presentation at Page23 LitCon at Denver Comic Con, Denver, Colorado.
- Sterner-Neely, M. & Medendorp, L. (2019, November 21). *Game-based curricula for a 100-level, community college technical writing course: An action research study*. Peer-refereed study accepted for presentation at the National Council of Teachers of English conference, Baltimore, MD, p. 218. [Http://convention.ncte.org/wp-content/uploads/2019/10/Copy-of-2019_AC-SAT.pdf](http://convention.ncte.org/wp-content/uploads/2019/10/Copy-of-2019_AC-SAT.pdf)
- Stinnett, J. (2019). Using objective-motivated knowledge activation to support writing transfer in FYC. *College Composition and Communication* 70(3), 356-378.

- Stonebanks, M. (2010). How do you expect me to teach this without any resources? In J. L. Kincheloe, S. R. Steinberg, & C. D. Stonebanks, (Eds.), *Teaching against Islamophobia*. Peter Lang Publishing, Inc.
- Sweller, J. (1988). Cognitive load during problem solving: Effects on learning. *Cognitive Science* 12(2). Pp. 257-285. https://doi.org/10.1207/s15516709cog1202_4
- Taylor, M. (2000). Nancie Atwell's *In the Middle* and the ongoing transformation of the writing workshop. *The English Journal* 90(1), <https://doi.org/10.2307/821730>
- The New London Group. (1996). A pedagogy of multiliteracies: Designing social futures. *Harvard Educational Review*, 66(1), 60–92.
- Thibault, M. (2003). Children's literature promotes understanding.
[Http://unc.org/lp/pages/635](http://unc.org/lp/pages/635)
- Thibodeaux, T., Harapnuik, D., & Cummings, C. (2019). Student perceptions of the influence of choice, ownership, and voice in learning and the learning environment. *International Journal of Teaching and Learning in Higher Education*, 31(1), 50–62.
- Tijerina, T., Powell, T., Arnett, J., Logan, M., & Race, C. (2019). *Open technical communication*. Kennesaw State University.
- Tomlinson, C. & McTighe, J. (2006). *Integrating differentiated instruction & understanding by design*. ASCD.
- U.S. Department of Education. (2016). Definition of Hispanic-serving institutions. *United States Department of Education: Programs*.
<https://www2.ed.gov/programs/idueshsi/definition.html>

- Van Ryzin, M., & Vincent, C. (2017) Use of Native Language and Culture (NLC) in elementary and middle school instruction as a predictor of mathematics achievement. *Journal of American Indian Education*, 56(2), 3-33.
- Vygotsky, L. (1979). Consciousness as a problem in the psychology of behavior. *Soviet Psychology*, 17(4), 3-35.
- . (1978). *Mind in society: The development of higher psychological processes*. Harvard University Press.
- Watogodakumbura, C. (2013). Authentic learning experience: Subtle but useful ways to provide it in practice. *Contemporary Issues in Education Research*, 6(3), 299-304.
- Ye, L. & Cheng, L. (2018). Fill the classroom with life: Deepening the reform of Chinese primary and secondary classroom teaching. *Journal of Curriculum Studies*, 50(3), 352-363. <https://doi.org/10.1080/00220272.2017.1359340>
- Zhang, Z., Nagle, J., McKishnie, B., Lin, Z., & Li, W. (2019). Scientific strengths and reported effectiveness: a systematic review of multiliteracies studies. *Pedagogies: An International Journal*, 14(1), 33-61.
- <https://doi.org/10.1080/1554480X.2018.1537188>
- Zielinski, D. (2017). The use of collaboration, authentic learning, linking material to personal knowledge, and technology in the constructivist classroom: Interviews with community college faculty members. *Community College Journal of Research and Practice*, 41(10), 668-686.
- <http://doi.org/10.1080/10668926.2016.1220338>

Zuo, N., Josephson, A., & Schreitrump, D. (2019). Engaging students in global architecture: Three authentic-learning classroom interventions. *NACTA Journal*, 63(1a), 99-107.

