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UNIVERSITY OF CALIFORNIA,
IRVINE

Formative Assessment during Online Collaborative Writing in Middle Schools

DISSERTATION

submitted in partial satisfaction of the requirements
for the degree of

DOCTOR OF PHILOSOPHY

in Education

by

Jenell Krishnan

Dissertation Committee:
Associate Professor Rebecca Black, Co-Chair
Professor Carol Booth Olson, Co-Chair
Chancellor's Professor Jonathan Alexander

2019

DEDICATION

To dedicated teachers everywhere
in recognition of their work to promote the many literacies of their students

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PUBLICATIONS

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Tate, T. P., Collins, P., Yao, J., Xu, Y., **Krishnan, J.**, Prado, Y., Farkas, G., & Warschauer, M. (2019). Visual Syntactic Text Format: Improving Adolescent Literacy. *Scientific Studies of Reading* <https://doi.org/10.1080/10888438.2018.1561700>

- Funded by Digital Scaffolding for English Language Arts (IES #R305A150429; \$3,500,000)

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Krishnan, J. Cusimano, A.*, Wang, D., & Yim, S. (2018). Writing Together: Online Synchronous Collaboration in Middle School. *Journal of Adolescent and Adult Literacy*, 62(2), 163-173. <https://doi.org/10.1002/jaal.871>

Zinger, D., **Krishnan, J.**, Warschauer, M. (2018). Bridging Student Digital Divides by Bridging Teacher Digital Divides. In A. Normore, & A. I. Lahera (Eds.) *Crossing the Bridges of the Digital Divide: A Walk with Global Leaders*. Charlotte, NC: Information Age Publishing.

- Funded by Digital Scaffolding for English Language Arts (IES #R305A150429; \$3,500,000)

Booth Olson, C. Chen, V., **Krishnan, J.**, & Nazzari, J. (2018). Helping English Learners Navigate the Challenges of Academic Writing. In D. Basaraba, D. Baker, & Richards-Tutor, C. (Eds.) *Second Language Acquisition: Methods, Perspectives, and Challenges*. Nova Science Publishing.

- Funded by The Pathway Project: A Cognitive Strategies Approach to Reading and Writing Instruction for Teachers of Secondary English Language Learners (IES #R305W060016; \$2,942,842)

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Weist, R., Pawlak, A., & **Krishnan J.** (2004). Syntactic-Semantic Interface in the Acquisition of Verb Morphology. *Journal of Child Language*, 31, 31-60. <https://doi.org/10.1017/S0305000903005920>

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Booth Olson, C. & **Krishnan, J.** (September, 2016). *Painting with Words in the Grammar Brushstrokes Program: How Students Provide and Respond to Online Peer Feedback*. Featured at the Institute of Education Science's Panel on the Future of Writing Research, Washington, D.C.

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Google Folders and Student Writing. (June, 2017). ELA teachers, TOSAs, and administrators. Garden Grove Unified School District, Garden Grove, CA.

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Metalanguage: Using Close Reading Tips while Analyzing Text. (January, 2017). ELA teachers, TOSAs, and administrators. Garden Grove Unified School District, Garden Grove, CA.

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ABSTRACT OF THE DISSERTATION

Formative Assessment during Online Collaborative Writing in Middle Schools

By

Jenell Krishnan

Doctor of Philosophy in Education

University of California, Irvine, 2019

Associate Professor Rebecca Black, Co-Chair

Professor Carol Booth Olson, Co-Chair

Research suggests that teachers' and students' engagement in formative assessment contributes to students' writing development by influencing both what and how students learn. However, while research exists on how teachers and students engage in formative assessment in traditional classroom settings, little work has examined the nature of formative assessment when students write together online. This three-study dissertation aims to fill this gap in the literature through a longitudinal examination of two middle school English language arts (ELA) classrooms. This dissertation explored teachers' and students' formative assessment process when the same groups of three students engaged in online collaborative writing to compose source-based argumentative essays. In the Study 1, I employ a multiple-case study approach to investigate (1) the common and unique contextual factors that shape ELA teachers' formative assessment beliefs and practice, and (2) the challenges they face when engaging in ongoing assessment while students write together online in their classrooms. Primary data sources include pre- and post-study semi-structured teacher interviews and post-instruction debriefs. Secondary data sources include field notes from 100 hours of classroom observations. Findings suggest that

district-level and classroom-level factors shape teachers' perceptions of formative assessment and how they adjust their approach over time. In the Study 2, I take a multiple-case study approach to investigate (1) two teachers' use of formative assessment strategies and (2) two student focal groups' use of formative assessment strategies during one week-long collaborative writing activity. Primary data sources include field notes from one week of classroom observations in each school context and screencast data that capture group talk and synchronous online collaborative writing in real time. Secondary data sources include portions of pre- and post-study semi-structured teacher interviews. I find that teachers with different approaches to writing instruction focus on different aspects of online collaborative writing during their formative assessment process. What teachers prioritize in their formative assessments, in turn, shape student groups' own assessments of writing. Student writing groups take up cues from their teachers about what to prioritize when working together, using tools to support source-based argumentative writing or to support their in-group collaboration. In Study 3, I employ a multiple-case study approach to examine (1) four student writing groups' strategies for formative assessment, (2) the changes they make to their use of strategies for formative assessment over time, and (2) the strategies that support writing improvements to their source-based argumentative writing. Data sources include 33 hours of screencast data and genre-specific rubric scores for each groups' essay written at two time points. Findings suggest that groups' talk focused on setting goals, using classroom tools, evaluating their writing and group dynamics, and making informed changes to their texts through revision. Also, groups that prioritized writing effectiveness, rather than writing efficiency, spent more time on revising, using their own assessments of writing for those revisions, and demonstrated improvements in their source-based

argument writing. Together, these studies provide a nuanced understanding of the factors that shape formative assessment during collaborative writing activities in middle school classrooms.

INTRODUCTION

We look at their [formative assessment assignments] as a class to see what was needed in the response, what some students might have missed. I answer any questions, but I try to make it very clear and model for them what the expectation is. It's okay for them to be unsure during the formatives and to not score so well during the formatives. We can always correct and fix it, and if the student would like, they can rewrite.

-Mr. Nguyen, eighth-grade ELA teacher

Formative assessment, especially with developing writers, needs to happen before, during and during and during and during the writing process. It gives them a chance to know my expectations and what their expectations should be. Involving the kids in the process by having them set daily goals in super important. It's a lot of work but worth it; it pays off.

-Mr. Williams, eighth-grade ELA teacher

With these reflections, Mr. Nguyen and Mr. Williams¹, the two 8th-grade English language arts (ELA) focal teachers in this study, conveyed their differing perspectives on formative assessment, the process of ongoing assessment of student learning to make informed changes in instruction (Formative Assessment for Students and Teachers Collaborative, 2018; Wylie, 2008), during online collaborative writing (OCW). For Mr. Nguyen, formative assessment during OCW took the form of brief writing assignments which Mr. Nguyen used to help him and his students understand learning progress towards teacher-directed goals. Mr. Nguyen viewed formative assessment as an opportunity for students to evaluate the extent to which they were producing texts that were aligned with the expectations outlined in the rubric or modeled in an exemplar essay. In comparison, for Mr. Williams, formative assessment during OCW was an ongoing process that was directed by both teachers and students. It involved Mr. Williams assuming the role of facilitator as students set writing goals and assessed their progress towards these goals. Although their perspectives on formative assessment differed, both Mr. Williams and Mr. Nguyen recognized that ongoing assessments of teaching and learning were an

¹ All names are pseudonyms.

integral part of their work in technology-enhanced classrooms and that this work shaped the writing development of their students.

Like Mr. Nguyen and Mr. Williams, I understand that formative assessment, when used effectively, can be critical to students' writing development and that it influences both what and how students learn. However, the research that exists focuses primarily on formative assessment in traditional classroom settings. Little work has examined the nature of formative assessment when students write together online. Thus, the goal of this dissertation study is to explore the formative assessment strategies used by Mr. Nguyen and Mr. Williams during OCW, and the ways in which these strategies influence students' engagement in formative assessment and their writing development within the genre of source-based argumentative writing. Specifically, we ask what factors shape a teacher's approach to formative assessment when students in ELA class write together online? And how do different classrooms shape students' ongoing assessments of progress during this form of writing?

In the following sections, I begin to answer the questions posed above, and I introduce my dissertation, which focuses on the formative assessment strategies of Mr. Nguyen, Mr. Williams, and their students. First, I begin by grounding my dissertation in the research and I describe how, despite the potential of OCW for student learning, little is known about the formative assessment strategies used by teachers and students within technology-enhanced classrooms that incorporate OCW. Next, I explore how my dissertation can help to fill these gaps in the literature and I outline the goals of this work. Finally, I provide an overview of each of the three studies of my dissertation, and I close with a brief reflection about the contributions of my work.

Online Collaborative Writing: A Rich Space for Student Learning

Online collaborative writing (OCW) activities have the potential to provide rich opportunities for student learning in ELA classrooms. During OCW, students use communication skills to share their ideas; problem-solving skills to solve issues related to group dynamics; and critical thinking skills to make decisions about how to add, revise, and delete text (Krishnan, et al., 2019). In addition, students have opportunities within OCW to engage in digitally-mediated talk and create text which reflects the multiple ways that adolescents engage in literacy practices beyond the classroom (Black, 2008; Hull & Stornaiulo, 2014; Ito, et al., 2013). In this way, OCW may draw from the literacy skills students cultivate outside of school to support the academic skills that are important for school success (CCSSO, 2010; Yim, et al., 2017; Yim, et al., 2014). Despite the potential of OCW as a rich space for student learning (Yim, et al., 2017; Yim, et al., 2014), OCW also poses unique challenges for teachers and students as they engage in formative assessment, the process of ongoing evaluation of progress for improved teaching and learning (Wylie, 2008).

What We Know about Formative Assessment

According to nationally-recognized scholars, formative assessment is an instructional process that teachers and students use to improve teaching and learning (Wylie, 2008). Some primary characteristics of this process include articulating expectations, critiquing work in terms of the expectations, providing actionable feedback, and improving instruction and tactics for learning (Andrade & Cizek, 2010). In ELA classrooms focused on writing instruction, teachers engage in formative assessment by articulating expectations through modeling of writing, analyzing students' compositions against the expectations, giving feedback that aligns with writing goals, and making informed improvements to their instruction based on students' progress (Andrade & Cizek, 2010). Likewise, students in these classrooms engage in formative

assessment as they set writing goals, monitor and reflect on their learning, and make informed changes to their strategies for writing (Andrade, Du, & Mycek, 2010; Butler & Winne, 1995). Thus, formative assessment is an evolving, iterative, and recursive cycle that can position teachers and students as co-evaluators and co-directors of students' writing development (Andrade & Boulay, 2003; Andrade, Du, & Wang, 2008). When enacted successfully, formative assessment not only promotes improved instruction as teachers adapt their approach in response to students' shifting needs, but it can also move students towards writing independence as teachers and students share responsibility for the learning process (Nicol & Macfarlane-Dick, 2006; Pintrich, 2000; Zimmerman & Schunk, 2001).

Although decades of research indicate that formative assessment can be an effective way to support teaching and writing development (Bennett, 2011; Kingston & Nash, 2011; McManus, 2017; Nicol & Macfarlane-Dick, 2006; Panadero & Jonsson, 2013; Sadler, 1998; Wylie, 2008), there are gaps in this research. Little is known about how different approaches to writing instruction shape how teachers engage in formative assessment when their students write together online. Furthermore, even less is known about how teachers' ongoing assessments during online collaborative writing (OCW) shape the ways that groups assess their own writing progress. In sum, students' engagement in formative assessment is an unstudied area, particularly during OCW.

The Challenges of the Formative Assessment Process during OCW

While online collaborative writing (OCW) may provide rich opportunities for student learning, this form of writing also poses unique challenges for teachers as they engage in formative assessment—the on-going process of monitoring student learning and the development of future instructional plans based on students' progress towards learning goals (Bennett, 2011;

Kingston & Nash, 2011; McManus, 2017; Nicol & Macfarlane-Dick, 2006; Panadero & Jonsson, 2013; Sadler, 1998; Wylie, 2008). For example, teaching in a classroom where students write together online using one-to-one devices involves both constant face-to-face and online interactions, and teachers must make decisions about how to effectively navigate between the two. Teachers may also be challenged by groups' dynamics (Hansen & Liu, 2005; Mendonça & Johnson, 1994), face-to-face and online monitoring (Kost, 2011), and providing accessible feedback (Sadler, 1998). Thus, as teachers engage in formative assessment, they must make decisions about how to best adapt their instruction for improving all students' learning (Parsons, 2012). Complicating this are the broader policies, such as state standards (CCSSO, 2010), as well as district-level accountability mandates, that shape the instructional landscape of the classroom. Thus, engaging in formative assessment during OCW can be an exceptionally challenging process for teachers.

Formative assessment during OCW not only poses potential challenges for teachers, but it can prove difficult for students as well. Formative assessment during OCW also requires that students work with other group members to set goals, discuss tools to use, evaluate their writing, and then make changes accordingly (Andrade, Du, & Mycek, 2010; Butler & Winne, 1995). These interactions require self-regulatory skills (Nicol and Macfarlane-Dick, 2006) for navigating complex group dynamics that evolve across multiple collaborative writing experiences (Huxham, 2010). Thus, students' formative assessment processes within OCW activities can be in constant flux and are more complex than in traditional, independent writing settings. This also makes the investigation of students' engagement in formative assessment during OCW even more difficult to study. Although teachers' and students' engagement in formative assessment during OCW activities can be exceptionally complex and, therefore,

challenging to study, more research in this area is needed if we are to understand the writing processes of students during OCW and how teachers may support OCW in their classrooms.

Addressing the Unknown: A Study of Formative Assessment during OCW

This dissertation aims to address what is not yet understood about teachers' and students' formative assessment process during OCW. Because research-practice partnership is an effective way to improve the work of teaching through a consideration of the ever-changing demands of the profession, I partnered with two ELA teachers to co-develop curriculum-aligned collaborative writing activities to support their writing instruction. My identity as a former ELA teacher and my fierce commitment to (re)imagining traditional classroom writing also played a role in my decisions for the selection of each school site, the study design, and my analytic methods. Through this nuanced examination of different contexts, classrooms, and student writing groups, I provide a more comprehensive perspective on how formative assessment is used to improve teaching and learning during complex forms of classroom writing. To better contextualize the study of Mr. Williams' and Mr. Nguyen's classrooms, I first examine the district-level factors that shaped both teachers' formative assessment beliefs and practices. I then move entirely into each teachers' classroom to examine the ways their different approaches to writing instruction shape the ways that student writing groups engage in ongoing assessment of their collaboratively composed texts. To build on what was understood from this study, I then examined the formative assessment strategies used by four student writing groups, how their use of these strategies changed over time, and how they relate to improvements in source-based argumentative writing. In what follows, I provide a brief overview of these three studies.

Formative Assessment during Online Collaborative Writing: Overview of Three Studies

This dissertation provides a comprehensive understanding of formative assessment during online collaborative writing by examining context-level, classroom-level, and group-level factors shaping this phenomenon. I take an ecological perspective to this study of formative assessment during OCW and draw from Graham's (2018) Writer(s)-within-Community Model of Writing to unpack the interrelatedness of contexts, classrooms, and student writing groups. Findings from this dissertation can inform policies related to technology-enhanced classrooms, practices for writing instruction and assessment of collaborative writing activities, and theoretical models of writing that take an ecological perspective on writing development.

Study 1. This chapter describes the ways that context-level factors shaped two ELA teachers' formative assessment beliefs and practices related to online collaborative writing. By studying teachers from widely different contexts (e.g., state, district size, structural support, class size), this work explores the ways that district-level factors shape the classroom instructional landscape for teachers and students over time. In this way, Study 1 addresses to the physical and social environment as well as the collective history of these classroom communities (Graham, 2018). This study focused on understanding (1) the unique characteristics of each educational context, (2) how the context shaped teachers' formative assessment beliefs and practices, and (3) the challenges teachers experienced when engaging in the formative assessment process when students wrote together online on their classrooms. Twenty days of classroom observations totaling over 100 hours, four semi-structured interviews with teachers, and instructional debrief memos were analyzed for this study. Findings suggest that contextual factors (i.e., district mandates, teacher-student ratio) and writing instructional approach (i.e., teacher-centered versus student-centered) shape teachers' formative assessment beliefs and practice during online

collaborative writing. Nonetheless, both teachers reported challenges to ongoing assessment when students wrote together online. Both teachers, too, made informed changes to their formative assessment approach to address the specific challenges they faced. The results from this study can inform policies as various stakeholders continue to refine the writing agenda for middle school ELA classrooms.

Study 2. Whereas Study 1 provides a broad analysis of the contextual factors that shape teachers' practice throughout the 2018-2019 school year, Chapter 2 builds on what was learned in that work by studying what Graham (2018) refers to as the writer(s) and collaborators in classroom contexts. Specifically, I studied the ways that each teacher's (i.e., collaborator's) approach to writing instruction shapes formative assessment priorities during OCW and how this, in turn, shapes student groups' (i.e., writer(s) assessment priorities. Through a fine-grained analysis of the frequency and intensity of classroom strategies for formative assessment during one week-long online collaborative writing activity, Study 2 focuses on understanding (1) the frequency and intensity of each teacher's formative assessment strategy use for improving their teaching (2) the frequency and intensity of each student writing groups' formative assessment strategy use for improving their learning. I analyzed semi-structured teacher interview data, 10 days of classroom observations totaling over 50 hours, and daily screencasts of student writing groups' talk and online synchronous collaborative writing. The findings show that regardless of teachers' approaches to writing instruction, they use similar strategies for formative assessment (e.g., modeling, providing feedback). However, the frequency and intensity of their use is dependent on their approach to writing instruction. The student writing groups' in these different classrooms prioritized different aspects of the online collaborative writing (e.g., text production vs. team work) according to the focus established by their teacher. The findings provide guidance

to scholars interested in developing a writing instruction and assessment framework that attends to the many literacies that students may practice during online collaborative writing in traditional school settings.

Study 3. This chapter describes the different ways that four student writing groups assess their progress during OCW over time. In this way, I address the writing goals, tool, moves, and products (Graham, 2018) that are related to each student group's experiences during OCW. By studying multiple student writing groups from widely different classroom contexts (e.g., class size, models of instruction), this work explores how different groups change their approach to assessment over time. The study focuses on understanding (1) the common strategies used by groups to assess their progress, (2) changes in groups' strategy use across two source-based argumentative writing activities, and (3) what strategies were related to improvements in groups' source-based argument writing. I analyzed thirty-three hours of screencast data capturing groups' talk and online synchronous collaborative writing across two week-long writing activities, classroom observations, and groups' final essay rubric scores. Findings suggest that groups use similar strategies (e.g., tool use, questioning, revision), but the groups' that prioritized writing effectiveness (over writing efficiency) in their writing discussions also wrote source-based argumentative essays that improved in rubric scores. These groups also grew more independent when determining sources of feedback with which to base revisions. This study makes a theoretical contribution by highlighting the way that group talk socially mediated writing over time, a consideration that is under emphasized in recent models of writing development.

Taken together, the findings of this dissertation provide a nuanced view of the nature of formative assessment during collaborative writing by characterizing the contextual factors, instructional factors, or student group factors that shape how it manifests in the classroom. This

work contributes to the policies, practice, and theory on the teaching and assessment of new, online ways of writing in the following ways. First, a characterization of different districts' policies and supports for writing instruction and assessment in technology-enhanced classrooms will prove useful for educational stakeholders interested in locating friction points between current policies and the desired learning opportunities for all students. Second, the characterization of teachers' formative assessment approach during online collaborative writing will prove useful for the design and analysis of technology-enhanced learning environments in diverse school settings. Lastly, this study also makes a theoretical contribution by highlighting student-led talk as a conduit for writing development during OCW, a specific construct that is alluded to in Graham's (2018) Writer(s)-Within-Community Model of Writing, but that is not explicitly addressed.

Ethics and Validity of Findings

I adhered to ethical procedures and strategies for research with human subjects through the process of designing the studies, gaining institutional review board approval, receiving consent from the participants, collecting and storing data, and analyzing the findings. Throughout all stages of the project, the study team protected confidentiality of all data; electronic data was protected by password and hard copy data was protected under lock and key. The validity (Creswell & Miller, 2000) of this dissertation's findings was established using multiple methods. First, I employed a multiple case study approach. This allowed me to leverage the descriptive strength of a case study design (Merriam, 1988), to increase the pragmatic "usefulness" (i.e. akin to external validity) of the findings by investigating widely diverse educational contexts (Barab & Squire, 2004; Messick, 1992), and to triangulate my findings (Miles, Huberman, & Saldaña, 2014). Secondly, I established prolonged contact with both school

sites to establish rapport with the participating teachers and their students, as well as additional school professionals (i.e., other ELA teachers, special education teachers, instructional aides, counselors, principals, curriculum directors, and a superintendent). Thirdly, I established a data audit trail that documented the chronology of my data collection as well as a record of my data analysis (Lincoln & Guba, 1985). This was instrumental in creating rich, thick, descriptions of each school context, the participating teachers, and their students. Additionally, I carried out member checks (with teacher and students) and reviewed my data interpretations both internally, with a research assistant during the beginning stages of analysis and then with colleagues, mentors, and advisors during later stages of analysis.

Dissertation Goals

One of the goals of the project was to develop rich learning opportunities where students could engage, share, and learn from others' digital, social, and academic literacies. This aligns with the new literacies that scholars, researchers, and national leaders in teaching say are valuable but are not always captured by traditional methods of assessment. Although experimental studies of innovative classroom practices are commonly evaluated using a pre-post design, the results do not always elucidate the underlying processes that connect observed phenomena, students' variations in social and digital participation, and their many pathways to outcomes within classroom ecologies. Yet, understanding the complex nature of different classrooms, situated within their own systems of policies, supports, and expectations, is critical for designing effective learning experiences for all students. The methods used in this dissertation aimed to address this challenge through the collection and analysis of micro-ethnographic data (Watson-Gegeo, 1997). To understand the central phenomenon through multiple perspectives, multiple analytic approaches were used. Analytical methods included

qualitative deductive and inductive coding (Saldaña, 2009), systematic visualization (Miles & Huberman, 1994), constant comparative method, and cross-case analysis (Miles, Huberman, & Saldaña, 2014).

Closing Thoughts

Formative assessment is the *why* of instruction. It provides teachers with a way of systematically determining common challenges that students are encountering in their writing, providing feedback to support students' writing development, and it helps to drive teachers' next instructional moves. Therefore, the aim of this dissertation is to unpack the complex nature of formative assessment, particularly during online collaborative writing. In Study 1, I examine the contextual factors that shape teachers' beliefs and practices related to formative assessment during online collaborative writing. I build on Study 1 in Study 2. In this Study, I investigate how teachers' approach to writing instruction shapes their use of formative assessment. This helps me to explore the connection between a teacher's approach and how students learn to assess their progress as they write together online. Finally, my third study centers on four groups of student writers and how they grow as both writers and collaborators over time. Thus, these three studies provide insights into how both teachers approach and students engage in formative assessment during online collaborative writing. Through a deeper understanding of the context-level, classroom-level, and group-level factors that shape the formative assessment process, I hope to inform how to best support students during online collaborative writing.

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CHAPTER 1

The Power of Context:

Exploring Teachers' Formative Assessment for Online Collaborative Writing

Introduction

Online collaborative writing platforms, such as Google Docs, are a ubiquitous part of writing instruction in today's classrooms (Finn, 2018) that provide potentially rich spaces for student learning. Teachers can use online collaborative writing platforms to support meaningful peer-to-peer collaboration (Vallance, Towndrow, & Wiz, 2010) that enhances language-learning opportunities (Black, 2008; Thorne & Black, 2007), and improves students' overall writing achievement (Graham & Perin, 2007). In addition, these online collaborative writing platforms provide opportunities for teachers to support students in developing important 21st century skills that have been noted as essential for postsecondary success (P21, 2009). Within these platforms, students may use critical thinking skills to support the development of writing goals, engage in collaboration as they determine how to revise text, communicate opinions about the direction of writing, and apply creative solutions for navigating group dynamics (Krishnan, Yim, Wolters, & Cusimano, 2019).