APPENDIX A

OLD ENG 131 COMPETENCIES

1. Identify audience
2. State purpose
3. Find, evaluate, interpret, and document data
4. Organize data and outline reports
5. Select and use format and style appropriate to the purpose and audience
6. Use standard grammar, spelling, and mechanics
7. Develop the skills necessary for writing a variety of commonly used technical documents
8. Employ writing strategies such as description, definition, and instruction
9. Integrate visual aids into documents
10. Produce collaborative documents
11. Prepare and deliver a professional oral presentation

APPENDIX B

NEW ENG 131 COMPETENCIES

New Standard Competencies (Specific to ENG 131 courses in Colorado)

1. Create documents that respond to audience, purpose, context, formatting, and technical genres for a variety of workplace situations.
2. Plan, write, revise, and review print and electronic documents that stress analytical, evaluative, and persuasive/argumentative writing within various workplace situations.
3. Apply principles of effective technical communication including organization, visual design, and a reader-centered focus.
4. Critically read, evaluate, apply, and synthesize evidence and/or sources in support of a defined purpose, using an appropriate documentation system.
5. Apply technical writing conventions including structure, paragraphing, tone, mechanics, grammar, syntax, and style. (ENG 131, 2019)

Written Communication Content Criteria (Applies to all writing courses in Colorado)

1. Develop Rhetorical Knowledge
 - a. Focus on rhetorical situation, audience, and purpose.
 - b. Read, annotate, and analyze texts in at least one genre of academic discourse.
 - c. Use voice, tone, format, and structure appropriately.

- d. Write and read texts written in at least one genre for an academic discourse community.
 - e. Learn reflective strategies.
- 2. Develop Experience in Writing
 - a. Learn recursive strategies for generating ideas, revising, editing, and proofreading.
 - b. Learn to critique one's own work and the work of others.
- 3. Develop Critical and Creative Thinking
 - a. Identify context.
 - b. Present a position.
 - c. Establish a conclusion indicated by the context that expresses a personal interpretation.
- 4. Use Sources and Evidence
 - a. Select appropriate evidence.
 - b. Consider the relevance of evidence.
- 5. Develop Application of Composing Conventions
 - a. Apply genre conventions, including structure, paragraphing, tone, mechanics, syntax, and style.
 - b. Use appropriate vocabulary, format, and documentation. (GT-CO1: Introductory Writing Course Required Syllabus Information, 2018)

GT-CO1 Competencies (Applies to all 1st semester writing courses in Colorado)

- 1. Employ Rhetorical Knowledge

- a. Exhibit a thorough understanding of audience, purpose, genre, and context that is responsive to the situation.
- 2. Develop Content
 - a. Create and develop ideas within the context of the situation and the assigned task(s).
- 3. Apply Genre and Disciplinary Conventions
 - a. Apply formal and informal conventions of writing, including organization, content, presentation, formatting, and stylistic choices, in particular forms and/or fields.
- 4. Use Sources and Evidence
 - a. Critically read, evaluate, apply, and synthesize evidence and/or sources in support of a claim.
 - b. Follow an appropriate documentation system.
- 5. Control Syntax and Mechanics
 - a. Demonstrate proficiency with conventions, including spellings, grammar, mechanics, and word choice appropriate to the writing task.

APPENDIX C

CONSENT INSTRUCTIONS AND FORMS

Colorado Community College System Institutional Review Board

ELEMENTS OF INFORMED CONSENT

Researchers must obtain the signed ***informed consent*** of participants. For those less than 18 years of age, the researcher must obtain the signed informed consent of parents or legal guardian and all reasonable attempts must be made to obtain each participant's ***assent***, which is defined as the participant's agreement to participate in the study.

The informed consent must include the following in sequential order and in language which the participants can understand:

1. Statement of purpose of the study.
2. Short description of methodology and duration of participant involvement.
3. Statement of risks/benefits to the participants.
4. Statement of data confidentiality.
5. Statement regarding the right of the participant to withdraw from the study at any time without negative consequences.
6. An offer to answer any questions the participant may have.
7. Contact information of all Principal Investigators, and also contact information for the Colorado Community College System Institutional Review Board (Office of the Provost 720-858-2759).
8. Line for signature of participants and/or parents or legal guardian except for questionnaire research in which return of questionnaire gives implied consent.
9. Statement that participant is 18 years of age or older unless parent or legal guardian has given consent.

In situations where participants will be **deceived**, items 1 and 2 are omitted and participants are told (on the signed form) that disclosure of the purpose and/or methodology could bias the outcome of the study. In this case, **after the study is complete**, each participant must be

presented with a description of the purpose and methodology as carried out and this document must be signed by the participants "after the fact" in order to guarantee informed consent.

SAMPLE INFORMED CONSENT

The following suggestions are offered as guidelines. The exact language is the decision of the researcher. Keep in mind, however, that the Institutional Review Board must determine if the participants will be giving ***informed consent***. (Note: that in the case of children, it is ***assent***).

Dear (student, parent, sir, madam, etc.):

We are conducting a study to determine _____. In this study, you (your child/ward) will be asked to _____. Your participation should take about _____ minutes.

There are no risks to you (your child/ward).

or

The only risks to you (your child/ward) include _____.

All information will be handled in a strictly confidential manner, so that no one will be able to identify you (your child/ward) when the results are recorded/reported.

Your (your child's/ward's) participation in this study is totally voluntary and you may withdraw at any time without negative consequences. If you wish to withdraw at any time during the study, simply _____.

Please feel free to contact _____ (names(s), title(s) of principal researchers) at _____ phone) if you have any questions about the study. Or, for other questions, contact the Director of Institutional Research (303.797.5870).

If the participant is of age (18 years old or older), use:

I understand the study described above and have been given a copy of the description as outlined above. I am 18 years of age or older and I agree to participate.

Signature of Participant

Date

If the participant is not of age, use:

I understand the study described above and have been given a copy of the description as outlined above. I agree to allow my child/ward to participate with his/her assent when possible.

Signature of Parent/Guardian Date

INFORMED CONSENT

Dear Student:

I am conducting a study to determine the effectiveness of a type of instruction called “authentic instruction.” In this study, you will be asked to participate in a group, and to write a reflection on your experiences. Your participation will be in class, and you may be asked to participate in a follow-up interview of about 10-15 minutes.

There are no risks to you.

All information will be handled in a strictly confidential manner, so that no one will be able to identify you when the results are recorded/reported.

All students, regardless of the participation in the study, will be experiencing authentic instruction during the course. However, your participation in this study is totally voluntary and you may withdraw at any time without negative consequences, which means that your reflections will not be included in the study itself and you will not be asked to conduct a follow-up interview. If you wish to withdraw at any time during the study, simply contact Matthew Sterner-Neely at (719) 549-3002 or matthew.sterner-neely@pueblocc.edu.

Please feel free to contact Matthew Sterner-Neely, English Faculty, at (719) 549-3002 if you have any questions about the study. Or, for other questions, contact the Director of Institutional Research (303.797.5870).

I understand the study described above and have been given a copy of the description as outlined above. I am 18 years of age or older and I agree to participate.

Signature of Participant

Date

APPENDIX D

REFLECTION PROMPTS

Focused Reflections (Before Intervention)

In both of your focused reflections, I want you to use these instructions as a plan. Try to stick to what happened – in other words, tell me a story, not a morality-based fairy tale or a *Chicken Soup for the Soul*-type feel-good vignette.

Part I:

Consider your past writing experiences. How has writing been connected to either you, personally, or within your workplace? In other words, how have you used writing in your life? If it **has** connected to your life, show me that: in a response of about 1-2 paragraphs, are there **one or two** moments that exemplify these experiences? Write about those experiences. If it **has not** connected to your life, simply state that.

Please be open and honest in your responses; they will only be viewed by me.

Part II:

Please write a sentence about the following elements of learning according to how **effectively they engage you** in the learning process as a student.