However, while online collaborative writing (OCW) may provide rich opportunities for student learning, this form of writing also poses unique challenges for teachers as they engage in formative assessment—the on-going process of monitoring student learning and the development of future instructional plans based on students' progress towards learning goals (Bennett, 2011; Kingston & Nash, 2011; McManus, 2017; Nicol & Macfarlane-Dick, 2006; Panadero & Jonsson, 2013; Sadler, 1998; Wylie, 2008). For example, teaching in a classroom where students write

together online using one-to-one devices involves both constant face-to-face and online interactions, and teachers must make decisions about how to effectively navigate between the two. Teachers may also be challenged by groups' dynamics (Hansen & Liu, 2005; Mendonça & Johnson, 1994), face-to-face and online monitoring (Hedge, 2000; Kost, 2011), and providing accessible feedback (Sadler, 1998). These classroom challenges may be confounded by the unique characteristics of today's increasingly diverse classrooms. In 2015, for example, only 27% of all eighth-graders scored at the proficiency level or above on the National Assessment of Educational Progress in writing; this statistic drops to 1% for the nation's English Learners who make up 10% of the K-12 student population (NCES, 2012). Thus, as teachers engage in formative assessment, they must make decisions about how to best adapt their instruction for improving all students' learning (Parsons, 2012). Complicating this are the broader policies, such as state standards, as well as district-level accountability mandates, that shape the instructional landscape of the classroom. Thus, engaging in formative assessment during OCW can be an exceptionally challenging process for teachers.

Given both the potential of online writing platforms for supporting student learning and the challenges these platforms may pose for teachers' engagement in formative assessment, a deep understanding of how teachers engage in formative assessment in technology-enhanced classrooms is needed. While research exists on the effects of formative assessment on student learning in traditional classroom settings, virtually no work has examined how teachers' make informed adjustments to their teaching based on ongoing formative assessments when students write together online in middle schools. In addition, although some work exists on the connection between assessment, feedback, and writing improvement, very little is known about the contextual factors that foster or limit teachers writing assessment practices in the classroom

(Graham, Harris, & Herbert, 2011). Few studies have explored how teachers' contexts shape their beliefs and practices around formative assessment, and fewer still have explored these issues specifically in relation to OCW. This line of research is particularly challenging for several reasons. First, although writing instruction is shifting due to the affordances of online writing platforms, teachers may not have the freedom, flexibility, or inclination to engage students in OCW throughout the academic year. Additionally, the very nature of OCW in the classroom, which involves both face-to-face and digital interactions, requires teachers to draw from multiple sources of information (i.e., in-class engagement, online composition) to meaningfully assess learning. To fully understand how and why teachers engage in formative assessment as students write together online, researchers need to engage in ongoing, frequent observations of the classroom and overall school context, a time-intensive activity. Lastly, to uncover teachers' rationale for the choices they make in their classrooms, an established relationship between teachers and the researchers they invite into their classrooms must be established.

The present study aims to overcome these challenges and contribute to the body of literature focused on assessment for learning during complex forms of literacy instruction. We use pre- and post-study interviews and over 100 hours of classroom observations in two school districts to explore eighth-grade English language arts (ELA) teachers' formative assessment beliefs and practices during their students' engagement in OCW. Specifically, we unpack the contextual factors that shape ELA teachers' formative assessment practices and we explore the unique challenges these teachers face when assessing groups' OCW.

The following research questions guide this study:

- 1) How do contextual factors shape two ELA teachers' formative assessment beliefs and practices during OCW?
- 2) What unique challenges, if any, do these teachers experience when engaging in formative assessment during OCW?

Conceptual Framework

For the purposes of this study, we conceptualize formative assessment as teachers' active monitoring of student learning and the continuous adjustment of their instructional practice in light of their evaluation of students' progress towards learning goals (Formative Assessment for Students and Teachers Collaborative, 2018; Wylie, 2008). Thus, we conceptualize formative assessment not as a static entity, but rather as an ongoing process that can be used by teachers to support students' continued writing development by "short-circuiting the randomness and inefficiency of trial-and-error learning" (Sadler, 1989, p. 120). In this way, the formative assessment process is critical to student learning because it narrows the gap between teaching objectives and students' actual learning by gathering and interpreting student learning data, providing meaningful feedback, and tracking progress over time. For example, within this study, formative assessment can be understood as a process that teachers use for assessing student progress. This process begins by setting learning objectives, collecting information about student learning, evaluating student learning against the objective, and then making informed improvements to instruction.

A teacher's formative assessment process may be influenced by district-level structures like curriculum pacing guides and recommended models of instruction, or by a teacher's own understanding of what is important for student learning. Given the different factors that shape a teacher's conceptualization of formative assessment, teachers from different school districts are

likely to engage in the formative assessment process for different purposes and will make informed improvements to their instruction according to the larger education agenda set by their teaching context. Building on this conceptualization of formative assessment as an active, ongoing, and dynamic process that shapes student learning, we now look to two constructs—contextual factors and teachers' beliefs—that deepen our understanding of how and why teachers engage in formative assessment. We describe each of these constructs in detail below.

Contextual factors

Graham's (2018) writer(s)-within-community model of writing (see Appendix A for an illustration of the model) is useful for understanding the numerous contextual factors that influence teachers' engagement in formative assessment during OCW. Drawing from Graham's (2018) model, we define context as the "Physical/Social Environment" in which all teachers teach (p. 262). Thus, context refers both to: 1) a teacher's physical environment, which includes the classroom, department, school, and district; and 2) the social environment, which includes the policies, norms, and accepted ways of teaching that often entrench instructional practice. In this way, Graham's (2018) model highlights that a teacher's engagement in formative assessment is influenced by shifting communities, spaces, historie(s), and the learning needs of students.

Our understanding of the many contextual factors that shape teachers' engagement in formative assessment is also informed by research. Pressures of national education initiatives, school-site resources (i.e., available technology), cultural norms (i.e., instructional approaches), and teachers' beliefs about their role in the classroom (i.e., knowledge transmission, social construction) all shape how teachers support student writing development. For example, a study of teachers' beliefs about formative assessment revealed that school contexts support teachers in improving their instructional practice for writing according to the school's definition of formative

assessment, the context's available resources, and a teacher's individual professional needs (Brink & Bartz, 2017). The role of educational context on teachers' formative assessment beliefs and practices was also highlighted in Alotaibi's (2018) study of 210 teachers across 15 schools. The analysis of teacher questionnaire data and focal group interviews indicated that teachers' adoption of formative assessment practices was often influenced by school-level policies and support. Hence, scholars acknowledge that many contextual factors, such as national education initiatives, institutional resources, and socio-political features of the school, are an important consideration when exploring teachers' engagement in formative assessment as they inevitably shape teachers' decision-making and instructional approach.

Teacher's beliefs

In addition to contextual factors, teachers' beliefs are another construct that is critical to our conceptualization of formative assessment. In Graham's (2018) model, writing communities that are made up of classroom spaces include writer(s) and collaborators. Although collaborators, according to the model, include peer readers, teachers are particularly powerful collaborators that have a direct impact on student writing development. Specifically, teachers' beliefs about their learners and the learning that takes place in their classrooms is one of the most critical and determining factors in the teaching and learning process (Crookes, 1997). For instance, a teacher who believes that students learn best when they receive ample modeling of writing will use direct instruction, a teacher-centered approach; however, a teacher who believes that students need ample time for discussing their writing may use a student-centered approach towards instruction. Needless to say, teachers' beliefs about students' learning needs and what approach will best serve their students plays a critical role in determining the learning opportunities afforded to students.

Research also suggests that teachers' beliefs about instruction shape their engagement in

formative assessment. For example, research indicates that teachers are likely to incorporate elements of formative assessment (i.e., student goal development, self-assessment, peer feedback) when they believe this type of instruction improves student literacy learning (Bennett, 2015). Teachers' beliefs about formative assessment also may lead to varying manifestations of this process in the classroom. To illustrate, Kahn's (2000) study of ELA classes revealed that teachers used a wide array of assessment practices because they held differing beliefs about teaching and student learning. Mangano and Allen's (1986) study of ELA teachers and Johnson's (1992) study of ESL teachers also revealed that different assessment practices were linked to teachers' differing beliefs about teaching and learning. The results of both of these studies suggest that, not only were teachers' practices consistent with their beliefs, but the observed teacher-student interactions differed according to each teacher's beliefs about what constitutes good writing instruction. Thus, the research demonstrates that, in addition to contextual factors, teachers' beliefs are an equally important construct to consider when examining teachers' engagement in formative assessment.

Taken together, teachers may make informed improvements to their instruction according to their beliefs, but these beliefs are often impacted by the larger, contextual forces in teachers' professional lives (Graham, 2018). Hence, our conceptual framework is grounded in the assumption that an analysis of both contextual factors and teachers' beliefs is critical if we are to develop a deep understanding of teachers' engagement in formative assessment. Considering that formative assessment contributes to student writing development by "influencing the learning process (how they learn) and by affecting the learning outcome (what they learn)" (Weurlander, et al, 2012, p. 753), more research is needed to unpack this process when students write together online. Although research exists on the factors that influence teachers' beliefs about formative assessment in traditional educational spaces, the literature does not attend to teachers who

specifically engage in complex, technology-mediated, forms of writing instruction. The current study addresses this research gap and extends these previous studies by 1) highlighting the contextual factors that shape two teachers' formative assessment practices and 2) illustrating their beliefs about formative assessment for OCW.

Method

This study employed a qualitative case study approach (Yin, 2017) to examine the phenomenon of teachers' formative assessment practices. Creswell (2013) describes the case study method as a way to explore “real-life, multiple bounded systems (cases) over time, through detailed, in-depth data collection involving multiple sources of information” (p. 97). A case study approach allowed the researchers to build highly descriptive cases of ELA teachers' beliefs about and practices for formative assessment during OCW. Through pre- and post-study interviews and over 100 hours of classroom observations, we explored eighth-grade ELA teachers' formative assessment beliefs and practices for OCW in their different school contexts (Hatch, 2002). Though there are limitations to generalizability when using this approach, the researchers' explicit goal here was to provide a rich account of the contextual factors that play a role in shaping teachers' formative assessment beliefs and practice during OCW.

Contexts and Participants

In order to gain a deep understanding of how both contextual factors and teachers' beliefs influence teachers' engagement in formative assessment within OCW spaces, we situated our case study within two different contexts and focused our analysis on two eighth-grade ELA teachers—Mr. Nguyen and Mr. Williams (all names are pseudonyms). Initial participant selection was based on the following criteria: extensive experience teaching ELA at the secondary level, access to digital devices (i.e., Chromebooks), an administrator-endorsed track

record of high quality writing instruction, an interest in exploring the problems of practice relating to formative assessment, and an interest in designing OCW activities during the 2018-2019 academic year. Then, among teachers who met these criteria, we selected two participants using purposive sampling for maximum variation using the following criteria: geographic location, student population, school performance, class size, and level of experience teaching with one-to-one devices. This sampling strategy accomplishes the objective of identifying “important shared patterns that cut across cases and derive their significance from having emerged out of heterogeneity” (Palinkas, et al., 2015, p. 534). This strategy is also used to document unique or diverse variations that emerge according to the specific cultures and histories of two educational contexts (Patton, 2002) and to understand our central phenomenon (Creswell, 2013). Table 1.1 provides an overview of the shared and unique educational contexts for each Mr. Nguyen and Mr. Williams, and both participants are described in-depth below. In what follows, we describe both Mr. Nguyen and Mr. Williams and the contexts in which they taught.

The case of Mr. Nguyen. Mr. Nguyen taught eighth-grade ELA in a public school district that was located in the southwest region of the U.S. This district served a student population with the following demographics: free or reduced-price lunch (70%), Hispanic (54%), Asian (34%), and English Language Learners (39%). The participating intermediate school was a consistently high-performing, Title 1 school and served 800 seventh and eighth grade students with an average teacher-student ratio of 27 to 1. English language arts (ELA) teachers had access to a Chromebook cart in their classrooms for student use and received professional development for using these tools for literacy instruction.

Mr. Nguyen was in his fifteenth year of teaching in the same school district, at the same school site. He received his Bachelor's degree in English and teaching certification from a local state university. In the past years, Mr. Nguyen taught ELA to seventh-grade students in different types of classes (i.e., advanced, ELD, inclusive).

Several institutional resources and socio-political factors shaped Mr. Nguyen's writing instruction. First, he taught for a large public school district that supported instruction and assessment through grade-level ELA pacing guides, each with summative and formative assessments aligned with their newly adopted textbook. This meant that most of Mr. Nguyen's instruction was bound by each unit's focal texts and assessments. His instructional approach reflected the district's encouraged approach for reading and writing instruction, the gradual release of responsibility (GRR) model (e.g., Fisher & Frey, 2015; Pearson & Gallagher, 1983). Teachers received professional development on using this approach and it was widely adopted by the ELA team. According to the GRR model, teachers shift the authority over classroom activity to students, removing scaffolding based on an understanding of learners' needs (Bruner, 1978). Mr. Nguyen's approach to writing instruction also incorporated genre-specific models to instruct his large classes of culturally and linguistically diverse students on paragraph-level writing features. His modeling focused on "how students can demonstrate that they can do it" (Maynes, 2012, p. 42), where "it" represents writing that contains the genre-specific elements of a model essay. His instructional approach utilized strategies for sharing his expertise with students (De Smedt & Van Keer, 2014; Lave, 2009; Norton, et al., 2005). The direct and guided instruction that Mr. Nguyen used meant that his students were new to peer-to-peer collaboration in this context. Mr. Nguyen acknowledged this aspect of his classroom's collective history, explaining that other contextual demands (i.e., pacing-guide, quarterly testing) had led him to

prioritize certain aspects of the GRR instructional model, a common implementation concern of this model (Fisher & Frey, 2013). He reported that the opportunity to have students engage in OCW was an important reason for his study participation. When discussing his approach to formative assessment, he explained,

We look at [students' completed assignments] as a class to see what was needed in the response, what some students might have missed. I answer any questions, but I try to make it very clear and model for them what the expectation is... It's okay [for students] to be unsure during the formatives and to not score so well during the formatives. We can always correct and fix it, and if the student would like, they can rewrite.

From this, we can see that Mr. Nguyen's beliefs about formative assessment were shaped by the significant instruction and assessment structures that were carefully designed by his school context.

For this study, Mr. Nguyen worked with the lead researcher to create two source-based argumentative writing assignments that worked within the boundaries of his pacing guides. These activities were intended to engage groups' understanding of the grade-level source materials from the textbook while gaining peer-supported exposure to a challenging analytical genre (Schleppegrell, 2009). The first argumentative essay included evidence from two informational articles and focused on the essential question, When do kids become adults? During the second activity, groups read a play, *The Diary of Anne Frank*, and wrote an argumentative essay responding to the essential question, Are people truly good at heart? For the second assignment, Mr. Nguyen was also interested in creating an organizational tool to help him formatively assess and keep track of groups' progress each day, and he worked with the lead researcher to create this tool. The document aligned with the elements of the model essay for argumentative writing and includes space for Mr. Nguyen to record whether each of his 11 groups' writing featured the important elements of the genre.

The case of Mr. Williams. Mr. Williams taught eighth-grade ELA for a public school district located in northeast region of the U.S. The participating Title 1 middle-high school served over 500 students in grades 6-12 and had an average teacher-student ratio of 14 to 1. The student demographics are reflected here: free or reduced-price lunch (100%), White (94%), Hispanic (2%), and English Language Learners (0%). Teachers had access to one curriculum specialist who served all K-12 teachers and provided with opportunities to learn with other teachers from different school districts throughout the county. ELA teachers also had access to a dedicated classroom Chromebook cart and were provided with one-on-one learning opportunities from the curriculum specialist on how to utilize these devices during literacy instruction.

During the study, Mr. Williams was in his twenty-third year of teaching. Like many local teachers, Mr. Williams received his Bachelor's degree, teaching certifications, and Master's degree from the same state university known for its teacher preparation program. For the past four years, Mr. Williams has taught eighth-grade ELA, including one inclusion class supported by a special education teacher, and two sections of an intervention-based class for struggling readers and writers. Mr. Williams had experience teaching ELA from grades 7-12 as well as composition courses at the community college-level. Much like Mr. Nguyen, Mr. Williams' focus and instructional practices were also shaped by the available resources and the socio-political milieu of his school context. Whereas Mr. Nguyen was supported by a team of curriculum and instruction specialists to provide guidance, Mr. Williams' was entirely responsible for creating curriculum and instruction for his smaller classes of eighth-grade students. He rarely utilized the aging textbooks in his classroom and preferred to create literary units of study based on a focal text of his choosing. This teacher, the only eighth-grade teacher in

the district, experienced some of the geographic and professional isolation common to teachers of rural communities (Salazar, 2007).

Mr. Williams' writing instructional approach most frequently aligned with social constructivist principles, engaging students in discussions and other peer-to-peer and teacher-group interactions (Au, 1998; Vygotsky, 1978). This view of literacy is "context-dependent and responsive to factors within a particular sociocultural environment, beliefs and subsequent practices will vary according to the interpretative needs of an individual" (Fang, 1996, p. 60). His perceptions of a future where collaboration is an imperative skill for college success and career access also shaped his instruction and assessment practices. His approach to writing instruction focused on the interpersonal nature of academic writing with a strong focus on meeting the needs of an intended audience (McKinley, 2015). When discussing his beliefs about formative assessment, he explained,

Formative assessment, especially with developing writers, needs to happen before, during and during and during and during the writing process. It gives [students] a chance to know my expectations and what their expectations should be. Involving the kids in the process by having them set daily goals in super important. It's a lot of work but worth it; it pays off.

This reveals Mr. Williams' process-oriented approach to formative assessment and his belief that ongoing assessment should be part of his daily instruction. His practice for assessing student learning and improving learning outcomes involved cycles of verbal and written feedback that focused on a variety of skills (i.e., metacognition, setting goals, genre conventions).

For this study, Mr. Williams worked in partnership with the lead researcher to design two source-based argumentative writing activities. For the initial activity, groups began by reading *Unbroken*, a non-fiction text set during WWII. Groups then selected a topic from the text that they were interested in researching. Some of the topics that groups selected include the role that

women played during the war and the significant impact of prisoner-of-war camps. With two, group-selected articles, groups wrote a collaborative essay that argued why their interest-driven topic made the most significant impact on people’s lives during the text’s time period. The second writing activity was nearly identical to Mr. Nguyen’s first writing activity. That is, the argumentative essay involved two informational articles and focused on the essential question, When do kids become adults? During the second activity, Mr. Williams was also interested in creating a rubric for groups to use to formatively assess their progress during each day of OCW, and he worked with the lead researcher to create this rubric. The rubric featured “We” statements (i.e., “We all used group/teacher feedback to improve our writing”) that Mr. Williams believed to be important aspects of his classroom culture during OCW. Groups were to assess their progress at the end of each class using the four-point Likert scale from “We need lots of support” to “We did this.” Mr. Williams completed each rubric as well to look for areas of disagreement in the assessments.

Table 1.1.

Teachers’ educational contexts

| | Mr. Nguyen | Mr. Williams |
|-----------|---|---|
| State | -Southwest -Annual ELA standardized test | -Northeast -Annual ELA standardized test |
| District | -Significant instruction and assessment structures -Above state average for ELA standardized test scores | -Minimal instruction and assessment structures -Below state average for ELA standardized test scores |
| School | 27:1 teacher-student ratio | 14:1 teacher-student ratio |
| Classroom | -8th grade ELA -Chromebook cart -MacBook and projector | -8th grade ELA -Chromebook cart -PC and projector |

Researcher's Role

The teacher participants interacted with the lead researcher as a university affiliate and as former ELA teacher over the course of several years. That is, the participants accepted her as a legitimate member of the teaching profession who was familiar with the norms and expectations of today's ELA classrooms. The lead researcher made efforts to balance power dynamics by positioning herself as a "collaborator" when designing writing activities and organizational tools to meet teachers' formative assessment needs (Treleaven, 1994) and "coresearcher" when thinking about the data (Karnieli-Miller, Strier, & Pessach, 2009). The camaraderie that developed over time enabled the lead researcher to discuss data interpretations and to ask teacher participants to clarify their responses to interview questions and explain their reasons for specific instructional choices. The researchers also shared manuscript drafts with the teachers for their feedback to ensure that their lived experiences were captured adequately.

Data Collection

To answer the research questions, three sources of data were collected: 1) observations of teachers' formative assessment practices while groups wrote together using Google Docs, 2) post-instruction debriefs, and 3) semi-structured interviews at the beginning and end of the study. The lead researcher studied both contexts during the same academic year, aligning observations with teachers' curricular plans. This method of observation allowed the researchers to gain an in-depth understanding of the social, cultural, political, and historical context, and physical and social environment over time. This also allowed the teachers and their students to become familiar with a researcher's presence in the classroom (Creswell, 2013). Each teacher was observed ten times across two OCW activities (more than 100 hours of observed instruction). Table 1.2 provides an overview of classroom observational data collection.

Table 1.2.

Classroom observational data collection

| | 1st Writing Activity | | | | | 2nd Writing Activity | | | | | Total Time |
|----------|----------------------|------|------|------|------|----------------------|------|-------|-------|------|----------------------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | |
| Nguyen | 5:30 | 4:10 | 4:00 | 3:45 | 3:40 | 5:00 | 5:30 | 4:15 | 4:10 | 3:45 | 43 hours, 45 mins |
| Williams | 7:15 | 6:30 | 5:50 | 5:00 | 4:45 | 6:30 | 5:15 | 7:00* | 7:40* | 5:00 | 60 hours, 45 mins |

Note. Variation in observation time due to invitation for whole-day observation

Observations focused primarily on classes that engaged in OCW to identify each teacher’s common formative assessment practices throughout each class period, from period-to-period, from day-to-day, and from activity-to-activity (see Appendix B for the Classroom Observation Protocol). All observations were audiotaped, allowing researchers to return to each observation for further review. Field notes documented classroom events, including ways that the teacher gained access to student thinking, ways that the teacher provided feedback, and what adaptations teachers made in their instruction. Post-instruction debriefs focused on the joint construction of knowledge between the researcher and the teacher (see Appendix C for the Post-Instruction Debrief Protocol). These debriefs took the form of reflective conversations that helped both the teacher understand what went well during the lesson and what might be an area to change in future lessons. This also helped the researcher understand how contextual factors and beliefs shape teachers’ formative assessment process.

Teachers were interviewed at the beginning of the study and at the conclusion of the study (see Appendix D for the Semi-Structured Interview Protocol). These 50 to 70-minute interviews were audiotaped and transcribed for analysis. The questions were intended to

understand how teachers conceptualized formative assessment, their beliefs about its utility for supporting OCW, and any challenges they experienced.

Study Team

The research team consisted of four members—a doctoral student with experience teaching ELA in a technology-enhanced classroom, a professor of informatics who has studied online writing, a professor of education who has studied teachers’ instructional practices for writing in the secondary classroom, and a director of writing research. Although the data was collected by the lead researcher, the study team coded all data. We used the process of “investigator triangulation” to improve the reliability of this study (Merriam, 2009, p. 216). We also sought feedback from external readers from the field who provided multiple levels of feedback.

Data Analysis

The team began by reading select excerpts from the teacher interviews. While reading, each team member engaged in first cycle coding that included descriptive coding to summarize the data and in vivo coding that “prioritizes and honors the participant’s voice” (Saldaña, 2009, p. 106). The verbatim principle was used to generate codes from teachers’ own words in order to showcase their professional goals, instructional choices, and beliefs about learners and learning. This first cycle of coding yielded a substantial number of diverse codes that were grouped around the same interview excerpts. After the first cycle of coding was completed independently by each member, the team met to define the relevant codes that more specifically related to the research questions and focus of the article. This led us to collapse initial descriptive and in vivo codes into more conceptual codes. During a second cycle of coding, the team utilized pattern coding to condense the collected data and lay the “groundwork for cross-case analysis by

surfacing common themes and directional processes” (Miles, Huberman, & Saldaña, 2014, p. 85). Throughout the coding process, the team engaged in constant comparative analysis (Miles, Huberman, & Saldaña, 2014), where discrepancies in codes were discussed, and refined, as needed.

The researchers ensured the trustworthiness of the data by adhering to three established methods. First, credibility was established through prolonged contact with both school sites and both participating teachers, and by carrying out consistent observation throughout the academic year (Lincoln & Guba, 1985). Second, multiple sources of data were used to triangulate and verify the findings (Hatch, 2002). Lastly, we carried out member checks with participating teachers to ensure the dependability of our findings (Lincoln & Guba, 1985). Because the goal of this study was to understand teachers’ beliefs about and practices for formative assessment in their unique contexts, we did not aim to achieve any quantitative measure of consensus (i.e., interrater reliability) but rather for the study team to reach a collective understanding of these data.

Findings

Our analysis reveals that each teacher's engagement in formative assessment was distinct and was shaped by both their differing contexts and beliefs about writing instruction. Nonetheless, across these different educational contexts, we were able to identify some converging themes and cross-cutting patterns, and three primary patterns emerged in the data. First, formalized, district-level structures for supporting instruction and assessment were powerful forces in shaping formative assessment beliefs and practices during OCW. Second, teachers’ beliefs about the purpose of formative assessment led them to focus on different priorities during writing activities in their classrooms. Third, formative assessment during this

OCW posed similar challenges for both ELA teachers. Here, we begin by showcasing the ways that teachers' contexts informed their beliefs about writing instruction and how this played a role in their formative assessment process as students wrote together online.

A Top down vs. bottom up approach

Despite some contextual similarities (i.e., eighth-grade ELA, use of Chromebooks and Google Docs, source-based argumentative writing activities), each teacher conceptualized formative assessment using a unique lens that was informed by the context in which he taught. In Mr. Nguyen's case, his large school district built significant instructional and assessment structures to support writing instruction and assessment. To support instruction, ELA teachers were encouraged to follow carefully designed curriculum pacing guides that featured mid-unit assignments that often took the form of a short, written response. These mid-unit assignments, according to Mr. Nguyen, provided him an opportunity to formatively assess what students wrote and provided students an opportunity to "correct and fix" their writing to better meet expectations set in the assignment. These contextual factors played a significant role in the way that Mr. Nguyen perceived formative assessment—as "an assignment that goes with each text." To further explain, his grade-level pacing guides aligned with a new textbook that featured thematic units that focused on a focal text or a collection of texts. Within each district-created pacing guide, teachers were given formative (and summative) assessments that were assigned to students to evaluate their learning. Mr. Nguyen drew from these district-level structures when engaging in formative assessment during OCW. As the expert, he assumed responsibility for formatively assessing groups' written assignment that aligned with the unit's text. In this way, his formative assessment practice was teacher-centered and prioritized groups' source-based argumentative essays.

Whereas Mr. Nguyen’s large district created significant structures to support writing instruction and assessment, Mr. Williams’ small district had limited formal structures in place. This afforded Mr. Williams the freedom *and* responsibility for all aspects of his ELA curriculum, instruction, and assessments. The district adopted the state-mandated practice of quarterly assessments that were evaluated by their small team of ELA teachers. When teachers’ professional obligations conflicted, these paper-based assessments would sit untouched, limiting the utility of the student data for meaningful formative assessment as time went by. Because the quarterly assessments provided little opportunity to meet the quickly changing needs of learners within his classroom, Mr. Williams’ used his own sense of what is important for writers and writing when reflecting on the value of formative assessment. That is, his assessment practices were student-centered, often driven by his observations of group dynamics throughout the writing process as students wrote together online.

A means to different ends: Product vs. process

These teachers’ beliefs about the purpose of formative assessment led them to focus on different priorities during writing activities in their classrooms. In Mr. Nguyen’s case, his formative assessment practices were more product-focused and relied on groups’ evolving texts to gather information about their progress toward writing a source-based argumentative essay. To address the complexities of formative assessment during OCW, Mr. Nguyen streamlined his learning objectives to focus exclusively on groups’ production of text (see Appendix E for the tool Mr. Nguyen’s used to organize his ongoing formative assessments of each group during activity #2). This allowed Mr. Nguyen to more easily determine if groups were meeting his learning goals and that helped his process become “a lot more efficient.” This streamlining provided Mr. Nguyen with the bandwidth to check in with each group in his large classes while

managing student behavior, a common concern of teachers who prefer direct instruction (Kennedy, 2016). The shift toward the efficient production of discrete parts of the essay (e.g., introduction, body, conclusion) and away from a more holistic approach that includes writing goals reflection, however, may have inadvertently limited groups' opportunities to assess their own progress and practice some metacognitive skills for writing (Harris, et al., 2019).

Mr. Nguyen also helped organize his classroom activities by setting a pace for group's writing each day. In reporting on his reasoning for this, Mr. Nguyen stated, "This alleviated some of the pressure on me because I wasn't having to go around checking the body paragraphs here, the counterclaim over there. They were all doing the same thing." Although Mr. Nguyen's pacing expectations allowed him to organize his writing conference time, it may have placed undue restrictions on groups' collaborative writing processes. Specifically, research suggests that groups' collaborative writing processes are more recursive and less linear in nature than individual writing processes (Strobl, 2014). So, while this product-focused orientation allowed Mr. Nguyen to gain a solid understanding of each group's writing, making their essays "easier to grade in the end," this approach may have limited the time that students were able to deeply engage in a reflective and recursive writing process. These contextual factors (i.e., district-recommended instructional approach, large class sizes) appeared to play a significant role in Mr. Nguyen's formative assessment beliefs and practices during OCW. His informed changes from activity #1 to activity #2 suggests that context may be an unavoidable force in determining how OCW and other complex, digitally-mediated forms of literacy instruction are enacted.

In contrast to Mr. Nguyen's case, in Mr. Williams' case, his formative assessment practices were process-based in nature and relied on small group discussions to gather

information about group dynamics and their writing progress. At the beginning of the year, Mr. Williams explained his beliefs about formative assessment with the following statement:

Through different pauses during the school year, whether it's something very formal, like the formative assessments that are handed down from the state, or whether it's daily, in-class, by the minute, I do feel like it's my responsibility to know where they were, where they are, and where they're headed.

Although Mr. Williams did administer the top-down formative assessments that were “handed down from the state,” he did not believe this data was a meaningful way to make daily informed decisions about his teaching. Rather, he believed that using real-time evidence of student learning (or gaps in their learning) throughout the writing process was more helpful for making changes in his instruction.

At the end of the study, when asked if his beliefs had changed, this teacher said, “I used to think [formative assessment] was more of a big deal,” and he learned through the study that teachers need to engage in formative assessment iteratively throughout the students’ writing process, particularly to support developing writers. He described his experiences with formative assessment during online group writing as “a challenge that bears fruit.” This life-cycle metaphor, identified through in-vivo coding, reflects his process-based approach, one that also extends beyond the teaching of academic writing skills to the 21st century skills (i.e., teamwork, critical thinking, written communication; P21, 2009). Rather than assuming all responsibility for formative assessment during group writing, Mr. Williams believed that it was important to involve his students. Because of this belief, Mr. Williams provided routinized opportunities for students to evaluate their own learning and make informed improvements to their group dynamics and writing process. (See Appendix F for an excerpt from a jointly completed formative assessment rubric where the circled cells represent the group’s assessment and the

squares represent Mr. Williams’ assessment of the group’s progress.) The broad array of learning objectives reflected in this rubric, encompassing writing and 21st century skills, led Mr. Williams to be challenged by the demands of daily formative assessment. Table 1.3 illustrates a matrix of shared patterns that cut across these diverse cases as well as the variations that emerged according to the specific cultures and histories of these two school contexts.

Table 1.3.

Contextual factors and beliefs shaping teachers’ engagement in formative assessment

| | Mr. Nguyen | Mr. Williams |
|------------------------------|---|---|
| Categories | Codes | |
| Instructional approach | -direct instruction -product-focused | -social constructivist -process-focused |
| Learning objectives | -text production - “a lot more efficient” | -dual purposes -group writing goals |
| Progress monitoring | -teacher-driven -paced -physical proximity, management -used knowledge of students | -physical proximity -discussion - “monitoring from a distance” -used daily knowledge |
| Type and purpose of feedback | -verbal -group accountability | -verbal and written -group engagement |
| Perceived benefits | - “easier to grade in the end” | - “a challenge that bears fruit” |
| Perceived challenges | - “exhausting” -few challenges | - “exhausting” -moderate challenges |

Even the best laid plans

Although both teachers believed that there is value in the formative assessment process during OCW, it appears that the realities of the classroom context, at times, trumped their stated

beliefs. That is, the cognitive, communicative, and physical demands of daily formative assessment for OCW in the middle school classroom were salient experiences for both Mr. Nguyen and Mr. Williams. They shared the common perspective that, unlike teacher-focused activities that do not rely on one-to-one devices, navigating both the typical classroom complexities with the added challenge of assessing groups' progress online was "exhausting." Both teachers made purposeful shifts in their assessment strategies to address this very real challenge.

Whereas Mr. Nguyen's classroom practices initially attended to the socially complex nature of OCW, building in time for groups to create their own writing goals and engage in reflection, over time his approach drew back in line with the district's conceptualization of formative assessment, prioritizing groups' emulation of a model essay. This shift allowed Mr. Nguyen to negotiate his classroom context of 10 or 11 groups (of three students each) in ways that aligned with his larger educational agenda, to teach argumentative writing while attending to the classroom management needs of his large classes. This product-orientation also left Mr. Nguyen with a solid understanding of groups' progress on their essays at the end of the week, allowing him to more easily assign rubric scores to their submitted essays. Mr. Nguyen had to account for an influx of new students to his classroom, leading to regular pivots in his plans and priorities during formative assessment activities. That is, assessing in-coming students' digital skills and understanding of the assignment was a key priority when Mr. Nguyen worked with newly formed groups, whereas other groups did not require this type of attention, further complicating the formative assessment process.

Mr. Williams also was challenged by the ongoing formative assessment process during OCW, and he added structures to his instructional approach during the second activity to

alleviate some of these challenges. Specifically, he set more focused learning objectives for each class period and provided asynchronous written feedback on each group's Google Doc. This shift in approach allowed him to support students' OCW in ways that he found helpful for his teaching practice and that were aligned with his stated commitment to helping students monitor and evaluate their own learning. These structures also supported Mr. Williams' formative assessment process. The written feedback served as a reminder of his prior assessment of each group's writing and helped him see how groups made progress against that assessment throughout the week.

In sum, the cases of Mr. Nguyen and Mr. Williams point to the ways in which contextual factors and teachers' beliefs shape how teachers engage in formative assessment, particularly during OCW. In the case of Mr. Nguyen, the number of structures already in place to assess student writing development, along with his belief that helping students write a source-based argumentative essay was an utmost priority led to a product-oriented, top-down approach to formative assessment. In contrast, Mr. Williams limited structures for writing instruction and assessment and his belief that supporting group dynamics and the writing process was valuable led to a process-oriented, bottom-up approach to formative assessment. Furthermore, for both of these teachers, their differing ways of engaging in formative assessment had implications for student learning. Specifically, teachers that assess group writing for the elements of effective argumentative writing will help students learn how to write this important academic genre. Teachers that assess group writing for effective teamwork and communication throughout the writing process will help students learn how to effectively engage in online collaborative writing.

Discussion

This article begins with a statement on formative assessment as being “a process used by teachers and students during instruction that provides feedback to adjust ongoing teaching and learning to improve students’ achievement of intended instructional outcomes” (Wylie, 2008, p. 2). Our findings suggest that contextual factors shape teachers’ beliefs about and engagement with formative assessment during complex forms of writing instruction. Uncovering the ways that secondary teachers apply principles of formative assessment to students’ development of new, social, and digital literacies in the traditional classroom context is just emerging as an area of research. This article is an initial step towards filling the gap in the literature about the unique contextual factors that shape teachers’ beliefs about and engagement with formative assessment, specifically for OCW. The analysis has provided an unretouched picture of the power of context, paralleling statements made by both teachers, who viewed formative assessment as valuable but challenging given different contextual factors. Yet, through creative ways of navigating their many contexts, both teachers made intentional choices about how to engage in formative assessment that met their wider agendas for writing instruction.

This work has implications for researchers interested in examining assessment practices during contemporary forms of writing in academic spaces. Researchers interested in understanding ways that teachers may support OCW in middle school contexts, according to our findings, should account for the national and local educational initiatives, school policies, and classroom features that are unavoidable aspects of teachers’ professional lives. Our findings, much like those of Alotaibi’s (2018), continue to highlight the contextual factors that teachers must attend to when designing classroom instruction. Despite teaching the same grade level, the same genre of writing, using the same online writing platform, during the same academic year, Mr. Nguyen’s and Mr. William’s beliefs and practices were shaped by what Graham’s (2018)

model refers to as the “Social Environment” and the “Collective History of the Community.” In Mr. Nguyen’s case, he took a product-focused orientation to formative assessment. This was influenced by the district’s historically accepted instructional approach and reflected what he saw as possible in his classroom environment marked by a large teacher-student ratio. In Mr. Williams’ case, he took a process-focused orientation to formative assessment. This was influenced by his long history of using a social constructivist approach to instruction that attended to the changing social landscape of his classroom (Tam, 2000) and his small teacher-student ratio.

This study also extends the body of literature on formative assessment and makes methodological contributions in two ways. First, we used a sampling technique that prioritized variation between the school districts that called attention to the ways that formative assessment is enacted according to contextual factors, but also showcased common challenges. Second, unlike other methods of uncovering teachers’ beliefs and practices, like the survey and focal group data analyzed by Alotaibi (2018) or the elementary teachers studied by Bennett (2015), our extended classroom investigation of two technology-enhanced middle school classrooms provides a rich account of two teachers’ lived experiences. This study also makes a theoretical contribution by highlighting how different approaches to writing instruction manifest in teachers’ formative assessment priorities in technology-enhanced classrooms. For professional developers focused on teachers’ development of effective writing instruction, we suggest that they first understand the environment in which teachers teach and the history of writing instruction in the space. By understanding entrenched beliefs and practices, professional developers may be better positioned to support teachers in (re)envisioning what is possible for writing instruction and assessment in their classroom.

We recommend Schrader's (2015) article as a helpful starting point for teachers who are interested in thinking through the perspectives on learning that lend themselves to the social, collaborative, digitally-mediated classroom. We also recommend Krishnan and colleagues' (2019) article for practical strategies vetted by practitioners for supporting online group writing in middle school. Incorporating OCW into writing instructional practice can be engaging, yet a challenging endeavor. Although the teachers studied here elected to take on source-based, multiple paragraph writing activities across multiple days, teachers new to OCW may find it useful to begin with shorter writing activities, focusing formative assessment efforts on developing students' social and digital literacies (Street, 2014). By drawing on the peer-to-peer writing that youth engage in during extracurricular times and spaces, and by supporting their experiences as collaborative writers, teachers may find new ways of engaging students in today's literacies.

Conclusion

This study's findings suggest that teachers' beliefs and enactment of formative assessment reflected the power of their unique contexts. The level of top-down structures in place for supporting instruction and assessment shaped teachers' priorities during daily formative assessment of groups' progress. Despite teaching in different districts in different states, both teachers experienced shared challenges with the formative assessment process and subsequently made adjustments that aligned with their pedagogical goals and beliefs as teachers. Therefore, these case studies provide further evidence that, in order to support all students' development of the social, participatory, collaborative aspect of today's literacies (Coiro, Knobel, Lankshear, & Leu, 2008), stakeholders must first recognize the value of these literacies through policies that put these new, more collaborative, participatory literacies at the forefront. It may be with such

paradigms shifts, that districts, schools, and classrooms can make shifts toward an instructional culture that fosters the many literacies that exist in today's digitally-mediated world. Only by addressing the larger forces that impact teachers' beliefs and classroom practice may the field of education begin to address the opportunity gaps that exist for meaningful, peer-to-peer learning that can occur through classroom technology use.

Future Direction

This study provides a rich description of the formative assessment beliefs and practices of two ELA teachers in two different contexts. To offer more generalizable findings that extend beyond teachers and schools with similar characteristics, future studies may include a large sample size, extend beyond the ELA classroom, and across multiple grade levels. Although research has suggested that formative assessment is an effective way to support teachers' in making informed changes to instruction (Bennett, 2011; Kingston & Nash, 2011; McManus, 2017; Nicol & Macfarlane-Dick, 2006; Panadero & Jonsson, 2013; Sadler, 1998; Wylie, 2008), there is limited evidence connecting middle school teachers' classroom formative assessment practices during OCW and student outcomes. Studying these relationships is a necessary next step in the research on OCW in the technology-enhanced classroom. An especially valuable approach to studying teacher practices and student outcomes would be to examine the effect of formative assessment on group writers' collaboration patterns and patterns for revision. Yim and colleagues (2017) suggested that specific patterns of online collaboration are associated with stronger writing outcomes. Therefore, systematically examining the effect of teachers' instructional approach on group collaboration serves as an important goal in this research agenda.

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CHAPTER 2

How Different Approaches to Writing Instruction Shape Formative Assessment

During Online Collaborative Writing

Introduction

According to nationally-recognized scholars, formative assessment is an instructional process used by teachers and students to improve teaching and learning (Wylie, 2008). Some primary characteristics of this process include articulating expectations, critique of work in terms of the expectations, providing actionable feedback, and improving instruction and tactics for learning (Andrade & Cizek, 2010). In English Language Arts (ELA) classrooms focused on writing instruction, teachers engage in formative assessment by articulating expectations through modeling of writing, analyzing students' compositions against the expectations, giving feedback that aligns with writing goals, and making informed improvements to their instruction based on students' progress (Andrade & Cizek, 2010). Likewise, students in these classrooms engage in formative assessment as they set writing goals, monitor and reflect on their learning, and make informed changes to their strategies for writing (Andrade, Du, & Mycek, 2010; Butler & Winne, 1995). Thus, formative assessment is an evolving, iterative, and recursive cycle that can position teachers and students as co-evaluators and co-directors of students' writing development (Andrade & Boulay, 2003; Andrade, Du, & Wang, 2008). When enacted successfully, formative assessment not only promotes improved instruction as teachers adapt their approach in response to students' shifting needs, but it can also move students towards writing independence as teachers and students share responsibility for the learning process (Nicol & Macfarlane-Dick, 2006; Pintrich, 2000; Zimmerman & Schunk, 2001).

Although decades of research indicate that formative assessment is an effective way to support teaching and writing development (Bennett, 2011; Kingston & Nash, 2011; McManus, 2017; Nicol & Macfarlane-Dick, 2006; Panadero & Jonsson, 2013; Sadler, 1998; Wylie, 2008), there are gaps in this research. Little is known about how different approaches to writing instruction shape how teachers engage in formative assessment when their students write together online. Furthermore, even less is known about how teachers' ongoing assessments during online collaborative writing (OCW) shape the ways that groups assess their own writing progress. In sum, students' engagement in formative assessment is an unstudied area, particularly during OCW. To address this gap in the literature and to better understand how different approaches to writing instruction shape teachers and students' engagement in formative assessment during OCW, we take a case study approach that focuses on the instructional practices of two eighth-grade English Language Arts (ELA) teachers—Mr. Nguyen and Mr. Williams (all names are pseudonyms). We first study the ways in which the differing approaches to writing instruction influenced how Mr. Nguyen and Mr. Williams engaged in formative assessment to improve their teaching during OCW. Next, we analyze how these teachers' differing approaches to writing instruction also shaped the opportunities afforded to students to use formative assessment to improve their writing.

Two research questions guided this study:

1. How do teachers with different approaches to writing instruction use formative assessment to improve their teaching during OCW?
2. How do student groups in these classrooms use formative assessment to improve their writing?

Conceptual Framework

This study is at the intersection of instruction, assessment, and writing in the technology-enhanced classroom. To provide a comprehensive explanation of the relationship between these three constructs, we draw broadly from Graham’s (2018) writer(s)-within-community model of writing. This model conceptualizes classrooms as writing communities in which teachers serve as “collaborators” and have a significant impact on the work of writer(s) in their shared space. Given this interrelationship between writer(s) and collaborators in classroom writing communities, as Graham’s (2018) model suggests, we understand that how teachers engage in instruction and assessment will play a significant role in how student writing groups’ assess their own writing.

In addition, each community also has its own distinct purposes, tools, members, and collective history (Graham, 2018). Further, each community is influenced by macro-level features of its school environment, such as state standards and district-level accountability mandates, which shape the instructional landscape of the classroom. Hence, Graham’s (2018) model highlights the way that differing contexts in which writing communities are embedded may cause teachers to approach writing instruction in very different ways. For example, a teacher working within a school context that prioritizes direct instruction may take an approach that is more teacher-centered; in contrast, a teacher working within a school context that prioritizes student discussion may take an approach that is more student-centered. Furthermore, research conducted in traditional classrooms suggests that these different instructional approaches to writing shape how teachers and students engage in formative assessment, influencing both how teachers assess student progress and also how students then evaluate their own learning (Calkins, 1994; Cuban, 1993; Hillocks, 1987; Lipson, et al., 2000; Miller, Scott, & McTigue, 2018). In what follows, we describe two specific approaches to writing instruction—a teacher-centered approach and a student-centered approach—and we explore how each of these approaches can lead to teachers and students

engaging in formative assessment in distinct and divergent ways.

A teacher-centered approach to writing instruction

Teacher-centered writing instruction provides students with the information they need to write well (Vaughn, Gersten, & Chard, 2000) and considers knowledge as something that is transmitted to students (Biggs, 1993). This approach to writing instruction typically involves direct instructional methods and specific strategies to scaffold student learning (Vatterott, 1995). One form of direct instruction is modeling, which can be a means of acquiring the literacy skills, beliefs, attitudes, and behaviors of more experienced writers (Rosenthal & Zimmerman, 1978). It is a process in which students “pattern their thoughts, beliefs, and behaviors, after those displayed by one or more models” (Schunk & Zimmerman, 2007, p. 11). When used as a part of the model-practice-reflect instructional cycle, modeling is an evidence-based practice validated by national leaders in secondary writing research (Graham, et al., 2016). One form of scaffolding is front-loading, which is a way to prepare students for the conceptual or linguistic challenges of academic genres (Blachowicz & Fisher, 2009; Fisher & Frey, 2012). Front-loading refers not only to the vocabulary, but also to the forms or structures of language needed to write about source material (Dutro & Moran, 2003) For example, teachers can front-load writing activities by providing text models and sentence starters to off-set the language demands of academic writing (Bulu & Pedersen, 2010). These supports are particularly important for teaching English language learners to write academic genres (Bermudez & Prater, 1990; Echevarria, Short, & Powers, 2003).

A teacher-centered approach to writing instruction lends itself to formative assessment that focuses on the extent to which students can “reproduce” knowledge through their writing (Tynjälä, 1998, p. 211). In a classroom in which there is a teacher-centered approach to writing instruction, social activity tends to be characterized by teacher-led interactions and includes a greater focus on

modeling, as well as other direct instructional methods. However, a teacher-centered approach to writing instruction that uses significant class time for direct instruction, may be at odds with what scholars identify as important characteristics of formative assessment. This concern is validated by studies of teacher-centered approaches to writing instruction. Specifically, teachers who employ this approach are likely to allocate less classroom time for peer-to-peer learning (McLoughlin & Lee, 2007; Woo, et al., 2011) and are more likely to assume full responsibility for formative assessment (Boud, 2000).

A student-centered approach to writing instruction

In contrast to a teacher-centered approach to writing instruction, a student-centered approach emphasizes the collaborative nature of learning. Vygotsky (1978) argued that learning is a social process whereby learners develop understanding through interactions with the people in their learning environment. He also argued that the most effective learning environments provide students with opportunities for discussion. Hence, in a classroom in which there is a student-centered approach, teacher-student and student-student dialogue are prioritized, and knowledge is distributed and shared (Watson, 2001). The benefits of student-centered approaches that prioritize peer-to-peer engagement and classroom discussion are well-documented in the research (Applebee, et al., 2003; Keys, 1994; Kost, 2011; Sadler, 1989; Strobl, 2013; Vatterott, 1995; Yeh, Lo, & Huang, 2011). Although a body of research exists on the benefits of a student-centered approach, challenges exist in adopting this method of writing instruction. For example, teachers need to be able to help students set meaningful goals (Hannafin, Hall, Land, & Hill, 1994) and engage in effective collaboration (Johnson & Johnson, 1991). Teachers also must be able to assess groups' process and written product (Hannafin & Land, 1997).