Group work

Student-directed work

Inquiry-based work (in other words, investigating what you want to investigate)

Problem-solving

Part III:

Think ahead to what comes next for you in your education and future career. What will you take away from **past writing experiences** into other situations in your life?

Please use the rubric that follows as a guide for your writing.

In both of your focused reflections, I want you to use these instructions as a plan. Try to stick to what happened – in other words, tell me a story, not a morality-based fairy tale or a *Chicken Soup for the Soul*-type feel-good vignette.

Part I:

Consider your writing experiences in this unit. How has writing been connected to either you, personally, or within your workplace **in this unit**? In other words, how might this writing be used in your life? If it **has** connected to your life, show me that: in a response of about 1-2 paragraphs, are there **one or two** moments that exemplify these experiences? Write about those experiences. If it **has not** connected to your life, simply state that.

Please be open and honest in your responses; they will only be viewed by me.

Part II:

Please write a sentence about following elements of learning according to how **effectively they engage you** in the learning process as a student. Consider this unit only.

Group work

Student-directed work

Inquiry-based work (in other words, investigating what you want to investigate)

Problem-solving

Part III:

Think ahead to what comes next for you in your education and future career. What will you take away from **this writing experience** into other situations in your life?

Please use the rubric that follows as a guide for your writing.

Reflection is one of the most powerful learning tools that a writer has in his or her toolbox. Not only can it include creativity and scholarship; it can also change you, as a writer, even as you are writing the reflection. As a successful writer—in any profession—you will need good reflective skills. These writing activities offer you the opportunity to further develop these skills.

The criteria for well-written reflections include the following:

Creativity, Response, Change

The first key to a good reflection is to respond each part of the prompt.

Make it memorable. Employ your creativity. Draw your reader in. Use expressive language. This is true for most types of reflections—remember, with fiercest clarity, how it is or how it was—and write that!

The second key to a good reflection is to respond to the writing of the prompt. Sometimes, this might mean that you discuss how incredible the experience was. Sometimes, you have to be honest when explaining that your pen simply wouldn't move—that you have to force your own hand—so to speak. 😊

The last key to a great reflection is to discuss how you have been changed by the act of writing itself. Writing should—and will—change you. And becoming a better writer means being willing to discuss that change.

Purpose

The elements discussed above can be written explicitly—in separate sections—or you might discover that you write best when telling a story that integrates all three.

Don't be afraid to try new things! Be bold!

Instructor Feedback:

Use this rubric to guide you. You will get more from me than just numbers, and you should give me more than checked boxes.

Table D.1 *Reflection Rubric*

Critical Elements	Exemplary (3)	Proficient (2)	Partially Proficient (1)	Not Evident (0)
Authentic Learning	Meets “Proficient” criteria in multiple ways and/or places.	Addresses each of the four elements of authentic learning, either by explaining their experience or stating that they did not have any experiences.	Addresses between one and three elements of authentic learning, either by explaining their experience or stating that they did not have any experiences.	Does not address authentic learning components.
Reflection	Meets “Proficient” criteria; demonstrates insight into the process and personal style of the author.	Fully addresses prompt, discussing the how they have changed.	Incompletely addresses prompt.	Does not address prompt.

APPENDIX E

SEMI-STRUCTURED INTERVIEWS

Beginning the Interview.

Tell me a bit about yourself – your name and your major, and maybe why you chose to take this particular course at this particular time.

Is there anything you would do differently after being in this class for the time we have been here?

Student-Directed Learning.

How did you begin the process of determining what to do and in what order?

Tell me about **your** voice in the group.

Tell me how people in the group guided the conversations.

Social Learning.

How did your group function together? Were there moments of conflict? How did you handle these? How did your group handle these?

What is your greatest moment of success in this group? What is your greatest shortcoming?

Was there anything that was particularly meaningful to you in the group?

Problem-Solving.

What was your group's issue?

How did your group solve the problem?

What was the end result?

How did you know to use those particular products to communicate your company's position?

Finishing the Interview.

Is there anything that else that you feel I should know about your experience in the last couple of weeks?

Would you like to receive a transcript of the interview so that you can follow-up and correct any misconceptions?

APPENDIX F

WORKPLACE WRITING RUBRIC

Modified by CCC's English Department from the American Association of Colleges and Universities Critical Thinking Value Rubric.

Table F.1 *Workplace Writing Rubric*

Criteria	4-Advanced Proficient	3-Proficient	2-Partially Proficient	1-Not Proficient
Content: Explanation of Issues	The need to be considered critically is stated and description leaves most terms defined, ambiguities explored, boundaries determined.	The need to be considered critically is stated but the description leaves some terms undefined.	Issue/problem to be considered critically is stated but description leaves some terms undefined, ambiguities unexplored, boundaries undetermined, and/or backgrounds unknown.	Issue/problem to be considered critically is stated without clarification or description.
Content: Student's position (perspective, thesis)	Specific position (perspective, thesis) acknowledges different sides of an issue and explores multiple sides,	Specific position (perspective, thesis) acknowledges more than one side of an issue.	Specific position (perspective, thesis) acknowledges that the perspective has multiple sides.	Specific position (perspective, thesis) is stated, but is simplistic and obvious.
Content: Conclusions and related outcomes (implications and consequences)	Conclusion is logically tied to information (because information is chosen to fit the desired conclusion); some related outcomes (consequences and implications) are identified clearly.	Conclusion is logically tied to information (because information is chosen to fit the desired conclusion); one or two related outcomes (consequences and implications) are identified clearly.	Conclusion is logically tied to information (because information is chosen to fit the desired conclusion).	Conclusion is inconsistently tied to some of the information discussed; related outcomes (consequences and implications) are oversimplified.

Presentation: Format and Audience	Conforms to applicable format for the intended audience and uses an attractive design.	Conforms to applicable format for the intended audience.	Partially conforms to applicable format for the intended audience.	No attempt was made to conform the correspondence to a intended audience.
Presentation: Purpose	Conforms to applicable format for the intended purpose and uses an attractive design.	Conforms to applicable format for the intended purpose.	Partially conforms to applicable format for the intended purpose.	No attempt was made to conform the correspondence to a intended purpose.
Presentation: Mechanics	0-2 Errors	3-4 Errors	5-6 Errors	>6 Errors

APPENDIX G

OBSERVATION OF DISCUSSION FORM

Table G.1 *Observation Form*

RQs	
Discussion Date	Obs. Time
Observation Foci	
Purpose	
Descriptions	Participant
	Group

Reflections

What do I want to focus on next time?

APPENDIX H

LESSON PLANS

ENG 131 Competency One. Create documents that respond to audience, purpose, context, formatting, and technical genres for a variety of workplace situations.

Written Communication Competency Three.

Develop Critical and Creative Thinking.

Identify context.

Present a position.

Establish a conclusion indicated by the context that expresses a personal interpretation.

Lesson Overview:

In part I, students will be given an opportunity to practice each component of authentic learning, including the following:

Student choice. Student choice is practiced in the proposal that students develop for the final project, instructed by the video accompanying the assignment. See Appendix I: Proposal. *Inquiry.*

Inquiry is practiced in the “Finding Technical Documents” activity that students complete before the final project, instructed by the video accompanying the assignment. See Appendix J: Finding Technical Documents.

Group Work. Group Work is practiced in the Peer Testing activity that students complete before the final project, instructed by the video accompanying the assignment. See Appendix K: Peer Testing.

Problem Solving. Problem Solving is reflected in the “Catchphrase” activity that students complete before the final project, instructed by the video accompanying the assignment. See Appendix L: Catchphrase.

During the second stage of the intervention, students will be given an assignment – the Final Game Guide – and they will be asked to use the types of skills developed in the preceding activities for this final project. See Appendix M: Final Game Manual Instructions. For this final project in this class, they will develop an idea for a new game in a genre of their choosing (board, card, mobile, roleplaying, etc.) with the end goal of pitching the idea to a potential investor in hopes of securing funding to have their game produced, marketed, and sold. They will use the four elements of authentic learning as practiced in the previous part, including inquiry, group work, student choice, and problem solving.