A student-centered approach to writing instruction lends itself to formative assessment that prioritizes the extent to which students are engaging in the discourses, strategies, and practices of more experienced writers (Dalton & Tharp, 2002). In a classroom marked by a student-centered approach, teachers may look to student discourse as a way to understand their learning. Furthermore, by providing students with an opportunity to engage in classroom talk about writing, teachers can help students practice self-regulation skills that are important for writing development (Nicol and Macfarlane-Dick, 2006). However, a student-centered approach may not provide students with the writing strategies they need to learn challenging academic genres like source-based argumentative writing (Olson & Land, 2007) and may not be helpful for students who are still developing self-regulation skills (Schunk & Zimmerman, 1997; Winne, 1997).

As mentioned previously, Graham's (2018) model is useful in conceptualizing the ways in which teachers' approaches to writing instruction may shape both their own formative assessment practices and the formative assessment practices of their students. And a teachers' approach to writing instruction is an important factor to consider when investigating teaching and learning because research has found that different approaches to writing instruction shape classroom discourse (Langer, 1995, 2002; Lee & Krashen, 2001), writing tool use (Russell, 1997), writing feedback (Ferris, 2006; Hyland & Hyland, 2006), and assessment (Dalton & Tharp, 2002; Watson, 2001). However, the current literature focuses mainly on traditional classroom spaces and no studies to date have examined the ways in which middle school ELA teachers' formative assessment practices shape how students assess their progress during OCW. In the present study, we address this gap and extend previous work by 1) illustrating the ways that two ELA teachers with different approaches to writing instruction engage in the formative

assessment process during OCW in their middle school classrooms, and 2) by analyzing how these different approaches to writing instruction also shape the formative assessment strategies of students as they write together online.

Method

We take a multiple case study approach (Yin, 2017) to examine the formative assessment processes used by two teachers, Mr. Nguyen and Mr. Williams, and their students, during OCW. Situated within each teacher's ELA classroom, this multiple case study also examines the formative assessment processes taken by two student writing groups, comprised of three students in each group. This case study approach supports the examination of "real-life, multiple bounded systems (cases) over time, through detailed, in-depth data collection involving multiple sources of information" (Creswell 2013, p. 97). This in-depth examination helped the researchers to build descriptive accounts of the frequency, intensity, and timing of the formative assessment strategies used by both teachers and their students in their different school contexts (Hatch, 2002). In so doing, we showcase the ways that teachers' approaches to writing instruction shaped their formative assessment process and how this, in turn, influenced the ways in which student writing groups assessed their writing progress. Though there are limitations to generalizability when using a case study approach, our goal is to provide a rich account of the ways that two teachers and two writing groups engaged in formative assessment during OCW.

School Contexts and Participating Teachers

To understand how teachers with different instructional approaches use formative assessment to improve their teaching during OCW and how this may shape students' formative assessment approach, we situate our case study within two school contexts. Our analysis focuses on Mr. Nguyen and Mr. Williams, both eighth-grade ELA teachers, and one student writing

group consisting of three students per group. The study took place during the 2018-2019 school year. In what follows, we describe our selection criteria for the teachers who participated in the study and then we describe each teachers' school context.

Initial teacher selection criteria included the following characteristics: extensive experience teaching ELA at the secondary level, access to one-to-one technology in the classroom, an administrator-endorsed history of effective instruction, an interest in designing source-based argumentative writing assignments that groups would write together using Google Docs, and an interest in formative assessment to support teaching and learning during this form of writing. Then, among teachers who met the initial sampling criteria, we selected two participants using purposive sampling for maximum variation. The following criteria guided the selection process: geographic location, student population, school performance, class size, and level of experience teaching with one-to-one technologies. This sampling strategy allowed for the analysis of two comparative cases from which researchers could identify both shared patterns and unique variations of how teachers and students engaged in formative assessment (Creswell, 2013; Palinkas, et al., 2015; Patton, 2002). Furthermore, in a previous study (i.e., Chapter 1), analysis revealed that each teacher's approach to writing instruction was shaped by the contexts (i.e., department, school, district, state) in which they taught. Furthermore, the two contexts in which Mr. Nguyen and Mr. Williams taught differed in significant ways. These differences reflected our aim of maximum variation in our sample. We describe each of these contexts briefly, below.

The context of Mr. Nguyen. Mr. Nguyen taught eighth-grade ELA in a large urban public school district located in the southwest region of the U.S. with the following student demographics: free or reduced price lunch (70%), Hispanic (54%), Asian (34%), and English

language learners (39%). The middle school where Mr. Nguyen taught was a consistently high-performing, Title 1 school that served over 800 seventh- and eighth-grade students. English Language Arts (ELA) teachers at his school site had classroom Chromebook carts for students' use during instruction. The average teacher-student ratio at the school was 27:1 and, in the class we observed, Mr. Nguyen taught 34 students.

The context of Mr. Williams. Mr. Williams' taught eighth-grade ELA in a small rural public school district located in the northeast region of the U.S. with the following student demographics: free or reduced price lunch (100%), White (94%), Hispanic (2%), and English language learners (0%). The middle school where Mr. William taught was a Title 1, combined middle-high school that served over 500 students in grades 6-12. ELA teachers also had access to a dedicated classroom Chromebook cart for students' use during instruction. The average teacher-student ratio at the school was 14:1, and, in the class we observed, Mr. Williams taught 17 students.

In the following section, we provide an overview of each teacher's approach to writing instruction. Then, we then describe the student focal groups that were also analyzed in this study. This overview is intended to contextualize the study's findings.

A teacher-centered approach: Mr. Nguyen

Mr. Nguyen's district provided significant resources to support his instruction and assessment. These structures included a new standards-aligned textbook, district-developed pacing guides which include formative and summative assessments for each unit of study, and a widely-adopted instructional approach for reading and writing (i.e., the Gradual Release of Responsibility; e.g., Fisher & Frey, 2015; Pearson & Gallagher, 1983). In this model of instruction, teachers begin with direct instruction, transmitting information that students need for

learning (De Smedt & Van Keer, 2014; Lave, 2009). Consistent with this model, Mr. Nguyen was often observed beginning class with teacher-centered instruction. For example, he would model how groups might write a paragraph using color-coded model essays as a visual aid, an evidence-based practice for supporting writers, particularly English language learners (Olson, et al., 2018). See Appendix F for a color-coded model essay. Mr. Nguyen also scaffolded students' linguistic and grammatical learning through the use of sentence starters. These front-loading activities (Blachowicz & Fisher, 2009; Fisher & Frey, 2012) were also recommended by a language-focused program adopted by the district. Although the pacing guides afforded students opportunities to engage in collaborative discussions and to create multimedia presentations as a way for teachers to formatively assess their learning, many of these mid-unit assessments involved independent writing.

Mr. Nguyen's teacher-centered approach to writing instruction shaped his view of formative assessment. Specifically, he viewed the low-stakes formative assessment assignments as a way for him to assess student learning, and for students to "correct or fix" their writing to build their knowledge for what was expected on the unit's summative assessment. To gather information about each of his eleven groups, Mr. Nguyen would review the group's evolving text once per class period. When he met with each group, he would either ask a student to read their newest paragraph aloud or he would read it to himself. This helped Mr. Nguyen assess the paragraph for important elements of source-based argumentative writing (i.e., claim, evidence, reasoning). If the text included these macro-level writing features, his feedback would focus on more micro-level features like punctuation or capitalization. When Mr. Nguyen noticed in his conferences that several groups were struggling with a specific aspect of the assignment (i.e., writing a thesis statement), he would "pause" groups' interactions to reteach the skill, often using

a sentence-starter to reduce the language demands of the genre. This teacher-led approach meant that Mr. Nguyen’s students were new to peer-to-peer collaboration at the beginning of this study. For the study, Mr. Nguyen worked in partnership with the lead researcher to design a source-based argumentative essay activity that aligned with his pacing guide and would be written by student writing groups in a shared Google Doc. In this essay, groups responded to the essential question, “When do people become adults,?” and they used evidence from at least two of the five informational sources provided in their textbook.

A student-centered approach: Mr. Williams

Compared to the district where Mr. Nguyen taught, the district in which Mr. Williams taught had minimal formal structures for writing instruction and writing assessment support. Consequently, Mr. Williams had both the responsibility and the freedom to design his eighth-grade curriculum, instruction, and assessments. Through a countywide educational service, Mr. Williams borrowed class sets of texts, used the school library for independent book study, and relied on online resources that were paid for by the district (i.e., Renaissance Learning, ABC Clio research database). Taken together, this variety of resources helped Mr. Williams create literary and informational units that were based on a focal text or text set. Mr. Williams’ writing instructional approach was aligned with social constructivist principles of teaching and learning (Vygotsky, 1978). His instruction was dependent on his sociocultural context, responsive to factors within his classroom, and varied according to his interpretation of student needs (Fang, 1996). In this way, Mr. Williams’ approach was student-centered and included peer-to-peer and teacher-group interactions (Au, 1998; Vygotsky, 1978).

Mr. Williams’ assessments of student learning occurred during his conversations with them. To gather information about each of his seven groups and to provide feedback when he

believed it was needed, Mr. Williams would confer with each group twice per class period. During these conferences, he would often use “step-in and step-back moves” (Englert, Mariage, & Dunsmore, 2008, p. 210). First, he asked clarifying questions about the direction of the text or about a group’s collaborative progress. When he believed groups needed his support, he would provide verbal feedback on groups’ writing and aspects of their group dynamics. At times, Mr. Williams was also observed “stepping back” from the group’s discussion. When Mr. Williams stepped back, he would actively listen to the group discussion of a trouble source in their writing without interjection. If the group was able to work through the trouble source, Mr. Williams would move to a different group. According to Mr. Williams, this active listening helped him avoid “giving it all away,” as he said, by encouraging students to draw on their own understandings of writing before he provided his perspective on their evolving text.

Mr. Williams’ student-centered approach to writing instruction also shaped his view of formative assessment. Particularly, Mr. Williams’ viewed formative assessment as “a challenge that bears fruit” and explained that ongoing assessment needed to happen iteratively throughout the students’ writing process. His broader focus on the interpersonal skills he believed students would need to be college and career ready meant that his assessments of learning often extended beyond what is emphasized by the Common Core State Standards for reading and writing (CCSSO, 2010). For the study, Mr. Williams worked in partnership with the lead researcher to design a source-based argumentative essay activity that aligned with a unit of study focusing on a non-fiction text set during WWII (i.e., *Unbroken*) and would be written by student writing groups in a shared Google Doc. For this essay, groups first researched an interest-driven topic related to the setting of the biography with support from Mr. Williams and the school’s librarian.

Then, groups used textual evidence from at least two sources to support their argument about the way that their topic made the most significant impact on people’s lives during WWII.

In sum, Mr. Nguyen’s and Mr. Williams’ different approaches for writing instruction shaped the frequency and intensity of the strategies they used to formatively assess groups. In Table 2.1, below, we provide a snapshot of each teacher’s strategies for formative assessment during each of their first 50-minute class periods of this activity.

Table 2.1.

Formative assessment process during the first collaborative writing class period

| Teacher | | Modeling for whole class | Reading group's text | Asking group general questions | Asking group clarifying questions/discussion | Answering group questions | Providing group feedback | Reteaching for whole class |
|----------|---|--------------------------|----------------------|--------------------------------|--|---------------------------|--------------------------|----------------------------|
| Nguyen | X | | x | | | | | X |
| Williams | | | x | x | x | x | X | x |

Note. Each x and X represent the activities related to formative assessment. x=low frequency (less than 5 minutes); X= moderate frequency (between 5-15 minutes).

Table 2.1 shows that, on the first day of OCW, both teachers engaged in two common formative assessment strategies—reading the focal group’s text to understand their progress and reteaching to better support groups’ writing. Although Mr. Nguyen and Mr. Williams shared two strategies, on day #1, their formative assessment practices were remarkably different and aligned with their approach to writing instruction. In Mr. Nguyen’s case, he used whole class modeling and reteaching, teacher-centered methods, to support groups’ writing of their opening paragraph. In Mr. Williams’ case, he used questioning, responding to questions, and providing feedback, all student-centered methods, to support groups’ collaboration as they wrote their opening paragraph or selected textual evidence.

Two Student Focal Groups

Both teachers created student groups that generally included three students whom they believed would work well together. Although students were provided with the opportunity to self-select into their writing groups, both teachers provided important support to ensure that student grouping was done in a way that helped all students learn. Two groups (of three students each) were selected to participate in the study. Initial selection criteria included the following: scheduled for a general education ELA class taught by a participating teacher, consistent school attendance, and experience writing with Google Docs. Then, among groups that met these criteria, the researchers worked with each teacher to use typical case sampling to select one focal group from each context (Etikan, Musa, & Alkassim, 2016). The following criteria guided our selection of each focal group: average writing proficiency and/or average grade in ELA and general willingness to communicate and collaborate in their group. This sampling technique allowed the researchers to explore typical groups' formative assessment experiences during OCW in their unique classroom contexts. In Mr. Nguyen's classroom, the In-Flux Group was selected to serve as a focal writing group. This group includes three students who were former English language learners but who were all redesignated as English language proficient by the district. The group's descriptive title reflects that one student joined the group after another student left due to attrition. In Mr. Williams' classroom, the Synergy Group was selected. The three students were all native English speakers and included one neurodiverse student. Over time, these students learned how to work well together as their group name suggests.

Data Collection

Mr. Nguyen and Mr. Williams' classrooms were studied throughout the 2018-2019 academic year. The timing of observations aligned with each teacher's curricular plans, and the methods of observation allowed the lead researcher to gain an in-depth understanding of the

norms, routines, and classroom culture over time. Longitudinal, classroom-based observations also allowed the teachers and their students to become familiar with a researcher's presence in their classroom (Creswell, 2013).

We conducted semi-structured interviews with teachers in the fall and the spring of the study year to create a detailed picture of their approach to writing instruction and assessment. In addition, we captured video screencasts of the student writing groups' real-time talk and collaborative writing across a week-long, source-based argumentative writing activity to gain a clear sense of how they assessed their progress. To augment our understanding of the interview data and screencasts, the lead researcher took observational field notes of the daily classroom activities, norms, and strategies used for formative assessment by teachers and their students.

Data Analysis

Audio of group discourse and interactions with their teacher, and video of groups' collaborative writing was analyzed using MaxQDA, a coding software capable of supporting screencast analysis (Saldaña, 2009). Process coding was used to illustrate 1) the communicative actions within groups, 2) interactions between focal groups and their teacher, and 3) groups' writing processes (Miles, Huberman, & Saldaña, 2014). The first cycle of coding yielded a substantial number of codes that were then collapsed into more conceptual codes that showcased teachers' and students' formative assessment processes. We then created matrices of the frequency and intensity of formative assessment strategies. This method supported systematic visualization (Miles & Huberman, 1994) and cross-case analysis (Miles, Huberman, & Saldaña, 2014).

A team of four experienced writing researchers, including two university professors, one director of writing research, and one doctoral student, coded the teacher interview transcriptions.

The coding team's first cycle of inductive coding included descriptive coding to summarize the interview data and in vivo coding that "prioritizes and honors the participant's voice" (Saldaña, 2009, p. 106). The verbatim principle helped generate codes from teachers' own words in order to showcase their professional goals, instructional choices, and classroom experiences. During a second cycle of coding, the team utilized pattern coding to condense the collected data and to also support cross-case analysis (Miles, Huberman, & Saldaña, 2014, p. 85). Throughout the coding process, the team engaged in constant comparative analysis (Miles, Huberman, & Saldaña, 2014), where discrepancies in codes were discussed, and refined, as needed.

The researchers ensured the trustworthiness of the data by adhering to three established methods. First, credibility was established through prolonged contact with both school sites and both participating teachers, and by carrying out consistent observation throughout the academic year (Lincoln & Guba, 1985). Second, multiple sources of data were used to triangulate and verify the findings (Hatch, 2002). Third, we carried out member checks with participating teachers to ensure the dependability of our findings (Lincoln & Guba, 1985).

Findings

Our analysis revealed that teachers' formative assessment practices during OCW were distinctly aligned with their approaches to writing instruction. Nonetheless, across these different school contexts, we were able to identify some converging themes and cross-cutting patterns. Specifically, both Mr. Nguyen and Mr. Williams engaged in similar strategies for formative assessment, such as modeling and providing feedback (Andrade & Cizek, 2010). However, despite these broad similarities, the reasons why each teacher engaged in these strategies were remarkably different. Table 2.2 provides an illustration of the variations in the frequency,

intensity, and timing of the strategies for formative assessment that both teachers used through a week-long OCW activity.

Table 2.2.

Teachers' strategies for formative assessment during a week-long OCW activity

| Teacher | Modeling for whole class | Reading group's text | Asking group general questions | Asking group clarifying questions/discussion | Answering group questions | Providing group feedback | Reteaching for whole class |
|----------|--------------------------|----------------------|--------------------------------|--|---------------------------|--------------------------|----------------------------|
| Nguyen | XXxXx | xx | | | | xx | Xx X |
| Williams | xx | xxxx | x x | xx | x | XxxXX | xx |

Note. Each X/x column segment represents one day of the week where the X/x represents observed strategies. Each x=low frequency (less than 5 total minutes); each X= moderate frequency (between 5-15 total minutes).

Table 2.2 shows that both Mr. Nguyen and Mr. Williams engaged in whole class modeling and reteaching. Both teachers also read the focal groups' text and provided focal groups with feedback. However, Mr. Nguyen spent significantly more time modeling and reteaching, each of which are consistent with a teacher-centered approach to writing instruction. In contrast, Mr. Williams spent more time reading the focal group's text, asking and answering the group's questions, and providing feedback, all in line with a student-centered approach to writing instruction.

To give a better sense of the variation in Mr. Nguyen's and Mr. Williams' strategy use, we provide a detailed analysis of three strategies below. First, we explore both teachers' approaches to modeling and the different reasons why they used this instructional strategy. Next, we describe the sources of information that both teachers used for providing feedback to groups. Finally, we unpack the scaffolding techniques that both teachers used with groups. Throughout

our analysis, we describe how these different enactments of formative assessment strategies by Mr. Nguyen and Mr. Williams afforded unique opportunities for students' writing development.

Modeling: Prioritizing composition vs. prioritizing revision

Our analysis revealed that teachers' practices reflected the characteristics that Andrade and Cizek (2010) say are important elements of the formative assessment process. Specifically, both teachers spent time articulating their expectations through modeling and through the use of a model essay. However, the timing and the function of this modeling differed. That is, Mr. Nguyen used modeling to support groups' composition of the source-based argumentative essay whereas Mr. Williams used modeling to support groups' revision of their essay.

Mr. Nguyen's teacher-led approach in the classroom reflected his adoption of the district's recommended model for reading and writing instruction—Gradual Release of Responsibility (Fisher & Frey, 2015; Pearson & Gallagher, 1983). This model of instruction encourages teachers to provide a structured and scaffolded approach that begins with direct instruction for learning. Consistent with this model, Mr. Nguyen provided significant modeling at the beginning of each class period to direct groups' writing activities. One way he modeled source-based argumentative writing was by using his projector to draft a body paragraph while discussing the connections between his claim, evidence, and commentary, all important aspects of source-based argumentative writing. By beginning each class with modeling of composition practices, groups were given a detailed roadmap to follow when they wrote their own essay. However, time in the classroom is a finite resource. The time Mr. Nguyen spent on modeling was inversely related to the amount of time that could have been spent engaging in group discussion or teacher-group interactions. In this way, Mr. Nguyen's focus on modeling shaped how much time groups spent writing, revising, and talking about their evolving texts.

In contrast to Mr. Nguyen, Mr. Williams' student-led approach in his classroom aligned with social constructivist principles of teaching and learning. During these first few days, Mr. Williams was observed engaging in writing conferences where he used questioning as a strategy for uncovering groups' approaches to argument writing. Through these small group interactions, he gained an understanding of one common challenge (e.g., textual evidence as a stand-alone quotation). He improved his writing instruction by modeling how to embed a quote into a sentence. After this modeling, groups made important revisions to better integrate textual evidence. Groups were also afforded a great deal of time for collaborative writing, and were encouraged to engage in writing discussion and in-draft revision. This time, according to Mr. Williams, was integral for building students' capabilities for writing-related communication, collaboration, and provided formal opportunities to formatively assess their progress.

Feedback: Prioritizing the text vs. prioritizing the talk

In addition to modeling, another formative assessment strategy that both Mr. Nguyen and Mr. Williams engaged in was the provision of feedback to their student groups. However, as was the case with their enactment of modeling, Mr. Nguyen and Mr. Williams used this strategy in divergent ways, and analysis revealed that several factors shaped how teachers provided feedback. We draw on specific episodes from each classroom to illustrate how Mr. Nguyen and Mr. Williams used different sources of information to assess their students' learning. Specifically, Mr. Nguyen looked to group's written texts and Mr. Williams listened to student-led talk when assessing student learning and for providing feedback.

When meeting with his 11 groups every day, Mr. Nguyen reviewed and based his verbal feedback on each group's writing progress. He generally compared each essay's content to the district-provided rubric for argument writing. As the week went on, he noticed a trend wherein

some groups required more support than others to reach acceptable levels of progress on the rubric. This rubric served as a formative assessment tool and allowed him to tailor his small group time to meet groups' specific learning needs. In the exchange below, Mr. Nguyen provides feedback to the In-Flux group. He directs students' attention to classroom resources in order to support their revision, and he focuses on both micro-level and macro-level writing features.

NGUYEN: ((Reads essay silently))

NGUYEN: Okay girls, I'm going to tell you, if you don't mind, in that last sentence=[pause] <you have the wrong 'there.'> That's the wrong 'there.' What 'there' do you=need?

ASHLIN: The E I R.

NGUYEN: Yeahyeah, the E I R. Very good↑ ((referencing their finished=essay)). I like that↑. But review this ((referencing the model essay)) and see about your=<commentary>.

JOSIE: Oh yeah, we have to put something else here. Connecting it to what's going=on here ((referencing the paragraph's content)).

Mr. Nguyen's text-based entry point into student learning helped prioritize what mattered in his classroom—to support all groups' successful completion of the source-based argumentative essay. This goal was accomplished by all of his students by the end of the week. In part, this exchange also reflects the feedback “transmission process” that is a common feature of teacher-led formative assessment (Nicol & Macfarlane-Dick, 2006, p. 200). Mr. Nguyen perceived OCW as having the added bonus of providing his students with an interesting opportunity to practice 21st century skills. For example, they used *critical thinking skills* to best support group writing goals; *collaboration skills* on how to add, edit, and delete text; and *communication skills* when the text did not align with one's own sense of author's craft (Krishnan, et al., 2019).

Unlike Mr. Nguyen, whose feedback to students was primarily based on his analysis of their written text, Mr. Williams analyzed group talk when crafting feedback for groups. Mr. Williams' small class sizes and his student-centered approach generally afforded him more class time for group conferencing. He used questioning as a strategy to uncover groups' learning of source-based argumentative writing as well as their learning of 21st century skills. Students spent time assessing their own progress, focused on the writing process, and become more strategic in their approach to collaborative writing over time. In the following interaction, Mr. Williams' met with the Synergy Group on the first writing day. The three students had completed a reflection rubric about their written text, their writing process, and their progress as collaborative writers (see Appendix G for an excerpt of the reflection rubric). In the interaction below, Mr. Williams asked the group to share their reasoning for assessing their group communication as "3 out of 4," a measurement strategy that Mr. Williams encouraged his groups to use during their reflections. He also modeled a verbal strategy for ensuring that all students have their individual needs met in the group and explained the value of their group reflections.

WILLIAMS: Okay, tell me what you gave yourself for communication. ((reads=
=reflection form)) Oh, 3 out of 4.

KEVIN: 'Cause Shawn didn't always talk.

WILLIAMS: ((Looking at Shawn)) Okay, so you could say, 'You don't always give me=
=time to think about my answers.'

SHAWN: Yeah, that sounds good.

WILLIAMS: ↑And thanks, okay. ↑That's how we learn to work together.

Here, Mr. Williams stressed the value of student-led talk, and used the group's dialogue as a way to normalize the struggles of collaboration and help one student advocate for himself when engaging in collaborative work. This feedback was based on his assessment of student talk and

reflected Mr. Williams' approach to writing instruction that extends beyond state standards for writing (CCSSO, 2010) and incorporates more applied skills (P21, 2009).

These episodes from Mr. Nguyen's and Mr. Williams' classes demonstrate how both teachers prioritized different aspects of online collaborative writing in their feedback. These priorities were directly related to each teacher's distinct approach to writing instruction. In Mr. Nguyen's case, his teacher-centered approach was anchored by a model essay, an evidence-based strategy (Orsmond, et al., 2002). The model essay helped the In-Flux Group write a source-based argumentative essay that, according to Mr. Nguyen, needed minor editing by the end of the week. Mr. Nguyen's assessment that the group only needed minor editing was particularly reflective in their essay's written conventions, which received a score of 5 out of 6 points on the rubric. In Mr. Williams' case, his student-centered approach helped groups set writing goals and engage in reflection. This emphasis on student goals and self-reflection supported the Synergy Group in identifying ways that they could communicate and collaborate more effectively. Their growing ability to work well together was especially evident in their groups' final OCW day's reflection rubric where the group's communication efforts were acknowledged by both Mr. Williams and the members of the Synergy Group selecting the "We did this" category of this rubric (see Appendix G). However, the group's essay scored 3.5 out of 6 points on each of the four rubric criteria (i.e., Content and Analysis, Command of Evidence, Coherence, Organization, and Style, and Control of Conventions). These scores suggest that, despite working effectively as a group, their source-based argumentative writing had room for improvement.

Scaffolding: Prioritizing tools for emulation vs. prioritizing tools for collaboration

The ways in which Mr. Nguyen and Mr. Williams approached writing instruction and formative assessment had implications for the ways that groups engaged in their own

assessments of progress. Both groups used similar formative assessment strategies (i.e., rereading, discussing, monitoring and revising) and had access to common tools (i.e., model essay, goal setting/reflection space within the Google Doc assignment). However, each group used the tools that best aligned with their teacher's priorities for instruction. In other words, teachers' differing approaches to writing instruction, and ways of engaging in formative assessment, shaped the ways that groups engaged in formative assessment during OCW.

For Mr. Nguyen, scaffolding source-based argument writing was a priority because it allowed his students to create written products that aligned with the district pacing guide and national standards for writing. This emphasis on external guidelines also led Mr. Nguyen to promote students' use of certain types of tools that would achieve his objectives, such as the model essay which provided a visual guide for emulating effective argumentative writing. However, for Mr. Williams, scaffolding collaboration during the writing process was a priority because it allowed his students to engage in the team work and the discourse reflective of 21st Century learning. This, in turn, led Mr. Williams to promote student's use of different types of tools than Mr. Nguyen, such as their use of the goal setting and reflection space within their Google Doc (see Appendix H for an example Google Doc activity that features goal setting and reflection in bold). We now describe how the specific tools that each group took-up mediated their assessment-related group talk. We provide Table 1.3 as a way to illustrate the frequency and intensity of formative assessment strategies used by the In-Flux Group and the Synergy Group.

In Mr. Nguyen's classroom, the In-Flux Group's experiences with source-based argumentative writing were scaffolded in two ways. The model essay served as a structural and conceptual scaffold, and the sentence starters served as lexical and grammatical scaffolds. The

constructivist writing pedagogy that places value on student goal development and reflection. Although the Synergy Group set both text-based goals (i.e., “not being repetitive”) and team-based groups (i.e., “Staying on track and keeping others on track”), their assessment of progress focused on collaboration and communication improvements (i.e., “I learned how to work together with others and how to share my ideas!”). They also saw a need to develop these skills in the future (i.e., “I’d like to be more open when it comes to my ideas”). This collaboration-related priority was echoed by their teacher who stated, “I think it’s a college and career skill, right? That they’re going to have to work with other people and they’re going to have to learn how to set group goals.” The goal setting and reflection tools, in Mr. Williams’ classroom, afforded students the opportunity to engage in process-focused formative assessment that resulted in more improvements to their learning of 21st century skills. Furthermore, the analysis of the formative assessment strategies used by the In-Flux Group and the Synergy Group suggests that students engaged in ongoing assessments to improve their writing according to their teacher’s specific instructional approach. A complete analysis that highlighted the changing in groups’ source-based argumentative writing across two week-long activities is provided in a different study (see Study 3).

Table 1.3.
Groups’ strategies for formative assessment observed during focal group interactions

| Writing Groups | Setting writing goals | Rereading; Evaluating writing | Discussing/ Questioning text-level features | Discussing/ Questioning sentence-level features | Revising from group eval. | Revising from teacher eval. | Progress monitoring (team dynamics, goals) | Receiving peer feedback (from other group) | Giving peer feedback (to other group) |
|----------------|-----------------------|-------------------------------|---|---|---------------------------|-----------------------------|--|--|---------------------------------------|
| Synergy | x | xxxXx | x | x | xxx x | XxX | xxxXX | X | |
| In-Flux | | Xxxxx | xxx | x xx | xxx x | x x | xxxxX | | X |

Note. Each x and X represent the observed activities related to formative assessment. Each x column represents one day of the week. x=low frequency (less than 5 total minutes); X= moderate frequency (between 5-15 total minutes)

Discussion

Teachers with teacher-centered or student-centered approaches to writing instruction may use similar strategies for formative assessment when their students write together online. However, according to the results of this study, how (and how much) teachers use these strategies is a function of their instructional priorities. Mr. Nguyen began class by spending ample time modeling and discussing the tools (i.e., model essay, sentence starters) that could support groups' writing of source-based argumentative essays. For Mr. Nguyen's In-Flux Group, teacher modeling, the model essay, and sentence starters supported their composition of the essay, consistent with what research says are effective practices for supporting English language learners (Bermudez & Prater, 1990; Bulu & Pedersen, 2010; Echevarria, Short, & Powers, 2003); Mr. Nguyen's text-based feedback also supported students' own assessments of where they needed to "put something" when revising. Because Mr. Nguyen prioritized students' successful composition of source-based argumentative writing, the In-Flux Group, like the rest of the class, used the tools most useful for accomplishing this goal. Although each group's Google Doc assignment included space for groups to set writing goals and reflect on their learning, the priorities set during classroom instruction and assessment did not require the use of these tools. Because of this, the goal setting and reflection tools went largely unused throughout this week.

In contrast to Mr. Nguyen's approach that began with modeling, Mr. Williams first asked groups to discuss their initial plans for their essay, an evidence-based strategy (Santagelo, 2014) that supports collaborating writers (Strobl, 2013). Modeling in Mr. Williams' class was used as a way to scaffold groups' revision. Also, his assessments of group talk informed his feedback for improving their collaboration and communication skills. For the Synergy group, the Google Doc space and time dedicated to goal-setting and reflection provided a way to formalize a specific

agenda for their interactions, allowed them a way to see how they were meeting group goals, and facilitated their communication about future goals. Although the Synergy Group and the rest of the class had access to a model essay, it was not used often as a resource for their writing. Further, the Synergy Group engaged in what research says are important components of process-based writing (Graham, et al., 2016), yet the Synergy Group's essay rubric score was lower compared to the In-Flux Group's essay rubric score. Despite this reality, the Synergy Group engaged in what national leaders recognize are some of the larger purposes for writing:

Beyond the traditional purposes that are identified in school, purposes for writing include developing social networks; reasoning with others to improve society; reflecting on experience; communicating professionally and academically; and building relationships with others. (NCTE, 2016)

In a previous study (i.e., Study 1), we highlight the contextual factors that afford or constraint teachers' abilities to reach beyond the traditional purposes of writing in their classrooms. In this study, the Synergy Group was afforded opportunities to use language and literacy in ways that extended beyond the traditional purposes of writing seen in schools. This is not to say that developing strong academic writing skills is somehow less important. We suggest, however, that teachers who are interested in incorporating OCW into their instructional practice consider using a blended approach. In this approach, teachers may support development of both writing *and* writer(s) in their technology-enhanced classrooms.

This study contributes to the literature by providing a rich account of two eighth-grade ELA teachers' formative assessment process when student writing groups co-constructed source-based argumentative essays. Although work on Google Docs for collaborative writing is gaining traction (e.g., Calvo, et al., 2010; Kai-Wai Chu & Kennedy, 2011; Krishnan, et al., 2018; Krishnan, et al., 2019; Suwantarathip & Wichadee, 2014; Yim, et al., 2017; Zhou, Simpson, &

Domizi, 2012), the ways that teachers formatively assess collaborative writing remains understudied. Therefore, this work has implications for researchers interested in investigating the ways that ongoing assessment of collaborative writing shapes student experiences. Future work may address how different approaches to writing instruction shape teachers' formative assessment strategies during online collaborative writing in different content areas or at different grade levels. Further, studying the relationships between instruction, assessment, and writing outcomes is a valuable next step for researchers concerned with new literacies, new practices, and new opportunities for student writing development.

Given the recent estimates on the use of Google applications, including Google Docs, for learning in schools (Finn, 2018), this research has implications for school leaders and professionals who support teaching. Specifically, teacher professional development may be designed to support teachers' reflection on their approach to writing instruction and assessment. With a nuanced understanding of how different types of writing instruction shape the nature of student experiences during OCW, teachers may gain greater awareness of how they may incorporate this form of writing into their practice or changes they might make to their existing approach to writing instruction.

Given that both a teacher-centered approach and a student-centered approach have affordances for student writing development, teacher professional learning experiences may be designed to support teachers' development of a blended approach that draws on the effective characteristics of each approach. Specifically, teachers who are interested in incorporating OCW into their practice may be interested in learning how to balance the amount of time they spend modeling with the time they spend in small group conferences. Additionally, teachers may be interested in designing rubrics and other formative assessment tools that help them not only

focus on groups' written texts but other their group dynamics. These rubrics, too, may be designed with their students' in mind, using emojis and text, like Mr. Williams' rubric, to help both groups and teachers assess their progress during OCW.

Conclusion

This study suggests that teachers' approach to writing instruction shapes the frequency, intensity, and timing of their formative assessment strategies when students write together online. How student focal groups assessed their writing and the improvements they made were driven by, what Graham (2018) asserts, are the resources and values of the collaborators (i.e., teachers) and their writing communities. We found that a teacher-centered approach was associated with more time spent was on whole-class modeling, and feedback that drew student's attention to salient features of a model text to support source-based argumentative writing. Despite the affordances of this approach for teaching academic writing, particularly for English language learners, it may limit time spent on peer-to-peer interaction, which is a central aspect of online collaborative writing. A student-centered approach was linked to more time spent on asking clarifying questions, answering groups' questions, and providing feedback that attended to aspects of groups' collaboration and communication. Although a student-centered approach has affordances for peer-to-peer learning and developing important 21st century skills, it may not provide students with the explicit guidance needed for new academic genres of writing. Because each of these approaches has both affordances and constraints for online collaborative writing, a blended approach appears valuable for supporting students during online collaborative writing.

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CHAPTER 3

A Case Study of Four Collaborative Writing Group: Strategies for Formative Assessment

Strategies during Source-Based Argumentative Writing

Introduction

Online collaborative writing (OCW) activities have the potential to provide rich opportunities for student learning in the English language arts (ELA) classrooms. During OCW, students use communication skills to share their ideas; problem-solving skills to solve issues related to group dynamics; and critical thinking skills to make decisions about how to add, revise, and delete text (Krishnan, et al., 2019). In addition, students have opportunities within OCW to engage in digitally-mediated talk and create text which reflects the multiple ways that adolescents engage in literacy practices beyond the classroom (Black, 2008; Hull & Stornaiulo, 2014; Ito, et al., 2013). In this way, OCW may draw from the literacy skills students cultivate outside of school to support the academic competencies that are important for school success (CCSSO, 2010; Yim, et al., 2017; Yim, et al., 2014).

Despite the potential of OCW as a rich setting for student learning (Yim, et al., 2017; Yim, et al., 2014), OCW also poses unique challenges for students as they engage in formative assessment, the process of ongoing evaluation of progress for improved learning (Wylie, 2008). Formative assessment during OCW requires that students work with other group members to set goals, discuss tools to use, evaluate their writing, and then make changes accordingly (Andrade, Du, & Mycek, 2010; Butler & Winne, 1995). These interactions require self-regulatory skills (Nicol and Macfarlane-Dick, 2006) for navigating complex group dynamics that evolve across multiple collaborative writing experiences (Huxham, 2010). Thus, students' formative assessment processes within OCW activities can be in constant flux and more complex than in

traditional, independent writing settings. This also makes the investigation of students' engagement in formative assessment during OCW even more difficult to study.

Although students' engagement in formative assessment during OCW activities can be exceptionally complex and, therefore, challenging to study, more research in this area is needed if we are to understand the writing processes of students during OCW and how teachers may support OCW in their classrooms. We believe that one promising method for studying students' engagement in formative assessment during OCW is through an exploration of student-led talk—the classroom conversations during OCW that are driven by the students' own sense of what is important to their learning. Students' discussions around their goals for each writing event, their considerations of what classroom tools they should use, and their negotiations around how to move forward with revisions, all provide insights into the differing strategies that groups use when writing texts together online. In other words, an exploration of student-led talk allows us to gain a nuanced understanding of how groups engage in formative assessment during OCW. For instance, by exploring the ways that groups talk during OCW, we may uncover the focus of their writing goals, how they use common writing tools (i.e., model essays, sentences starts, Google Docs), what they prioritize in their assessment of writing, and how they decide on what to revise. For this reason, we studied the student-led talk of four groups in two middle schools as they engaged in OCW activities during one academic year.

Our study is guided by three research questions:

- 1) What are the different formative assessment strategies used by groups during OCW?
- 2) How does their use of these strategies change, if at all, across two source-based, argument writing activities?

- 3) What strategies, if any, are associated with improvements to groups' source-based argument writing?

Conceptual Framework

We conceptualize students' engagement in formative assessment during OCW as an active, iterative, and dynamic process. Students participate in formative assessment as they set writing goals, monitor and reflect on their learning, and make informed changes to their strategies for writing (Andrade & Cizek, 2010a; Andrade, Du, & Mycek, 2010; Butler & Winne, 1995). Thus, students' engagement in formative assessment can improve learning in a variety of ways (Andrade & Boulay, 2003; Andrade & Cizek, 2010b). Students' who engage in formative assessment tend to improve the content and organization of their writing (Andrade, Du, & Wang, 2008; Gray, 1999). Research also suggests that when students engage in formative assessment, they experience greater "ownership" of their writing, regulate their own classroom activity (Sadler, 1998, p. 129), take more responsibility for their own learning (Keaten et al., 1993; Anderson & Freiberg, 1995), and are better able to reflect on what they have learned (Dochy, Segers, & Sluijsmans, 1999). Thus, students' engagement in formative assessment can lead to less dependence on the classroom teacher for directing their classroom activity over time (Zimmerman & Schunk, 2004).

To deepen our understanding of students' engagement in formative assessment during OCW, we draw on Graham's (2018) writer(s)-within-community model of writing. This ecological model combines both cognitive and sociocultural theories of writing for a comprehensive perspective on writing development. Within classrooms, Graham (2018) views writing as a social activity that is "shaped and bound by the characteristics, capacity, and variability of the communities in which it takes place and by the cognitive characteristics, capacity, and individual differences of those who produce it" (p. 258). In other words, how

OCW groups engage in formative assessment is shaped by the macro-level features of the school environment, such as state standards and district-level accountability mandates. The instructional landscape of the classroom also impacts the ways in which OCW groups engage in formative assessment. Below, we contrast two instructional approaches to writing—the product-oriented approach and the process-oriented approach—and we describe the ways in which they shape students’ engagement in formative assessment.

A product-oriented approach vs. process-oriented approach

Classrooms that emphasize a product-oriented approach to writing instruction may emphasize adhering to a certain type of writing structure and including specific elements of the genre. This product-oriented approach may, therefore, lead OCW groups to spend more time talking about how to emulate a model essay. They may prioritize writing efficiency and spend less time engaging in talk about how to revise their writing in favor of completing an OCW activity in a timely manner.

In contrast, classrooms that emphasize a holistic, process-oriented approach to writing instruction may focus on goal setting, reflecting on the group’s writing, and engaging in revising the written text. Thus, in a classroom that emphasizes a process-oriented approach, OCW groups may spend more time discussing their writing objectives, monitoring their progress towards these objectives, and revising their written text. In this way, a process-oriented approach can lead groups to prioritize writing effectiveness and groups may spend more time engaging in talk about ways to improve their writing or their group dynamics.

In addition to examining the types of instructional approaches used in the classroom, another way to gain insight into students’ engagement in formative assessment is through a study

of student-led talk during OCW. In the section that follows, we conceptualize student-led talk and the ways in which it can help us understand students' engagement in formative assessment.

Student-Led Talk

During OCW, student-led talk is an important mechanism by which groups engage in formative assessment. We conceptualize student talk as “writing’s nurturing force” (Dyson, 1990, p. 107) because it provides students the opportunity to discuss, question, negotiate, debate, and problem-solve with peers. These peer-to-peer interactions help students to learn the skills they need for complex literacy activities (Applebee, et al., 2003). Furthermore, although small group talk about writing prepares students for writing tasks and helps them stay on track when they are composing, effective groups should focus on collective evaluation of texts, where each member has the opportunity to share their opinions (Sweigart, 1991). When this occurs, students can benefit from assessment-based conversation through improvements to their academic writing (Nystrand, 1984).

Graham’s model also supports the specific study of student-led talk that is related to the components of formative assessment. The innermost region of Graham’s (2018) model describes the interrelated nature of writing goals, tools, actions, and written products (see Appendix A for an illustration of the model). This region of Graham's model focuses our attention on how the writing environment and aspects of the writing process (i.e., assessment-related talk) may differ in group and individual writing activities. This model also helps us understand that when groups write together over multiple time points, their unique “collective history” will likely develop and the way they use the resources of their “writing environment” will likely evolve (other aspects of Graham’s model).

Given that student-led talk represents the externalization of student thinking, it is a valuable source of data for researchers exploring how students' engage in formative assessment. Student-led talk reveals the negotiations that take place between group members and it sheds light on the ways in which group members address trouble sources in their collective writing. Indeed, if educators are to develop effective pedagogies that incorporate online collaborative learning into the classroom, there is a need for nuanced accounts of students' talk in the technology-enhanced classroom (Burnett, 2016). That is, student-led talk provides an entry point into understanding ways that middle school writing groups uniquely or similarly assess their progress over time, and how these approaches relate to writing outcomes.

Given the potential affordances of OCW for student writing development, research on formative assessment and student-led talk in the context of OCW is particularly valuable. It is valuable because students must discuss, question, negotiate, debate, and problem-solve to effectively engage in formative assessment as a group. Yet, different groups will likely engage in different types of talk for different ends. Thus, a nuanced understanding of how students engage in formative assessment during OCW and how these assessments relate to writing outcomes is needed. In the present study, we address this research need in three ways. First, we look to groups' student-led talk as a way to analyze the strategies they use for formative assessment strategies during OCW. Next, we analyze how their strategy use changes from activity one to activity two. By doing so, we seek to uncover the strategies that are associated with improvements to groups written products—two source-based argumentative essays.

Method

We used a multiple case study approach (Yin, 2017) to investigate the formative assessment-related talk and source-based argumentative writing of four eighth-grade student

writing groups from two schools during two week-long OCW activities (see Appendix K for the writing prompts that each teacher co-created with the lead researcher for two writing activities). This approach supported the researchers in building rich, descriptive accounts of each group's strategies for formative assessment in two distinct school contexts during the 2018-2019 school year (Hatch, 2002). The lead researcher spent extensive time in both school contexts, and the rapport that was built allowed the researchers to gain an in-depth understanding of how groups' interactions changed over time within their classroom environments. This extended interaction also allowed both teachers and their students to become comfortable with a researcher's presence during class (Creswell, 2013). A comprehensive description of each school context, including both Mr. Nguyen's and Mr. Williams' (all names are pseudonyms) instructional approaches and their two focal classes, can be found in prior studies (i.e., Study 1 and Study 2, respectively). Each teacher's context and instruction approach can be summarized as follows. Mr. Nguyen taught at a large, urban public school district in the southwest region of the U.S., and he took a teacher-centered, product-focused approach to writing instruction. In contrast, Mr. Williams taught at a small, rural public school district in the northeast region of the country, and he took a student-centered, process-focused approach to writing instruction. Though there are limitations to this approach's generalizability, the goal of the research was to provide a nuanced account of four student writing groups' daily formative assessment processes and their writing growth over time.

Student Focal Groups

We worked with both Mr. Nguyen and Mr. Williams, our two participating teachers, to select a student focal group from each of their focal classes. Four student writing groups were selected as focal groups for this study (one from each focal class), with each group consisting of

three 8th grade students. Initial selection criteria included the following: scheduled for a general education ELA class taught by a participating teacher, consistent school attendance, and experience writing with Google Docs. Among the groups that met these criteria, the researchers worked with each teacher to select “typical cases” from each class (Etikan, Musa, & Alkassim, 2016). These cases were selected using the following criteria: general interest in collaborating in their group, average writing proficiency, and/or average ELA grade. This sampling technique allowed researchers to explore typical group strategies for formative assessment as groups wrote source-based arguments using their shared Google Doc.

Mr. Nguyen’s In-Flux Group (IFG)

The IFG was one of 10 groups in Mr. Nguyen’s 5th period class. Mr. Nguyen experienced some fluctuation of students moving in and out of his ELA classroom. This fluctuation meant that the IFG lost one group member to attrition but gained another when a student transferred into the district. Mr. Nguyen encouraged this new student to work with the founding members of the IFG, and she agreed to work with them. The other two writers in the group welcomed the new student, supported her navigation of Google Docs, and drew her into their conversations about writing. Over time, this new member contributed through verbal suggestions and written additions to their text. The IFG included three multilingual students who were all redesignated as fluent English proficient. Despite being new to collaborative writing, this group communicated effectively, shared ideas openly, and focused on writing effectively particularly during the second writing activity.

Mr. Nguyen’s Efficiency Group (EG)

The EG was one of 11 groups in Mr. Nguyen’s 6th period class and included three students from culturally and linguistically diverse backgrounds. In this class period, many

students self-selected into their groups, but the members of the EG did not self-select into the group. Instead, they came together under the guidance of Mr. Nguyen. Mr. Nguyen believed that the three students in EG would create for a team that worked well together because each student had unique strengths in communication, writing, technology, and English language proficiency that would complement the strengths of others in the group. In the end, the three members of the EG group agreed to work together. This group used in-class writing time to discuss a variety of topics, such as their writing and their lives outside of school. Thus, the patterns of communication within the EG tended to be less focused and more variable, with numerous pivots in and out of topics. The social complexities of OCW were also, at times, new and challenging for the EG. The EG included two multilingual students (i.e., English Learner and redesignated fluent English proficient), and one native speaker of English with and Individualized Education Program (IEP). Unlike the other three groups, the EG prioritized efficiency and focused less on writing effectiveness, particularly in their second essay.

Mr. Williams' Synergy group (SG)

The SG was one of six groups in Mr. Williams' 4th period class and they self-selected into their group. At first, one member took up the role of director, shaping the group's conversations and writing progress. Over time, this group of three students gained a synergy that resulted in a more egalitarian approach. Specifically, each writer served as a scribe, provided in-draft editing, and shared their opinions about the direction of the text. Over time, this group became better at active listening and communicating their thinking, and they shifted their attention from group dynamics to effective writing. The SG included three native speakers of English, one of whom had an IEP. Their experiences embodied both the challenges and learning opportunities afforded by OCW. The SG group prioritized writing effectiveness over time.

Mr. Williams' Negotiations Group (NG)

The NG was one of five groups in Mr. Williams' 6th period class. It consisted of three students, all of whom self-selected into their group. This group included three students. One of the students had an IEP and was recently reassigned to Mr. Williams' general education classroom from a 6:1 special education classroom. Before this group developed norms of interaction, their group time was often spent receiving teacher support for resolving minor issues among group members. Once the group determined norms for engagement, such as not editing writers' texts while they are composing, their group dynamics and patterns of communication improved. Over time and experience working with one another, the students in the NG were observed engaging in "democratic disagreement," where they more respectfully expressed their dissent and engaged in negotiations over areas of disagreement. Mr. Williams encouraged groups to engage in democratic disagreement, which he believed to be an important communication skill his students would need in post-secondary contexts. As the members of this group learned how to work with one another, their priorities shifted from a focus on effective collaboration to effective writing. Like the IFG and SG, the NG prioritized writing effectiveness, specifically during activity two.