Materials/Equipment/Media:

- In order to assist students, each group can search a number of resources for assistance, including the instructor. However, in order to assist a group, they must have first exhausted searches in the textbook, the companion textbook website, and the LMS.
- *Technical Communication Fundamentals*, Chapter Two: Letters, Memos, and Emails
- Authentic learning lectures on the Learning Management System

APPENDIX I

PROPOSAL

Your Group: Game Proposal

DATE

Overview

Game Background and Brief Description

i Describe how the idea for the game came about, who is involved (**names and roles**), and the purpose of the game (e.g. “The purpose of this game is to escape _____ within 60 minutes.”).

Game Scope

i Game scope defines the boundaries of the project. Think of the **scope** as an imaginary box that will enclose all the project elements/activities. It not only defines what you are doing (what goes into the box), but it sets limits for what will not be done as part of the project (what doesn’t fit in the box). The **scope** answers questions including (but not limited to) the following:

What will be done

What won’t be done

What the result will look like.

Top-Level Requirements

i Describe the top level requirements for the game. For example:

This game needs to include the following:

- Three complete and solvable puzzles
- Game pieces, icons, avatars, and counters (dice, timers, etc.)
- Artwork/Graphics
- Instructions
- Clues, hints, and solutions
- Theme and story
- Deliverables

i Game Proposal

Process Explanation

Game components

Presentation

Complete Game Manual

Project Reflection / Acknowledgements

Audience

i Describe the core targeted audience for this game.

Specific Inclusions and Exclusions

i Describe any specific components that are included or excluded from this project.

Process for Game Play

i Describe the **basic** steps for game play.

Components

i Dig into each of the top-level requirements. List and describe each component.

Presentation Elements

i How will you present this game? PowerPoint? Prezi? Something Else?

Describe each component

Approval and Authority to Proceed

I approve the game as described above, and authorize the team to proceed.

Approved By

Date

APPENDIX J

FINDING TECHNICAL DOCUMENTS

For this discussion, your task is to search for blank templates that are available for you to use when writing your own technical documents.

Step 1: Choose a Document Type

Select one type of technical document to focus on. Some examples of what you might choose are listed below, but there are many other possibilities, too. Try to pick something that would be a common type of document used in your own future career field.

Agenda	Letter
Brochure	Memorandum
Business Plan	Minutes
Certificate	Newsletter
Fax Cover Letter	Press Release
Flyer	Proposal
Handbook	Report
Instruction Manual	Resume
Itinerary	Sales Invoice

Step 2: Locate Templates

Locate *at least two* different templates for the type of document you selected in Step 1. There are a wide range of templates for all the programs in the MS Office Suite, including Word, available directly through the [Microsoft website](#), which is a great place to start, but there are many free templates available for download elsewhere, as well.

Step 3: Evaluate Your Templates

Download the two templates you found and attach them to your initial discussion post so that your classmates can see them, too. Explain why you chose the templates you did and evaluate how effective their layouts are - consider things like spacing, headings, colors, fonts, and graphics.

Step 4: Respond with More

In your response posts, review the templates found by your classmates and comment on their evaluations. Additionally, see if you can locate at least one more template for the type of document they chose - let's see how large of an archive of templates we can assemble so that you can use them as resources in the future.

APPENDIX K

PEER TESTING (DISCUSSION BOARD)

As we near the end of our time together, take a moment to share your instructions for at least one round of gameplay for the game you are designing. In your initial posts, be sure to specifically request what kind of feedback you would like from your peers (e.g. those aspects of the game you'd like help improving).

In preparation for your response posts, you may benefit from watching this brief video on [Giving Playtest Feedback](#). Attempt to walk through your classmates' instructions as fully and carefully as you can - be sure to take notes as you do! Then, provide useful feedback to your peers on how clear and easy to follow you find their game to be, as well as specific suggestions for any aspects that might be improved.