Data Collection and Analysis

Both Mr. Nguyen and Mr. Williams' classrooms were studied during the 2018-2019 school year and multiple observations occurred before formal data collection. The timing of the observations (both informal and formal) aligned with each teacher's curricular plans. Specifically, Mr. Nguyen's student writing groups wrote the source-based argumentative essays, for activity one and activity two in March, 2019 and May, 2019. Mr. Williams' student writing groups wrote the source-based argumentative essays, for activity one and activity two in January,

2019 and April, 2019. To create a detailed representation of the the different formative assessment strategies used by groups during OCW, and how these strategies changed over time we captured video screencasts of four focal groups across two week-long writing activities. Although these video screencasts captured a variety of classroom activities, we focused our analysis on three sources of data—audio of student-led talk, audio of teacher-group interactions, and video of groups’ collaborative writing to answer research questions one and two.

The lead researcher used MaxQDA, a popular coding software capable of supporting time-stamped multimedia analysis (Saldaña, 2015) for the purposes of process coding the screencast data. Process coding often uses a gerund to describe an ongoing action (Miles, Huberman, & Saldaña, 2014) and was, therefore, a useful coding approach that allowed us to capture the types of activities students engaged in during formative assessment. Some of the codes that we developed included *setting* goals, *using* classroom tools, *discussing* their writing, and *revising* (see Appendix I for the codebook). The first cycle of coding produced a substantial number of codes which were collapsed into more conceptual codes. We then established the frequency and intensity of these codes to understand the nature of change in student-led talk across the two, week-long writing activities. By doing so, we uncovered how groups’ strategies for formative assessment changed and the ways that group talk evolved over time (Onrubia & Engel, 2009). We also used classroom observational data to contextualize, extend, and triangulate the video screencast data.

In addition to video screencasts, we also collected each group’s final draft from activity 1 and activity 2. This helped us to uncover whether specific strategies for formative assessment supported writing improvements within the context of source-based argumentative writing (and to address research question three). We first evaluated each essay written by the four groups. The

scoring team included a doctoral student (and lead author) and a writing instructor. Both scorers had extensive experience with teaching and assessing writing, and they used a vetted rubric that focused on four genre-specific writing features. Each of these four writing features was scored along a 6-point scale and the features included: 1) content and analysis, 2) command of evidence, 3) coherence, organization, and style, and 4) control of conventions (see Appendix J for the rubric). The minimum possible score for an essay was 4 points and the maximum scores was 24 points. The scorers used a four-step process to evaluate the groups' essays. First, the scorers calibrated by reading, discussing, and identifying anchor papers from other groups who were present during the study, but not of focus here. Second, the scorers analyzed each of the student groups' focal essays and the ways in which their essays represented the different writing features outlined in the rubric. Third, each scorer independently scored an essay by comparing its features to the set of anchor papers and rubric features. Fourth, scorers' compared scores to ensure that the independent assessments were within an acceptable 1-point range. No evaluations were beyond the 1-point range and a third scorer was not required (Office, 2016).

The lead researcher then generated a matrix that included two forms of data for each writing group. The first form of data involved the frequency and intensity of student-led talk for formative assessment strategies. The second form of data included the group's genre-specific rubric scores for both source-based argumentative writing activities. This matrix allowed for systematic visualization (Miles & Huberman, 1994) and cross-case analysis (Miles, Huberman, & Saldaña, 2014) where we analyzed the data for commonalities and differences between the groups' talk and texts. Our investigation of video screencast data capturing student writing groups' talk and text in real time inextricably links specific group talk with their collaborative writing moves.

Trustworthiness

We used three methods to establish the trustworthiness of our findings. First, we had prolonged contact with both classroom teachers and engaged in frequent observation of their classes in order to establish the credibility of our data (Lincoln & Guba, 1985). Second, we triangulated multiple sources of data as a means of verifying our analysis (Hatch, 2002). Third, we conducted member checks to ensure that our findings were credible and aligned with the perceptions of our teacher and student participants (Lincoln & Guba, 1985).

Findings

To determine the differing formative assessment strategies used by groups during OCW, how the use of these strategies changed, and the ways in which these strategies influenced groups' written texts, we asked the following research questions:

1. What are the different formative assessment strategies used by groups during OCW?
2. How does their use of these strategies change, if at all, from activity one to activity two?
3. What strategies, if any, are associated with improvements to groups' source-based argument writing?

We report our findings in relation to each research question below.

Different Strategies for Formative Assessment during OCW

During OCW, there were five different formative assessment strategies used by the four student groups. These five formative assessment strategies included 1) setting goals, 2) using tools, 3) monitoring progress, 4) engaging in/with peer feedback, and 5) revising. We provide examples of students' engagement in each of these formative assessment strategies in the sections that follow.

Setting Goals. Students were observed setting two types of goals. Those types included either text-focused or team-focused. Text-focused goals related to elements of their writing that groups wanted to work on (i.e., “finding evidence and details,” “not being repetitive”). In contrast, team focused goals related to elements of the groups’ collaboration and interpersonal dynamics (i.e., “staying on track and keeping others on track,” “give more ideas to the group”).

Using Tools. A second formative assessment strategy involved students’ use of three types of tools to help them write their essay. First, groups used a conceptual tool—a model essay—as a visual representation of the elements of source-based argumentative writing (see Appendix F). Groups also used grammatical tools—sentence starters—to help them form effective sentences. (see Figure 3.1 for sentence starter examples).

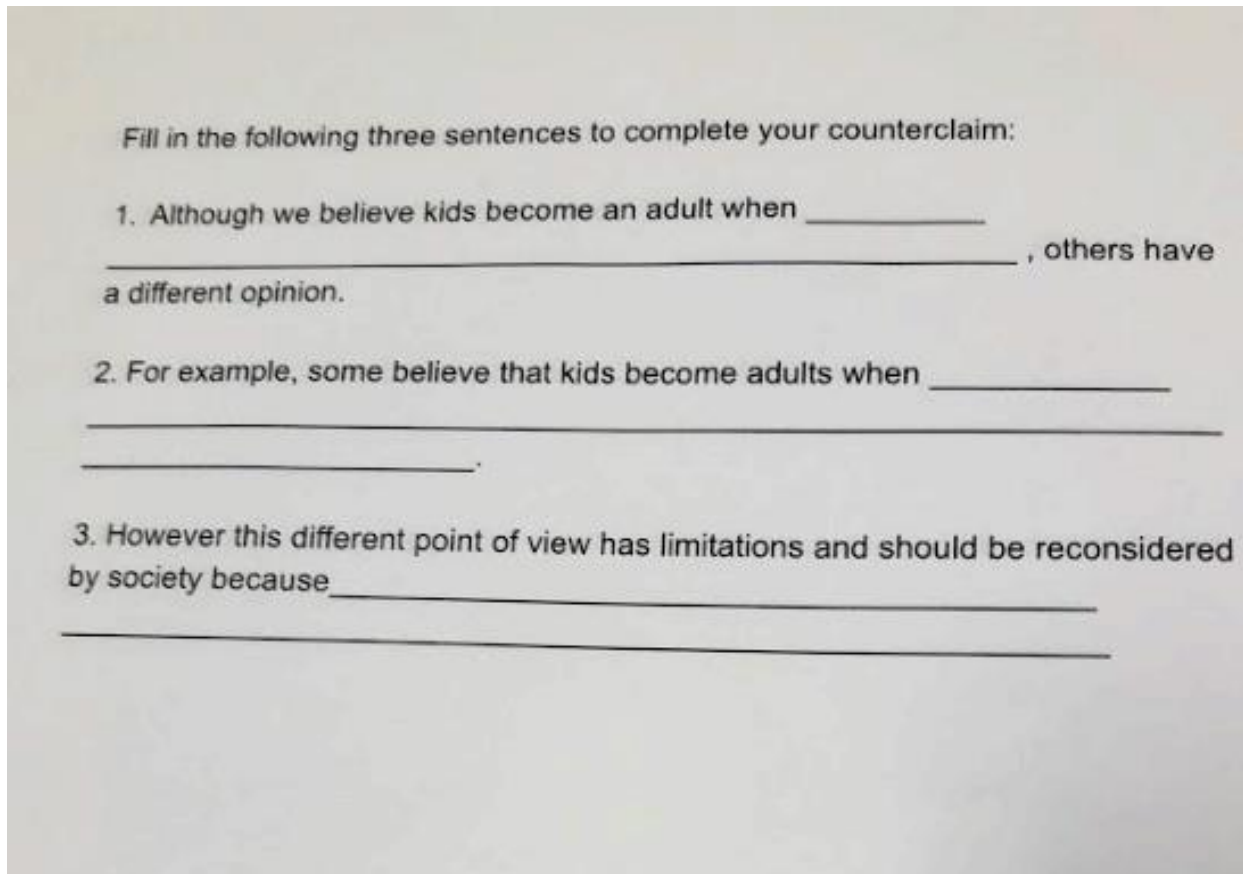


Figure 3.1. Sentence starters to support counterclaim

Third, groups used digital tools available in Google Docs. Those tools included “Spelling and Grammar” check to support their writing conventions, the “Dictionary” function to help them with word use, the “Comments” function to add reminders about aspects of their writing they wanted to address in a future class, the “text color” function to color-code their essay, and “Chat” for communicating with other group members who were not physically present during class.

Monitoring Progress. A third formative assessment strategy involved groups’ various ways of monitoring their progress. They were observed rereading their text aloud to determine its flow and what may need to be changed. Groups were also observed talking about their groups’ interpersonal dynamics (i.e., “Yeah, we’re much better at sharing ideas now”) to reflect on their changing skills as collaborators. Lastly, groups monitored their writing progress by discussing paragraph-level features (i.e., “We need titles, authors, and genres [in our opening paragraph]”) as well as sentence and word-level features (“Does that sound good?,” “We need a different word, so it’s not repetitive”).

Engaging in/with Peer Feedback. A fourth formative assessment strategy that most groups used was giving and/or receiving peer feedback. In Mr. Williams’ classroom, students were given a document that helped them look for elements of argument writing when giving feedback on other groups’ writing (See Figure 3.2 for the peer review document).

Group Members _____

Please review your Argumentative essay and place a check on the line.

My introduction has a:

_____ Hook

_____ Tag

_____ Thesis Statement that answers the question "When do Kids Become Adults?"

My first body paragraph has a:

_____ Claim

_____ Evidence with a "direct quote"

_____ Author's name who wrote the quote

_____ Title of the article the quote came from

_____ Analysis / explanation / reasoning of the quote

My second body paragraph has a:

_____ Claim

_____ Evidence with a "direct quote"

_____ Author's name who wrote the quote

_____ Title of the article the quote came from

_____ Analysis / explanation / reasoning of the quote

My third body paragraph has a:

_____ Counterclaim

_____ Brief explanation of why the counterclaim isn't as valid as my claim

Figure 3.2. Peer review support document

In Mr. Nguyen's classroom, groups that finished their essay with additional time left in the period were offered the option of providing feedback to other groups. Their peer feedback included recommendations on genre-specific features, word use, formatting, and extended to supporting groups' submission of their essay through Google Classroom.

Revising. A fifth assessment strategy involved groups' in-draft revisions. These revisions included changes based on both on teacher assessment and the group's self-assessment of their writing. Revising from teacher assessment refers to the additions, deletions, or changes made to a group's text according to the verbal or written feedback provided by their teacher (i.e., Williams: "You need a transition. Not only did the U.S. military use...they also used blah, blah, blah. This is a great transition for you"). In contrast, revisions from group self-assessment referred to the

additions, deletions, or changes made to a group's text according to the groups' assessment-related talk. In this example of group self-assessment, members of the IFG group are rereading their counterclaim paragraph for its flow. They come to a sentence in the counterclaim paragraph that they determine needs improvement.

GENE: ((Reads counterclaim)) However the opinion of others, saying there *is* an age to=
=be considered an adult, is not as sufficient as ours because teens can't be forced to=
=automatically turn into an adult when they aren't mature enough and <pause> isn't=
=<pause>

JOSIE: And aren't ready. ((Deletes isn't))

GENE: Yeah. (Continues reading new text)) and *aren't* ready to become an adult.

In this exchange, the group makes an assessment about what wording is needed to improve their counterclaim, and they revise their writing accordingly.

In sum, five formative assessment strategies were used by the four different student focal groups. However, the frequency and intensity in which these strategies were used varied from group to group and from activity to activity. To delve deeper into the ways in which groups' strategy use varied, in the next section, we report our findings in relation to research question two.

Changes in Groups' Strategies to Formative Assessment from Activity One to Activity Two

We found that there were many changes in how groups engaged in formative assessment from activity one to activity two. Table 3.1 provides a visual representation of these changes. In particular, Table 3.1 compares the frequency and intensity of the five formative assessment strategies across activity one and activity two. Those strategies include: setting goals, using tools, monitoring progress, engaging in/with peer feedback, and revising.

Table 3.1.

Groups' talk for formative assessment

| | | Teachers, Groups, and Activities (1 and 2) | | | | | | | |
|--------------------------------|--|--|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| | | Nguyen: EG | | Nguyen: IFG | | Williams: SG | | Williams: NG | |
| | | 1 st | 2 nd | 1 st | 2 nd | 1 st | 2 nd | 1 st | 2 nd |
| Categories | | Talking for Formative Assessment | | | | | | | |
| Setting Goals | Setting text-focused goals | 1 | | 1 | | 1 2 | | 1 2 | |
| | Setting team-focused goals | 1 | | 2 | | 2 1 | | 2 | |
| Using tools | Using conceptual mentor text tools | 1 | 1 | 1 | 2 | 1 | 2 | 1 | |
| | Using grammatical sentence starters tools | 1 | 1 | 2 | 2 | 2 | | 2 | |
| | Using digital tools | 2 | 1 | 2 | 2 | 1 | 2 | 1 | 3 |
| Monitoring Progress | Rereading/Assessing text | | | 3 | 3 | 2 | 2 | 2 | 3 |
| | Discussing/Questioning full text/paragraph | 1 | 1 | 1 | 2 | 2 | | 1 | |
| | Discussing/Questioning sentence/word | 1 | | 1 | 2 | 2 | | 1 | 1 |
| | Monitoring group dynamics, goal attainment | 2 | 2 | 3 | | 2 | 2 | 3 | 1 |
| Engaging in/with Peer Feedback | Giving peer feedback | 3 | 3 | 3 | 3 | 1 | 2 | 1 | |
| | Receiving peer feedback | | | | | 1 | 2 | 1 | 2 |
| Revising | Revising from group assessment | 2 | | 1 | 2 | 1 | 3 | 1 | 2 |
| | Revising from teacher assessment | 2 | | 1 | 1 | 3 | 2 | 2 | 1 |

Note. 1st represents the first activity. 2nd represents the second activity; 1=low frequency (less than five minutes); 2= moderate frequency (between 5-15 total minutes); 3=high frequency (more than 15 minutes).

As Table 3.1 illustrates, groups often changed how they engaged in formative assessment from activity one to activity two. Most groups engaged in at least five minutes of discussion for the majority of these strategies during at least one of the OCW activities. However, there are notable differences in strategy use across the different groups and writing activities. For example, whereas the EG engaged in significant discussions around revision during activity one, spending 5-15 minutes revising from each their own assessments and the assessments provided by their teacher, they engaged in far less talk about revising during activity two. A second noteworthy pattern concerns the SG and the NG. Although the writing prompt provided sentence starters for argument writing, Mr. Williams did not explicitly prompt groups to use these tools. Interestingly, despite the presence of sentence starters in the assignment itself, neither the SG nor the NG used sentence starters in their writing nor engaged in discussion about using the sentence starters during activity one. Another noteworthy pattern concerns the EG and IFG. Although both groups provided peer feedback during each activity, neither group received feedback at any time point.

In what follows, we describe a prominent theme that emerged from the data that highlights a critical way in which groups' engagement in formative assessment changed from activity one to activity two. In accordance with the priorities of their teacher, groups changed the ways they engaged in goal setting. We describe this theme below.

Taking Up Goal Setting vs. Adapting Goals. One way in which groups significantly changed is whether and how they set goals. Although each Google Doc assignment (co-created by the teacher and researcher) provided groups with designated space to set writing goals, each teacher placed different emphasis on goal setting (see Chapter 2 for a thorough analysis of these differences). For example, during activity one, Mr. Nguyen provided the implicit cue for groups to set their own goals through the design feature of a designated space to set writing goals.

Although this implicit cue for goal setting was present for both the first and the second writing assignments, Mr. Nguyen also made a verbal reference to goal setting during the second activity. After being verbally prompted to set goals, both the In-Flux Group and the Efficiency Group immediately spent time talking about and recording goals in the provided space. In this way, they were taking up goal setting practices during activity two, which was a new formative assessment strategy for both groups.

In the other focal classroom, Mr. Williams made goal setting an explicit focus by blocking out time during the beginning of each writing activity where he reviewed and provided feedback on group's writing goals. This explicit focus on group goal setting helped groups to formalize what they needed to focus on when collaborating on a source-based argumentative essay, as research suggests (Schunk, 2010). A noteworthy pattern emerged for the SG and the NG. Specifically, these groups began to adapt their goal setting strategies in response to their changing needs as collaborators. These types of changes have been noted previously in research on phases of collaboration (Onrubia & Engel, 2009). For example, during the first activity, the goals set by these groups appeared to be focused on relational, team-related work (i.e., "staying on track and keeping others on track," "give more ideas to the group"). During the second activity, their priorities then shifted toward text-focused goals (i.e., "finding evidence and details," "not being repetitive"). As can be seen in Table 3.1, in the first activity, these groups spent 5-15 minutes setting team-focused goals, while in the second activity, they spent up to 5-15 minutes setting text-focused goals. This shift suggests that as groups, at first, they prioritized their norms for collaboration. Once these norms were established, they then prioritized their source-based argumentative writing. Moreover, the amount of time spent on setting goals showcased the intentionality that middle schoolers brought to their OCW activities.

Strategies Associated with Writing Improvements

We found that specific formative assessment strategies were associated with improvements to groups' source-based writing during OCW. Table 3.2 provides an overview of each groups' rubric score across four genre-specific categories in the rubric: content and analysis, command of evidence, coherence, organization, and style, and control of conventions.

Table 3.2.
Groups' rubric scores for activity one and activity two

| Groups | Nguyen: EG | Nguyen: IFG | Williams: SG | Williams: NG |
|---|----------------|------------------|----------------|------------------|
| Written Product Rubric Scores: 1st Activity (2nd Activity) | | | | |
| Content & Analysis | 4 (3.5) | 4 (4.5) | 3.5 (4) | 3.5 (3.5) |
| Command of Evidence | 4 (3.5) | 4 (4.5) | 3.5 (4) | 4 (4) |
| Coherence, Organization & Style | 4 (3) | 3.5 (4.5) | 3.5 (4) | 3.5 (3.5) |
| Control of Conventions | 4 (3.5) | 5 (4.5) | 3.5 (4) | 3.5 (4) |
| Total Rubric Scores (out of 24) | 16 (14) | 16.5 (18) | 14 (16) | 14.5 (15) |

Table 3.2 illustrates that the SG's rubric scores increased by 2 points (i.e., 14/24 to 16/24), improving the content, organization, and conventions of their writing. The SG's writing improved the most (see Appendix L for the essays they wrote for activity one and activity two). The IFG's rubric scores increased by 1.5 points (i.e., 16.5/24 to 18/24), reflecting improvements in content, evidence, and organization. These improvements are in line with what prior research says is a value aspect of formative assessment; specifically, students' who engage in formative assessment improve the content and organization of their writing (Andrade, Du, & Wang, 2008; Gray, 1999). The NG's essay rubric score also increased by half a point (i.e., 14.5/24 to 15/25), showing their improvements in just their writing conventions. However, the EG, prioritizing

efficiency over effectiveness during activity 2, wrote an essay for activity two that dropped in rubric score (i.e., 16 out of 24 to 14 out of 24), and had lower evaluations of all four categories.

In the following section, we explore a salient difference between the group that prioritized writing efficiency (i.e., the EG) and the groups that prioritized writing effectiveness (i.e., IFG, SG, NG) as it related to their strategies for formative assessment.

Prioritizing Efficiency vs. Prioritizing Effectiveness. Analysis indicated that groups' assessment-related talk was shaped by each group's unique priorities over time. For instance, in the EG, members spent very little time discussing ways to revise their second essay. Instead, their talk was focused on ways to efficiently write the essay for the goal of "turning it in." Although the other three groups were also interested in making progress toward an assignment that could be turned in, these groups spent a significant amount of time assessing their writing to see if it was effectively addressing the writing prompt. Over time, these groups talked more about macro-level writing features that are important to source-based argument writing (i.e., "We need to provide evidence and reasoning," "We're using different sources to get information to state a point"). An example of one group's focus on effectiveness is provided in the interaction below. In this interaction, two members of the Synergy Group—Kevin and Carl—talk about the need for identifying the "TAG" (titles, authors, and genres) of the sources they would analyze in their essay on adulthood.

KEVIN: 'There's big debate when you become an adult.'

KEVIN: And don't forget we have to add, um, I'm trippin', it's at the top.

CARL: Oh, here

KEVIN: We need titles, authors, and genres. So we have to choose two articles. We=
=definitely need to do that one because it has the scientific argument.

CARL: And then we need to find the other one about nurture.

KEVIN: Ah, it was this one, it was this one.

This illustrates Carl and Kevin’s collaborative effort to assess how well their opening paragraph addresses the prompt and what they need to add to strengthen their writing. Specifically, we see Kevin refer to the prompt “at the top” of their Google Doc which specified that essays should include the sources’ “titles, authors, and genres” in the opening paragraph. This part of the prompt helped Kevin and Carl determine that they “have to choose two articles” to effectively substantiate their argument. The “scientific” and “nurture” articles helped them attend to the nature versus nurture debate in their argumentative essay on the age of adulthood.

For a more in-depth look at the connection between groups’ strategies for formative assessment and their improvements in source-based argumentative writing, we describe an important thematic pattern that emerged in the data. This thematic pattern represents some groups’ stronger focus on revision and their increased use of self-assessments for their revisions. We describe this pattern below.

Prioritizing effectiveness: Increased revision and growing independence. After scoring the essays written for activity one and activity two, we found improvements in three of the focal groups’ source-based argument writing (i.e., IFG, SG, and NG). Across the three groups, we also saw growth and improvement in two noteworthy areas. For example, in activity one, two of the three groups spent some time focusing on macro-level and micro-level writing features; however, by activity two, all three groups spent more time discussing the organization of their ideas, the credibility of their evidence, and how best to craft their sentences. These groups also increased the time spent revising their second essay. During activity one, groups relied heavily on their teachers’ formative assessments and subsequent feedback on their writing

when deciding what to revise in their essay. But during the second activity, groups relied more on their own assessments for making choices about what to revise. By relying more on their own assessments, these groups demonstrated a growing independence in their writing. This pattern of increased revision and independence was not observed in the fourth group that prioritized efficiency over effectiveness, and the fourth group's essay rubric score decreased by two points (i.e., 16/24 to 14/24).

In sum, this study found that groups made purposeful changes to their strategies for formative assessment during their experiences with OCW. First, each group's formative assessment was shaped by their classroom context; specifically, their teacher's emphasis on goal setting. From activity one and activity two, groups that prioritized effectiveness (over efficiency) focused on better addressing the prompt, and talking more about their writing and ways to revise their work. Additionally, the groups that prioritized effectiveness grew more independent of their teachers' assessment of their writing, electing to use their own judgments about what needed to be revised. Overall, increases in student-led talk for assessment, and the revisions resulting from those assessments, were related to improvements in groups' source-base argumentative essays.

Discussion

When teachers encourage students to set their own goals—an important component of a student's formative assessment—they are signaling that students should take ownership of their classroom activity (Sadler, 1998). Encouraging students to set goals during writing helps students engage in self-regulated learning (Zimmerman & Schunk, 2004), an important indicator of academic success (Pintrich & de Groot, 1990). This study found that group writers, much like independent writers, benefit when teachers encourage them to set goals for writing. Teachers who create multiple opportunities for the same writing groups to work together, like Mr. Nguyen

and Mr. Williams did, may want to consider the changing needs of students (as collaborators and as writers) over time. For example, teachers should encourage groups to set goals that align with the group's specific phase of collaboration (Onrubia & Engel, 2009). Such a practice could be beneficial for students making the shift in goal setting from team-focused goals to text-focused goals, such as was observed in the SG and the NG, two groups that improved their argumentative writing.

By studying the relationship between student-led talk and writing improvement during online collaborative activities, we extend the results of prior research that occurred in traditional classrooms (Andrade, Du, & Wang, 2008; Gray, 1999) into the technology-enhanced classroom. We note that in this study, student-led talk during OCW that prioritized effectiveness is likely one of many reasons for writing improvement from activity one and activity two. For example, the increase in rubric scores observed in the Synergy Group and the Negotiations Group may be explained in part by the increase in their essays' length, as past research suggests (Breland, Bonner, & Kubota, 1995; Perelman, 2012). However, the In-Flux Group serves as an interesting counterfactual to this point. That is, the In-Flux Group wrote a shorter essay during the second activity yet it reflected better writing as measured by increased scores on all four categories of the rubric. These results may be also explained by the group's increased focus on using the conceptual tools (i.e., model essay) and grammatical tools (i.e., sentence starters) that were provided by their teacher, and digital tools (i.e., spelling and grammar check, dictionary, text color) afforded by their mode of composition.

Rather than focus on the specific instructional element responsible for these results, we prefer to take a holistic perspective on the findings. Here, we take what was learned from this study to provide considerations for teachers interested in helping students engage in the

formative assessment process during OCW. First, teachers can support writing groups' ongoing assessments of their writing by asking them to first set goals (Sadler, 1998) and also to adapt their goals according to their changes as writers and collaborators (Onrubia & Engel, 2009). Second, teachers can help groups engage in progress monitoring by provided ample class time for student discussions of their writing (Applebee, et al., 2003) across multiple time points (Rivard & Straw, 2000). Third, teachers can help groups prioritize writing effectiveness (over efficiency) by providing writing prompts that help writers understand important elements to include in their writing (Kroll & Reid, 1994) and by providing both peer and teacher feedback (Biber, Nekrasova, & Horn, 2011). Lastly, to help groups make informed improvements to their writing, teachers can provide groups with multiple opportunities to write, discuss, and assess their writing (Nystrand, 1984) within the same genre. This allows groups to draw on their prior experiences with each other, and with the genre, and encourages students to take a mastery orientation to formative assessment, student-led talk, and OCW. These instructional strategies for facilitating group formative assessment were observed in the classrooms of Mr. Nguyen and Mr. Williams. And they helped three of the four middle school writing groups improve their source-based argumentative writing.

This work contributes to the body of literature on student-led talk and formative assessment by making a methodological contribution. Unlike other methods of uncovering student-led talk in the classroom (i.e., focal groups or observations), our investigation of 33 hours of video screencast data capturing student writing groups' talk and text in real time. This inextricably linked specific group dialogue with their collaborative writing moves. To our knowledge, no studies exist today that use this method to investigate student-led talk for formative assessment during OCW in two middle school contexts. This study also makes a

theoretical contribution by highlighting the ways in which student-led talk acts as a powerful agent for writing development in the middle school classroom, a specific construct that is alluded to in Graham's (2018) model, but that is not explicitly illustrated. This theoretical contribution is fully addressed in Chapter 4.

Future Directions

Research on formative assessment has found this process to be an effective method for improving teaching and learning (Bell, et al., 2008; Bennett, 2011; Kingston & Nash, 2011; McManus, 2017; Nicol & Macfarlane-Dick, 2006; Panadero & Jonsson, 2013; Sadler, 1998). However, there is limited work that examined the ways that student writing groups engage in formative assessment in the technology-enhanced classroom. To our knowledge, this study is the first of its kind. Although this study explored four student writing groups that remained in the same teams over two week-long activities, future work may explore how students' writing development over more time points. Additionally, work may explore how students distribute knowledge about writing or collaborating when working in different groups. Still other studies may investigate genres of writing beyond source-based argument writing and extend beyond the eighth-grade ELA classroom. Studying the relationships between student-led talk, and writing outcomes in new forms of writing is a valuable step for researchers concerned with building a better bridge between students' social and digital literacies with traditional literacies that are important for schools.

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CHAPTER 4

Conclusion

The goal of this dissertation was to examine the formative assessment process used by teachers' and students' in two middle school ELA classrooms when the same groups engaged in OCW to compose source-based argumentative essays. In the previous chapters, I reported the results from my three studies, which taken together, create a comprehensive perspective on how different contextual factors shape teachers' writing instruction and assessment, and how these factors, in turn, shape students' assessment and writing outcomes. In the following section, I summarize the findings from each study, provide three key contributions from the studies and two key contributions from a synthesis of this dissertation. I conclude with a brief reflection on the limitations of this project and offer directions for future research.

Summary of Findings

The findings from this dissertation provide a nuanced understanding of formative assessment during online collaborative writing in middle schools. In Chapter 1, I focused on the contextual factors that shaped Mr. Nguyen's and Mr. Williams' formative assessment beliefs and practices. This study focused on understanding (1) the unique characteristics of each educational context, (2) how the context shaped teachers' formative assessment beliefs and practices, and (3) the challenges teachers experienced when engaging in the formative assessment process when students wrote together online on their classrooms. The findings show that contextual factors (i.e., district mandates, teacher-student ratio) and instructional approach (i.e., teacher-centered versus student-centered) shape teachers' formative assessment beliefs and practice during online collaborative writing. Despite teaching in widely different contexts, both Mr. Nguyen and Mr. Williams experienced challenges while engaging in formative assessment during OCW. They

both also made informed changes to their practice in ways that helped them meet their teaching objectives. In Mr. Nguyen's case, he narrowed his focus to specific features of source-based argument writing. This helped him accomplish his goal of checking the writing progress of all 11 student writing groups during each day. In Mr. Williams' case, he added structure to his instructional approach by developing specific learning objectives that he used to anchor his daily formative assessments of groups' source-based argumentative writing and collaborative process.

In Chapter 2, I draw on the findings from the prior study to look more closely at each teacher's classroom strategies for formative assessment and how these approaches relate to groups' assessment of their own progress. Each teacher had a different approach to writing instruction, and this shaped his priorities during formative assessment. The ways that each teacher engaged in formative assessment played a role in what groups prioritized in their own ongoing assessments of their writing. In Mr. Nguyen's teacher-led approach, he spent ample time modeling to support group composition, used group writing to base his verbal feedback on their texts, and his student writers used the tools (i.e., model essay, sentence starters) they were provided to support their writing of source-based argumentative essays. In Mr. Williams' student-led approach, he added modeling as a strategy to support groups' revision, used group talk to base his verbal feedback on their collaboration, and his students used tools (i.e., goal setting, reflection) to support their growth as collaborative writers.

In Chapter 3, I focused on the frequency and intensity of the formative assessment strategies used by four student writing groups—two groups from Mr. Nguyen's classroom and two groups from Mr. Williams' classroom. I then examined the (1) changes that groups made to their formative assessment approach over time, and (2) the relationship between the strategies that groups use and their source-based argument writing rubric scores. Findings suggest that

groups' approach to formative assessment was shaped by the implicit or explicit focus on goal setting created by their teacher. Specifically, Mr. Williams' explicit focus on goal setting cued groups to the value he placed on this part of writing; Mr. Nguyen added this focus during Activity 2 and his groups took up the act of goal setting, a new formative assessment strategy for them. Also, groups that prioritized writing effectiveness (over writing efficiency) increased the frequency and intensity of talk on macro-level writing features and ways that they could better address the writing prompt in their revisions. The groups that prioritized effectiveness also drew from their own sense of what needed to be added, deleted or changed when revising and their source-based argumentative writing improved from Activity 1 to Activity 2.

Key Contributions

This dissertation provides five key contributions. Three of the five contributions are related to the findings of specific studies in this dissertation; those include 1) the power of context for shaping the instructional landscape, 2) the value of multiple opportunities for student-groups to write together, and 3) the importance of a blended instructional approach. These contributions can be used to guide future research, teacher professional learning, and classroom practice. Two additional considerations are based on a synthesis of these studies. Those additional considerations include 4) highlighting the value of assessment-related student-led talk during OCW and 5) a specific model of formative assessment to support OCW. In the following sections, I describe each of these contributions.

Key Contribution #1: The Power of Context for Shaping the Instructional Landscape

All three studies suggest that context plays an important role in the work that teachers' do in the technology-enhanced classroom. For researchers, understanding the ways in which state-level, district-level, school-level, and classroom-level factors all come together to shape a

teacher's writing instruction and assessment is an important consideration when examining teachers' development as writing instructors and what types of learning opportunities may be afforded through OCW. For designers of teacher PD, exploring how district policies impact writing instruction and assessment is important for understanding what types of literacy practices are privileged in these policies, and thus, encouraged in the classroom. For secondary teachers, reflecting on ways that OCW provides students opportunities to engage in new literacies (that are not captured on academic writing rubrics) is important for designing assessments that capture all the ways that students are learning in the technology-enhanced classroom.

Key Contribution #2: The Value of Multiple Opportunities to Write (and Assess) Together

A second contribution that Study 3 calls attention to is the merit of providing students with multiple opportunities to write and assess their writing within the same groups. For researchers, examining the ways in which student writing groups develop as collaborators and writers across multiple writing assignments is important for understanding the factors that support peer-to-peer engagement, and development of skills for communication and academic writing. For designers of teacher PD, understanding the ways that teachers are challenged by the formative assessment process, particularly during OCW, can inform meaningful professional learning opportunities intended to support teachers' ongoing assessments of student learning in their classrooms. For teachers, determining peer-to-peer dynamics, how individuals' skills shape the collective knowledge of a group, and ultimately, who benefits from multiple opportunities to engage in same-group OCW is important for supporting all students' learning needs.

Key Contribution #3: The Importance of a Blended Instructional Approach

A third contribution, that Study 2 and Study 3 provides, is the value of using a blended instructional approach that using elements of a teacher-centered approach and a student-centered

approach during OCW. For researchers, exploring the ways that modeling, student goal setting, actionable feedback, student reflection, and student-led talk occur in writing classrooms is important for unpacking the ways that formative assessment during OCW can support student writing development. For designers of teacher PD, creating professional learning experiences that support teachers' development of a blended approach to writing instruction will help teachers who are interested in incorporating OCW into their practice and who would like to learn more about the instruction and assessment strategies that support meaningful, peer-to-peer learning. For teachers, examining the ways that formative assessment can help improve teaching and learning during OCW is important for developing reflective and responsive teaching practices, and for building capacity for teaching new modes of writing.

Key Contribution #4: Highlighting Assessment-Related Student-Led Talk during OCW

A synthesis of this dissertation's findings provides a theoretical contribution related to Graham's (2018) writer(s)-within-community model of writing. Figure 4.1, "Student-led talk as a conduit for writing and assessment during OCW" offers an enhanced illustration of Graham's (2018) model. This figure illustrates how writers' and collaborators' talk shapes (and is shaped by) their writing goals, tools, actions, and written products.

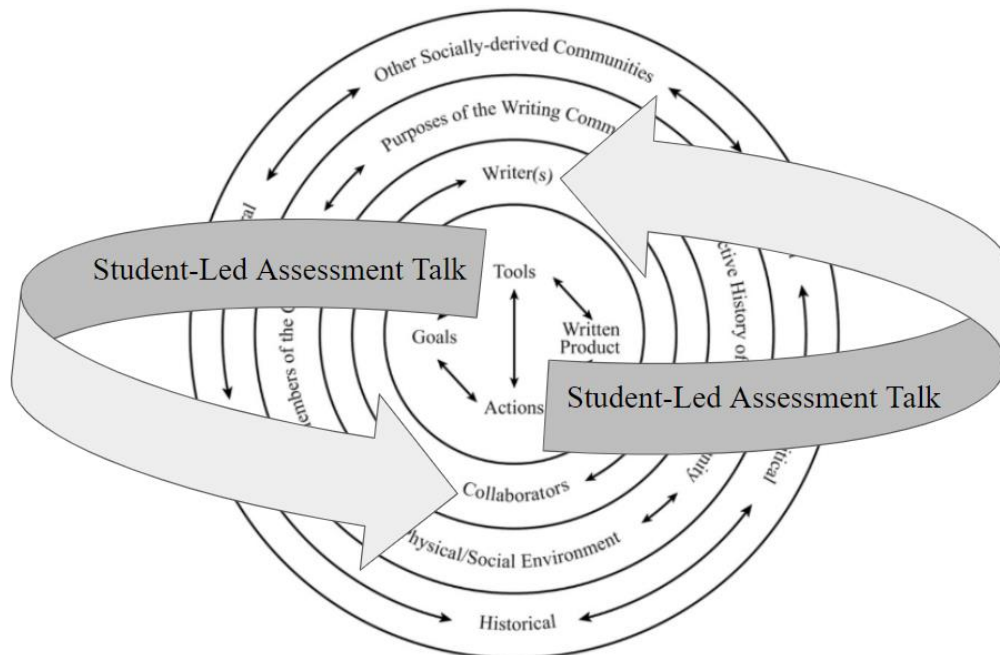


Figure 4.1. Student-led talk as a conduit for writing and assessment during OCW

This enhancement to Graham’s (2018) model also shows that different physical and social environments as well as collective group histories of writing and assessment will also shape the nature of student-led talk for ongoing assessments of progress during OCW.

Key Contribution #5: A Specific Model of Formative Assessment to Support OCW

In addition to a theoretical contribution as outlined above, I also used a synthesis of this dissertation’s findings to develop a specific model of the formative assessment process during OCW. This specific model of formative assessment can support improvements to teaching and learning during OCW. Unlike more general formative assessment cycles (i.e., objectives, targeted instruction, assessment, data analysis, and targeted feedback) like what is provided in the What Works Clearinghouse Practice Guide for Teaching Secondary Students to Write Effectively (Graham, et al., 2016), my model features a sub-loop of teacher-group interaction that was observed in both Mr. Nguyen’s and Mr. Williams’ classrooms. Figure 2, “A specific model of formative assessment to support OCW,” offers an enhanced illustration of the process

of formative assessment that may be used by teachers and students during OCW, including a sub-loop featured at the bottom of the figure. First, this specific model of formative assessment for OCW begins with both teachers and student writing groups setting learning goals for group collaboration and writing. Second, teachers provide a blended approach to writing instruction, using elements of both a teacher-centered approach (i.e., modeling, reteaching) and a student-centered approach (i.e., goal setting, reflection, discussion). Third, writing groups engage in OCW and prioritize group talk for how to compose their text. Fourth, groups engage in ongoing assessment of their collaboration and writing progress, and they use the classroom resources that best support their writing goals. Fifth, the model features a sub-loop where teachers base their feedback on multiple sources of information, like group talk and group text, to support groups' composition and self-assessments. Sixth, both teachers and writing groups make informed improvements to their teaching and learning. This leads to updates in their goals for teaching and learning, beginning this cycle again.

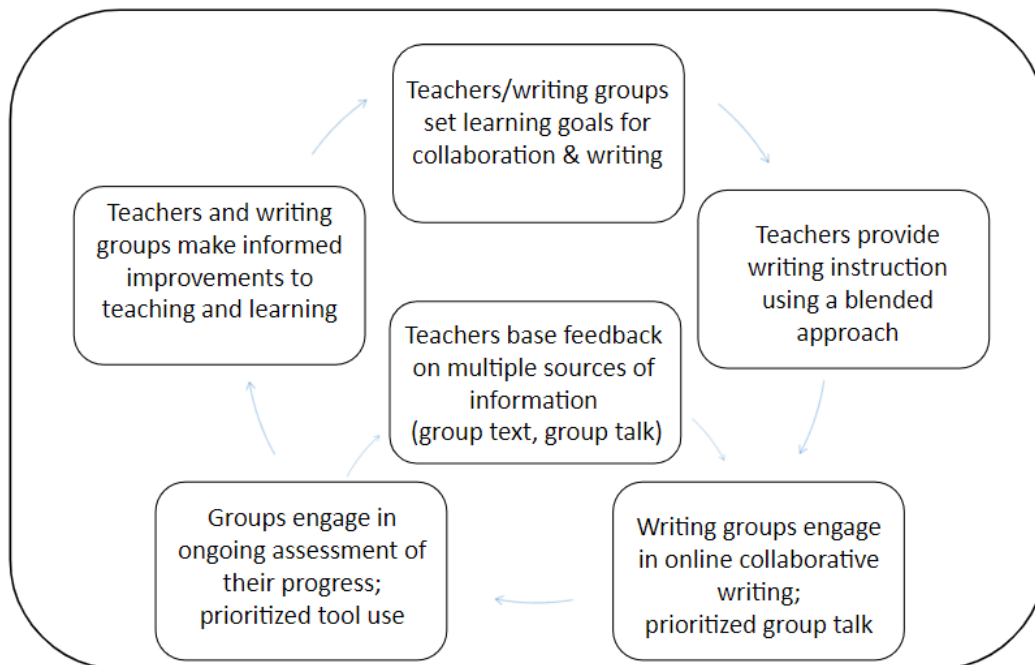


Figure 4.2. A specific model of formative assessment to support OCW

This specific model may be used by teachers and students during each day of OCW in the classroom. It can also be used to inform improvements to teaching and learning from class day-to-class day, or from writing activity-to-writing activity.

Limitations and Future Direction

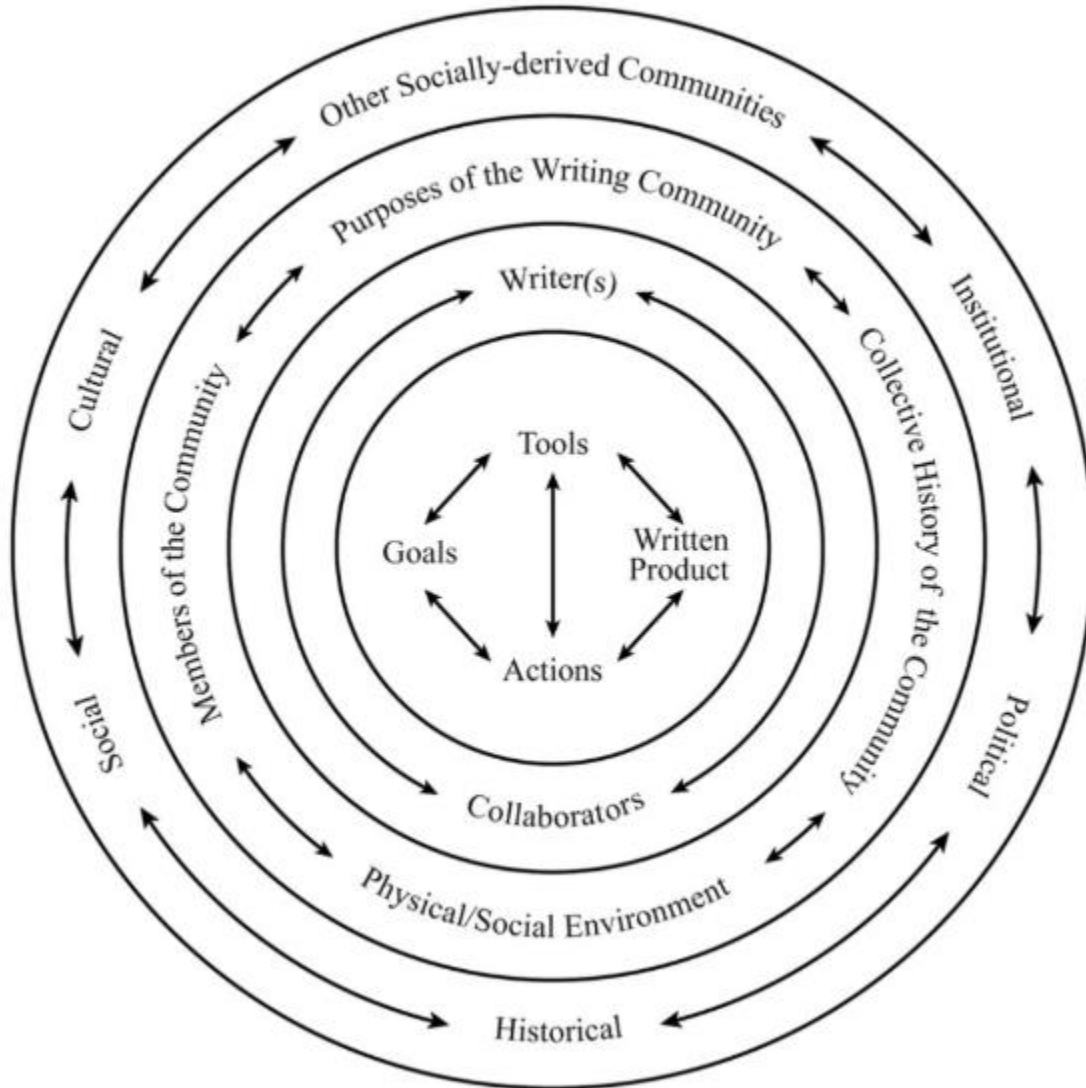
The data collection for this dissertation occurred in two district school contexts. Despite the value of exploring formative assessment during OCW in multiple contexts, we used a case multiple study approach that limits the generalizability of the findings. In what follows, I provide some of the ways that this the findings are limited beyond schools, teachers, and students that were investigated in this project. Concerning schools, I explored two schools, from rural and urban contexts, from two states, and both districts supported their ELA teachers by providing Chromebook carts for students' use during instruction. Concerning teachers, I worked closely with two ELA teachers who both had years of teaching experience, and they were both interested the problems of practice relating to formative assessment. Concerning students, I investigated eighth-grade students in general education ELA classrooms. Next, I use the aforementioned features of this multiple case study to suggest future direction of research.

These limitations can be used to guide the future inquiries focusing on formative assessment during OCW. For example, studies may examine different schools (i.e., limited classroom technologies), different ELA classrooms (i.e., English Language Development classes, advanced classes, intervention-based classrooms), or different content areas (i.e., science, world language, history). Additionally, future studies may explore teachers with different paths to teacher certification (i.e., alternative certification), less classroom teaching experience, or teachers with significantly more or less experience using formative assessment to support their writing instruction. Finally, because this dissertation follows teachers and students across one

academic year, a multiple-year, longitudinal study of students' experiences with formative assessment during OCW may shed light on students' development as collaborators and writers over time.

Appendix A

Writing Community Components of the Writer(s)-within-Community Model of Writing



Note. Reprinted from Graham's (2018) *A Revised Writer(s)-Within-Community Model of Writing*

Appendix B

Classroom Observation Protocol

Date:

Teacher (Pseudonyms):

Period:

Focal Group (Pseudonyms):

Abstract (brief description of the observations, reflections, and necessary follow-up questions)

Observations

1. How does the teacher start the class?
2. What is the stated learning goal(s), if any?
3. What does the teacher do?
4. What do the student-groups do?
6. What are the main activities that occurred?
7. Features of the setting (curricular context, tasks, norms, rules, expectations)
8. Roles and positioning of teacher and student-groups.
9. Teacher responsiveness to student-groups.
11. How is learning assessed, if at all? Formatively? Summatively?
12. What is the nature formative assessment? How is this information used to inform instruction?
12. Any observer comments should be bracketed [comment] and any additional details, questions, or reflections are to be added to the reflection, summary, or question sections.

Reflections

1. What were the main ideas being taught?
2. What were the main activities?
3. What are the learning opportunities for students?
4. Where there any gaps between student learning goal and what students accomplished?

Summary/Memo

During the lesson, what did teacher do and students experience? What are the implications for their learning opportunities? How might formative assessment have improved teaching and learning?

Follow-up Questions

Appendix C

Post-Instruction Debrief Protocol

Date:

Teacher (Pseudonyms):

Period:

Focal Group (Pseudonyms):

Abstract (brief description of the observations, reflections, and necessary follow-up questions)

Observations

1. What went well today?
2. What did you find challenging?
3. What feedback seemed most helpful to students?
4. How did you know to give that feedback?
5. Will you try anything different tomorrow?
6. I noticed that _____. Why might that be?

Reflections

1. What were the main ideas being taught?
2. What were the primary tasks asked of students?
3. What are the learning opportunities for students?
4. Did anything occur that served to disrupt learning?

Summary/Memo

What did the teacher focus on during assessment?

How much time did the teacher spend on:

Direct instruction

Small group conferencing

Other

What was the nature of group talk?

How did groups assess their progress?

Questions

Appendix D

Teacher Pre-Post Semi-Structured Interview Protocol

These questions will help me better understand your approach to writing instruction and your thoughts about collaborative writing, and what you think teachers need to do to support students during collaborative writing.

Writing instruction questions

- 1) What is your approach to writing instruction?
- 2) What are your strengths as a writing teacher?
- 3) Besides not having enough time, what challenges do you typically face with writing instruction?
- 4) On average, how much time each week do students spend writing in your ELA class?