APPENDIX L

CATCHPHRASE

For this week's discussion, we'll be playing a version of the game [Catchphrase](#) in which you will each define and/or describe concepts in 3 different categories. As in Catchphrase, you may not use rhymes, spellings, or any part of the word or phrase you are defining or describing.

Refer to the guidelines from Chapter 5 of your textbook, especially Definition Guideline 1 on page 95, to help you construct your "Catchphrase" definitions and descriptions in each of the 3 categories below.

Category 1: Technical Writing Terms (Informal Definition)

Choose one of the terms or concepts you have encountered in this class's readings, videos, and discussions so far this semester and define the term *in your own words* as an **informal definition**.

Category 2: Jargon or Slang (Formal Definition)

Choose a term or phrase that is only used in a particular profession (technical jargon) or social circle (popular slang) and define it *in your own words* as a **formal definition**. Jargon might include a piece of specialized equipment or vocabulary specific to your industry. Slang is usually specific to a particular age group, region, or special interest group - here are some [examples of words recently added to the dictionary](#) for some inspiration!

Category 3: Popular Games (Description) [Game Guides](#)

Choose a well-known game (card, board, video, etc.) that your classmates would be familiar with and describe it *in your own words* - you may choose to focus on the parts, the functions or the sequence in your thorough **description** of the game (see page 102). You may not use the game's title, slogan, or other obvious terms or phrases that would immediately identify the game.

In your response posts, first try to guess what "Catchphrases" your classmates have defined and described and why. What made some definitions and descriptions clearer than others? Then, for each response posts (2 minimum), choose at least one of the terms or phrases you guessed your classmates were describing and re-define it *in your own words*. Explain how would you have described it differently, and why.

Don't forget to come back after everyone has had a chance to guess to share what terms and phrases you were actually describing!

APPENDIX M

FINAL GAME MANUAL INSTRUCTIONS

For your final project in this class, you will develop an idea for a new game in a genre of your choosing (board, card, mobile, roleplaying, etc.) with the end goal of pitching the idea to a potential investor in hopes of securing funding to have your game produced, marketed, and sold.

You will work on assembling your final project over the next several weeks, culminating in a polished and professional technical document in the form of a Complete Game Manual, through which you will display your technical writing skills, including description, definition, and instruction.

Complete Game Manual Outline

To give you an idea of what the finished product will entail, here is an outline of all the sections you will need to include in your Complete Game Manual:

1. Game Title and Logo and/or Box Cover Design
2. General Administrative Details
 - How many players can play the game?
 - What are the suggested ages for players of this game?
 - On average, how long does it take to play a single game?
3. Introduction
 - What is the background story or theme?
 - What can you say that will draw the players into the game world?
4. Summary of the game system and objectives
 - In GENERAL terms, what type of game is this?
 - In GENERAL terms, what is the objective of the game?
5. Components of the Game
 - In GENERAL terms, what are the game pieces and what do they represent?
Provide illustrations of the core game components, such as the game board, examples of the different card types, player pieces, other tokens/markers, etc.
 - What game-specific terminology do players need to know? Define any terms for them clearly using formal definitions (in complete sentences).
6. Set-Up & Gameplay
 - How do you set-up the game board at the beginning of the game?
 - What components do each of the players need to start the game?

- In what order does a turn/round/phase/etc. occur?
- Step by step, what happens on a turn? Explain concepts as they occur during a turn.
- Provide specific examples where helpful, including graphics and illustrations to
- visually demonstrate your instructions.

7. Ending the Game

- How do you know when the game is over?
- How do you know who won the game?

8. Appendix & Credits (as needed)

- Are there any special cases with circumstance-specific rules that players should be aware of (e.g. challenges, penalties, bonuses, special abilities, etc.)?
- Is there any extra information that would be helpful or fun for players to know (e.g. alternate rules or different ways to play the game—beginner vs. expert difficulty, large groups vs. single-player, cooperative vs. competitive mode, etc.)?
- Cite any outside sources used or referenced in compiling your Game Manual (e.g. any images or graphics that you did not create yourself, etc.)

Include any acknowledgments, thanks, or dedications you desire!