Formative assessment questions

- 5) What's your personal definition of formative assessment
- 6) In the past, how have you used formative assessment during writing instruction?
- 7) What are the strengths of this technique?
- 8) What are the challenges to this technique?
- 9) Do you ever involve students in the formative assessment process? If so, how?

Collaborative writing questions

- 10) What are the learning benefits of online collaborative writing?
- 11) What are some challenges that students might face during online collaborative writing?
- 12) What are the teaching benefits of online collaborative writing?
- 13) What are the challenges of teaching online collaborative writing?
- 14) How will you support groups while they write together online in your class?
- 15) What goals do you have for participating in this project? (Post: Did you meet your goals?)
- 16) Do you have any questions?
- 17) If there anything else that you would like to tell me at this point?

Appendix E

Mr. Nguyen's Formative Assessment Organizational Tool

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|--|---|---|---|---|---|---|---|---|---|----|----|----|
| Intro: Hook | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Intro: TAG | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Intro: Thesis Statement | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| | | | | | | | | | | | | |
| BP#1: Claim | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| BP#1: Evidence | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| BP#1: Reasoning/Commentary | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| | | | | | | | | | | | | |
| BP #2: Claim | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | | |
| BP#2: Evidence | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | | |
| BP#3: Reasoning/Commentary | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | | |
| | | | | | | | | | | | | |
| Counterclaim: Acknowledging an opposing view | ✓ | | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | | | |
| Counterclaim: Describes that opposing view | ✓ | | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | | | |
| Counterclaim: Explains why GROUP'S is better | ✓ | | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | | | |
| | | | | | | | | | | | | |
| Conclusion: Restates thesis | ✓ | | ✓ | | ✓ | | | ✓ | | | | |
| Conclusion: Restates the supporting evidence | ✓ | | ✓ | | ✓ | | | ✓ | | | | |
| Responds/answers hook | ✓ | | ✓ | | ✓ | | | ✓ | | | | |

Appendix F

Color-Coded Model Essay used in Mr. Nguyen's Instruction

EXAMPLE ARGUMENTATIVE ESSAY

If there were something in the world that we could do to help save teenagers' lives, wouldn't we do it? In the informational texts titled "Is 16 Too Young to Drive a Car?" by Robert Davis and "Fatal Car Crashes Drop for 16-year-olds, Rise for Older Teens" by Allison Aubrey, the authors provide commentary on increasing the driving age from 16-years-old to 18-years-old to keep teens safe. **One way to keep teens alive is to raise the minimum driving age to 18-years-old.**

First, the driving age should be raised to 18 because research has shown that an overwhelming number of 16-year-olds across the U.S. have died in car crashes. For example, in Robert Davis' informative article, he informs that in 2003, "there were 937 drivers age who were involved in fatal crashes. In those wrecks, 411 of the 16-year-old drivers dies, and 352 of their passengers were killed" (249). This suggests that if the driving age was increased, we could reduce the number of fatalities on the highway.

Additionally, some state's laws have helped to keep 16-year-olds safe on the roads. In "Fatal Car Crashes Drop for 16-year-olds, Rise for Older Teens," Allison Aubrey states that the California Department of Motor Vehicles found "tougher licensing laws have led to 1,348 fewer fatal car crashes involving 16-year-old drivers" (256). These regulations appear to prevent 16-year-old deaths. This shows that stricter laws will likely cause greater safety for teenage drivers as well.

Although we believe that the driving age should be increased to 18, others have a different opinion. For example, some believe that keeping the current minimum driving age is worth the risk it poses to drivers. However, this point of view is dangerous and should be reconsidered by parents and lawmakers across the state.

To conclude, one method of keeping teen drivers safe is increase the driving age to 18, when they are better able to make good decisions. Our reasoning is valid because research has shown that a number of 16-year-old drivers die each year and that other states with tougher licensing laws keep young drivers alive. It is clear that we should do whatever we can to keep teenagers safe and that includes raising the driving age.

Appendix G

Excerpt from Mr. Williams' Jointly Completed Formative Assessment Rubric

What could our group improve about **OUR WRITING PROCESS**?

| | We need lots of support | We need some support | We'll work on this | We did this |
|---|-------------------------|----------------------|--------------------|-------------|
| We all paid attention during our teacher's writing instruction | 😞 | 😐 | 😊 | 😄 |
| We all planned out our writing and stuck to our plan/outline | 😞 | 😐 | 😊 | 😄 |
| We all gave each other feedback in a helpful, respectful way | 😞 | 😐 | 😊 | 😄 |
| We all used group/teacher feedback to improve our writing | 😞 | 😐 | 😊 | 😄 |
| We all used group/teacher feedback to improve communication and resolve issues in our team | 😞 NA | 😐 | 😊 | 😄 |
| Our teacher can help us improve OUR WRITING PROCESS by <u>Letting us work it out ourselves</u> . | | | | |

What could our group improve about **WORKING AS A TEAM**?

| | We need lots of support | We need some support | We'll work on this | We did this |
|--|-------------------------|----------------------|--------------------|-------------|
| We all asked each other questions when things were not clear | 😞 | 😐 | 😊 | 😄 |
| We all set specific writing goals and achieved them | 😞 | 😐 | 😊 | 😄 |
| We all focused on the writing assignment throughout each class | 😞 | 😐 | 😊 | 😄 |
| When we disagreed with each other, we were respectful | 😞 | 😐 | 😊 | 😄 |
| Our teacher can help us improve WORKING AS A TEAM by <u>NA!</u> | | | | |

Appendix H

Google Doc Assignment Featuring Goal Setting and Reflections (in bold)

| Group Members | Writing Goal(s) |
|----------------------|------------------------|
| | |
| | |
| | |

| Author's Last Name | Article Title | Link to Source | I know that this evidence supports my essay because_____. |
|--------------------|---------------|----------------|---|
| | | | |
| | | | |

Your Prompt: Select a topic to learn more about that relates to World War II and the experiences of characters from *Unbroken*.

Your Task: Write a multiple paragraph research-based argument that uses evidence from sources to argue why your topic made the most impact on people's lives during World War II.

Your Audience: The entire 8th grade class and Mr. C.

Be sure to include:

- Works Cited page
- Thesis Statement
- Evidence from TWO credible sources to support your argument
- Short quotations from sources (including in-text citations)

Begin your essay here...

Writing Reflection (to be completed about your write your essay)

- a) How did you help accomplish your group's writing goals?
- b) What is one skill you learned by being a part of this group?
- c) What is one skill you'd like to improve?

| | |
|-------------------|----------------|
| Student #1 | a) b) c) |
| Student #2 | a) b) c) |
| Student #3 | a) b) c) |

Appendix I

Codebook including Process Coding of Screencast Data

WRITING AS A GROUP

1.1 writing out goals/planning text

Definition: Writer(s) are observed using the space provided to write out specific process, progress, and/or product-oriented writing goals.

1.2 writing intro

Definition: Writer(s) are observed writing an opening paragraph; may include a hook, TAG, and/or thesis statement

1.3 writing body paragraph

Definition: Writer(s) are observed writing a body paragraph; may include writing a claim, adding evidence, or providing commentary/reasoning

1.4 writing conclusion

Definition: Writer(s) are observed writing a conclusion paragraph

1.5 adding text from group discussion/FA

Definition: Writer(s) are observed ADDING text in response the group's discussion on a way to improve the text to better meet the assignment expectations.

1.6 changing text from teacher feedback/FA

Definition: Writer(s) are observed CHANGING text in response to the teacher's feedback.

1.7 changing text from group reflection/FA

Definition: Writer(s) are observed CHANGING text in response to group discussion on a way to improve the text.

1.8 generating text from teacher feedback/FA

Definition: Writer(s) are observed ADDING text in response the teacher's feedback on a way to improve the text.

1.9 googling/navigating sources

Definition: Writer(s) are observed searching for their pre-selected sources or new sources for use in their text

STUDENT GROUP MANAGING TASK

2.1 joining Doc distally

Definition: Writer(s) are observed joining the assignment google doc from a distal location; may include joining via facetime or phone call

2.2 dictating/scribing

Definition: Writer(s) are observed orally composing while another group member types

2.3 writing reflections

Definition: Writer(s) are observed completing the writing reflection questions at the end of the assignment Google Doc

STUDENT GROUP TALK

3.1 PRE-WRITING TALK

3.1.1 planning/setting goals

Definition: Writer(s) are heard engaging in planning talk, may be talk around process, progress, or product

3.1.2 reading directions

Definition: Writer(s) are observed reading the assignment directions

3.2 DURING WRITING TALK

3.2.1 joining distally

Definition: Writer(s) are heard speaking with one group member on the phone

3.2.2 discussing sentence-level features

Definition: Writer(s) are heard discussing sentences/words/spelling/punctuation in their text

3.2.3 discussing paragraph-level features

Definition: Writer(s) are heard discussing the elements needs in a specific paragraph

3.2.4 discussing text-level features

Definition: Writer(s) are heard discussing macro-level writing features (i.e., organization of ideas)

3.2.5 discussing source materials/textual evidence

Definition: Writer(s) are heard discussing the textual evidence that may be used in their text

3.2.6 negotiating tasks/norms

Definition: Writer(s) are heard discussing who will engage in which task associated with the assignment

3.3 POST-WRITING TALK

3.3.1 rereading/reflecting on completed assignment

Definition: Writer(s) are heard rereading their written draft

3.4 MONITORING PROGRESS

3.4.1 rereading segment of text

Definition: Writer(s) are heard rereading their group's written text

3.4.2 recognizing needs to add/edit text

Definition: Writer(s) are heard discussing what needs to be added to a text in relate to their formative assessment

3.4.3 recognizing need to refocus attention

Definition: Writer(s) are heard refocusing another's attention on the task

3.4.4 recognizing others' efforts/strengths

Definition: Writer(s) are heard acknowledging the efforts or writing strengths of their group members

3.4.5 recognizing task completion

Definition: Writer(s) are heard engaging in evaluative talk about whether their text is complete

3.4.6 evaluating text-level features

Definition: Writer(s) are heard discussing the text's audience and what the audience needs in order to understand the text

3.4.7 evaluating thesis statement/argument

Definition: Writer(s) are heard discussing the text's thesis statement/argument

3.4.8 evaluating textual evidence

Definition: Writer(s) are heard discussing the appropriateness of textual evidence that may be included in their text

3.4.9 asking sentence/paragraph-level questions

Definition: Writer(s) are heard asking questions about how to write sentences and/or paragraphs

3.4.10 asking text-level questions

Definition: Writer(s) are heard asking questions about the macro-level writing features (i.e., organization of ideas)

3.4.11 responding to progress monitoring questions

Definition: Writer(s) are heard responding to progress monitoring questions asked by their teacher or group member

TEACHER TALK

4.1 ATTENDING TO WHOLE GROUP

4.1.1 Introducing activity

Definition: Teacher is heard launching the day's activity

4.1.2 Providing FA-driven instruction/reteaching

Definition: Teacher is heard engaging in reteaching

4.1.3 modeling for whole group

Definition: Teacher is heard engaging in modeling for the entire class

4.2 ATTENDING TO FOCAL GROUP

4.2.1 modeling paragraph writing/small group

Definition: Teacher is heard modeling how to write a specific paragraph

4.2.2 modeling thinking/small group

Definition: Teacher engages in progress monitoring by modeling the thinking of an effective writer

4.2.3 answering questions/small group

Definition: Teacher is heard answering group-specific questions

4.2.4 providing FA-driven instruction/small group

Definition: Teacher is heard providing FA-driving instructional to the focal group

4.2.5 Asking specific progress monitoring question

Definition: Teacher engages in progress monitoring by asking specific questions (i.e., "What is your claim?")

4.2.6 Asking general progress monitoring questions

Definition: Teacher engages in progress monitoring by asking general questions (i.e., "How are you doing?")

4.2.7 providing writing feedback

Definition: Teacher provides writing recommendation

Appendix J
Source-Based Argumentative Writing Rubric

| Criteria | 6 Essays at this Level: | 5 Essays at this Level: | 4 Essays at this Level: | 3 Essays at this Level: | 2 Essays at this Level: | 1 Essays at this Level: |
|--|--|---|--|---|---|---|
| Content and Analysis: the extent to which the essay conveys complex ideas and information clearly and accurately in order to support claims in an analysis of the texts | <ul style="list-style-type: none"> -introduce a precise and insightful claim, as directed by the task -demonstrate in-depth and insightful analysis of the texts, as necessary to support the claim and to distinguish the claim from alternate or opposing claims | <ul style="list-style-type: none"> -introduce a precise and thoughtful claim, as directed by the task -demonstrate thorough analysis of the texts, as necessary to support the claim and to distinguish the claim from alternate or opposing claims | <ul style="list-style-type: none"> -introduce a precise claim, as directed by the task -demonstrate appropriate and accurate analysis of the texts, as necessary to support the claim and to distinguish the claim from alternate or opposing claims | <ul style="list-style-type: none"> -introduce a reasonable claim, as directed by the task -demonstrate some analysis of the texts, but insufficiently distinguish the claim from alternate or opposing claims | <ul style="list-style-type: none"> -introduce a claim -demonstrate confused or unclear analysis of the texts, failing to distinguish the claim from alternate or opposing claims | <ul style="list-style-type: none"> -do not introduce a claim -do not demonstrate analysis of the texts |
| Command of Evidence: the extent to which the essay presents evidence from the provided texts to support analysis | <ul style="list-style-type: none"> -present ideas fully and thoughtfully, making highly effective use of a wide range of specific and relevant evidence to support analysis -demonstrate proper citation of sources to avoid plagiarism when dealing with direct quotes and paraphrased material | <ul style="list-style-type: none"> -present ideas clearly and accurately, making effective use of specific and relevant evidence to support analysis -demonstrate proper citation of sources to avoid plagiarism when dealing with direct quotes and paraphrased material | <ul style="list-style-type: none"> -present ideas sufficiently, making adequate use of specific and relevant evidence to support analysis -demonstrate proper citation of sources to avoid plagiarism when dealing with direct quotes and paraphrased material | <ul style="list-style-type: none"> -present ideas briefly, making use of some specific and relevant evidence to support analysis -demonstrate inconsistent citation of sources to avoid plagiarism when dealing with direct quotes and paraphrased material | <ul style="list-style-type: none"> -present ideas inconsistently and/or inaccurately, in an attempt to support analysis, making use of some evidence that may be irrelevant -demonstrate little use of citations to avoid plagiarism when dealing with direct quotes and paraphrased material | <ul style="list-style-type: none"> -present little or no evidence from the texts -do not make use of citations |
| Coherence, Organization, and Style: the extent to which the essay logically organizes complex ideas, concepts, and information using formal style and precise language | <ul style="list-style-type: none"> -exhibit skillful organization of ideas and information to create a cohesive and coherent essay -establish and maintain a formal style, using sophisticated language and structure | <ul style="list-style-type: none"> -exhibit logical organization of ideas and information to create a cohesive and coherent essay -establish and maintain a formal style, using fluent and precise language and sound structure | <ul style="list-style-type: none"> -exhibit acceptable organization of ideas and information to create a coherent essay -establish and maintain a formal style, using precise and appropriate language and structure | <ul style="list-style-type: none"> -exhibit some organization of ideas and information to create a mostly coherent essay -establish but fail to maintain a formal style, using primarily basic language and structure | <ul style="list-style-type: none"> -exhibit inconsistent organization of ideas and information, failing to create a coherent essay -lack a formal style, using some language that is inappropriate or imprecise | <ul style="list-style-type: none"> -exhibit little organization of ideas and information -are minimal, making assessment unreliable -use language that is predominantly incoherent, inappropriate, or copied directly from the task or texts |
| Control of Conventions: the extent to which the essay demonstrates command of conventions of standard English grammar, usage, capitalization, punctuation, and spelling | <ul style="list-style-type: none"> -demonstrate control of conventions with essentially no errors, even with sophisticated language | <ul style="list-style-type: none"> -demonstrate control of the conventions, exhibiting occasional errors only when using sophisticated language | <ul style="list-style-type: none"> -demonstrate partial control, exhibiting occasional errors that do not hinder comprehension | <ul style="list-style-type: none"> -demonstrate emerging control, exhibiting occasional errors that hinder comprehension | <ul style="list-style-type: none"> -demonstrate a lack of control, exhibiting frequent errors that make comprehension difficult | <ul style="list-style-type: none"> -are minimal, making assessment of conventions unreliable |

Appendix K

Mr. Nguyen's and Mr. Williams' Writing Activities (Activity One and Activity Two)

Mr. Nguyen's Activity One

Your Task: Write an argumentative essay answering the essential question, "When do kids become adults?"

Your Audience: Students at [Mr. Nguyen's] school

Your Prompt: Which source is most convincing to you? Review the articles, and jot down notes to support your group's argument. Use textual evidence from the articles to support your argument. Be sure to include a counter-argument paragraph where you explain the opposing viewpoint and why it is valid but not as strong as your argument. Finish with a conclusion paragraph.

Common features of an argument:

- Specific points
- Textual evidence
- Addresses an audience
- Counterargument

Argument writing **sentence starters:**

- We believe that
- It is vital that
- Some people believe that
- _____ is a particular problem
- On the other hand
- We agree with _____ because of _____
- We disagree with _____ because of _____
- Based on our reading of the text, we conclude that _____
- As you can see
- For example, _____

Mr. Nguyen's Activity Two

Essential Question: Are people truly good at heart?

Your Audience: Students at [Mr. Nguyen's] school

Your Task: Write an argumentative essay answering the essential question, "When do kids become adults?"

Your Prompt: Which articles are most convincing to your group? Review the articles, and jot down notes to support your group's argument. Use textual evidence from the articles to support your argument. We sure to include a counter argument paragraph where you explain the opposing viewpoint and why it is valid but not as strong as your argument. Finish with a conclusion paragraph.

Common features of an argument:

- Specific points
- Textual evidence
- Addresses an audience
- Counterargument

Argument writing **sentence starters:**

- We believe that
- It is vital that
- Some people believe that
- _____ is a particular problem
- On the other hand
- We agree with _____ because of _____
- We disagree with _____ because of _____
- Based on our reading of the text, we conclude that _____
- As you can see
- For example, _____

Mr. Williams' Activity 1

Your Prompt: Select a topic to learn more about that relates to World War II and the experiences of characters from *Unbroken*.

Your Task: Write a multiple paragraph research-based argument that uses evidence from sources to argue why your topic made the most impact on people's lives during World War II.

Your Audience: The entire 8th grade class and [Mr. Williams]

Be sure to include:

- Works Cited Page
- Thesis Statement
- Evidence from TWO credible sources to support your argument
- Times New Roman, 12-point font, 1-inch margins, double spaced

Mr. Williams' Activity Two

Your Audience: [District Name] School students

Your Task: Write a source-based multiple paragraph argumentative essay where you respond to the question “When Do Kids Become Adults?” Use textual evidence **from two sources** to support your argument. Be sure to include a counterclaim paragraph.

“What the Brain Says about Maturity” by Laurence Steinberg

“Leave the Voting Age Alone” by Jenny Diamond Cheng Better

“Training for New Drivers” by Jamie Lincoln Kitman A Parent’s

“Role in the Path to Adulthood” by Barbara Hofer Mandatory

“Service to Become an Adult” by Michael Thompson

Be sure to include:

- 1) An introductory paragraph that includes a hook, TAG (titles, authors, genres), and thesis statement
- 2) Body paragraph #1 that include **a claim, the best textual evidence, but your commentary** on how the evidence supports your claim,
- 3) Body paragraph #2 that include **a claim, the best textual evidence, but your commentary** on how the evidence supports your claim,
- 4) A counterclaim paragraph that explains an opposing viewpoint
- 5) A concluding paragraph that restates your argument and the evidence you provided to support it.

Common features of an argument:

- Specific points
- Evidence
- Addresses an audience
- Counter Arguments
- Persuasive strategies

Sentence starters for argument writing

- You could argue that _____.
- Despite the fact that _____ have _____, _____ have _____.
- Some may believe that _____, but I believe _____.
- Others may say that _____, but I argue _____.
- We understand [insert author’s] point that _____; however, _____.

Appendix L

Synergy Group's Source-Based Argumentative Essays for Activity One and Activity Two

Synergy Group's Activity One

Imagine being a prisoner of war with just enough food or water to live with strict rules to follow. In the true story of *Unbroken* by Laura Hillenbrand, Louie and Phil were in a POW camp where they were tortured and forced with injections for testing. They left them weak and sick to avoid escape. There were about 95,000 Americans forced into poverty camps. The camps are very brutal, most died to sickness due to the lack of food and water which is very mentally draining and humiliating. Clearly, POW camps had a significant impact on people of the war.

Prisoners of war were not fairly treated nor had rights. The article "Japanese Internment Camp Survivors" by bio staff gave us our information of this claim. Prisoners of war in Germany had a death rate of 27 percent mostly due to sickness and hunger because of the cruel conditions of POW camps. This relates to *Unbroken* because they were stuck in these camps and they could easily die due to them getting injected with hunger and all their illnesses. Phil and Louie were lucky they made it out alive due to them being very weak and sick which is impressive. "A biscuit was tossed into Louie's cell, breaking into bits on the floor. A tiny cup of weak tea was set on the windowsill." This is actual evidence from the book on page 139. This shows that there being starved, tortured and barely taken care of. This impacted the lives of many in the 1900s.

People from around the world were experiencing poverty camp conditions. People being starved physically and mentally tortured and even being forced to work non-stop until you died because "why not get something out of them" which is stated in the article "Experiences of a Prisoner of War." "The captives were not just beaten, they were starved. Meals usually consisted of a bowl of broth with a bit of vegetables and a bowl or half bowl of rancid rice, sometimes mixed with a little barley. The food was infested with rat droppings, maggots, and so much sand and gravel that Louie's teeth were soon pitted, chipped, and cracked". This proves that people were starved and the food that they were served was in some ways poisonous. This showed that the lives of many were impacted every day.

The POW camps had a large impact on the war. These sources we used to describe the impact on how they were treated and how it was to be in a POW camp. What do you think you would do if you were in one of these camps or if your parents or someone you loved was in one?

Synergy Group's Activity Two

[Students' names]

Mr. [Williams]

English 8

April 2019

When Do Kids Become Adults?

Are you really an adult when you are old enough to vote? There's an enormous debate when you become an adult. You might think you're an adult but your brain is not developed till around your early 20's. Two articles talk about this. The titles and authors being 'What the brain says about maturity,' by Laurence Steinberg and, the article "A parents role in the path to adulthood", by Barbara Hofer. Both of these articles debate the science of adulthood and the nurture of adulthood. The authors of these articles give specific details about the question. So therefore, we believe kids become adults due to nature.

First, your brain is never fully developed, and it always keeps growing. Neurologically, your mind is not developed till your mid 20's. Different parts of the brain mature at different times, meaning you can feel mature. But your mind isn't actually fully developed until around your mid twenties. Another quote that Laurence Steinberg stated in the article "What the brain says about maturity" is, "Significant changes in brain anatomy and activity are still taking place during young adulthood". Even though scientists proved that the brain is developed at the age of 25, the brain is technically always developing during your entire life. Evidence from "What the Brain says about maturity" is, "Different brain regions and systems mature along different timetables. There is no single age at which the adolescent brain becomes an adult brain". This shows that the brain is always maturing.

Others think that, the age when you become an adult depends on how you were raised and your culture. In the world, people believe that you are considered responsible when you are able to purchase and drink alcohol, but you are able to fight for your country before that. They let you into the military for four years before you can even be in a bar. A quote that Barbara Hofer stated in the article "A parents role in the path to adulthood" is, "Serving in the military before one is considered responsible enough to purchase alcohol is one of the glaring inconsistencies". We find it astonishing that you can be in the military before you can even be in a bar.

Although we believe kids become an adult when they are mentally ready, others have a different opinion. For example, some believe that kids become adults when they're able to drink. However this different point of view has limitations and should be reconsidered by society because your brain is always developing until the age of 23, and sometimes longer. Evidence to support this fact is, "Systems responsible for logical reasoning mature by the time people are 16...systems do not reach full maturity until the early of mid-20's". However, we believe nature overpowers.

To conclude, one perspective on when kids become adults is when they're ready for the real world due to brain development. Our reasoning is valid because the age you become mature depends on your brain, and is never fully grown. It's always learning new things in you everyday life, technically your brain is not fully matured till around your mid-twenties. It is clear that maturity is based on science anyway.