Journal of Research on Technology in Education

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Published online: 17 Apr 2014.

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A Case Study: The Role of Student-Generated Vidcasts in K–12 Language Learner Academic Language and Content Acquisition

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Abstract

The purpose of this study was to explore the integration of vidcasts as student-generated products in English as a second language (ESL) classrooms. We collected qualitative data through observations, student artifacts, and semistructured interviews from 16 reading students at a public middle school located in the southwestern United States. Study findings indicate that collaboration on development of vidcasts contributes to student linguistic development by promoting negotiation of meaning, and this activity further enriches learning when students rotate roles and responsibilities. This study also found that students needed to participate in several production and feedback cycles to develop audience awareness. Therefore, products of student thinking should mimic tools used by real-world experts. Finally, students highly value creative freedom and, when given the opportunity, draw from a variety of skills and talents to create unique representations of learning. (Keywords: vidcast, ELL, ESL, constructivism, project-based learning)

In the last 20 years, constructionist learning environments have gained ground among secondary language acquisitionists, who value the interaction and opportunities for language development that they foster (Godwin-Jones, 2012; Pica & Doughty, 1985; Reyes & Vallone, 2008). More recently, teachers of K–12 English as a second language (ESL) began exploring the use of Web 2.0 technologies within constructionist learning environments, taking advantage of these projects' recursive use of language (Green, 2013; Lee, 2008). Web 2.0 tools easily extend a student's ability to create tangible representations of his or her ideas, conveying enormous variety in skill while developing vision in design and aesthetics. Blogs, avatars, social bookmarking, animations, video, and photographic series—a cornucopia of options—can be

divided, combined, personalized, and shared globally at a rate and with an ease that could not be imagined in the early days of computing (Stauffer, 2008).

Vidcasting, in particular, has grown increasingly popular in ESL higher education classrooms, evidenced by a strong body of research focusing on the use of this technology (e.g., Aguilar-Rosell, 2007; Brown & Green, 2008; Copley, 2007; Hew, 2009; McCarty, 2005). Common uses of vidcasting include distribution of course news, lectures, student interview projects, and student oral history projects (Aguilar-Rosell, 2007, Copley, 2007). Vidcasts grew out of video podcasting, podcasts that contained visual information such as images, short animations, or videos (Brown & Green, 2008). Whereas video podcasts, or "vodcasts," emphasize the delivery of information through speech and audio (i.e., narrated PowerPoint lectures), vidcasts place a greater importance on the visual component: powerful images, setting, context, cues, and representational gestures. Like video podcasts, students can access and stream vidcasts online through video services, such as YouTube, or download them to a portable media player, such as a smartphone. Unlike video podcasts, vidcasts do not present the expectation of serialization. In other words, a student-generated vidcast can comprise one broadcast, in contrast to a podcast or vodcast series.

Studies have found that the use of language during the production of a vidcast is authentic and pervasive—so integrated into the project that the effort it requires of students is not as noticeable (Aguilar-Rosell, 2007; Hew, 2009). In addition, second language learners acquire language skills more effectively when they focus on using language as a way to exchange information that only the learners have (Pica & Doughty, 1985; Porter, 1986). Vidcasting for group-based tasks within constructionist learning environments offers English language learners (ELLs) a myriad of opportunities to exchange information in this manner while engaging in conversation essential to task completion through collaboration and the sharing of responsibility (Aguilar-Rosell, 2007).

Situating Constructionism and Pedagogy for Language Learning

Constructionism, based in part on the research of Piaget, shares the constructivist premise that knowledge is made of mental models that learners construct and reconstruct. However, the theory goes on to postulate that learning is most effective when people can create some kind of meaningful product, often referred to as an artifact of learning (Harel & Papert, 1991). Web 2.0 technologies provide the platforms from which students can share these artifacts of learning with others—an important component of constructionism. Through sharing, tangible representations of learning inform and motivate their creators to incorporate the responses those representations elicit, so that learning becomes a social endeavor (Ackermann, 2009). This social facet of constructionism appears throughout practice and research in language learner settings. Constructionist learning environments for ELLs ideally

facilitate instances where teachers scaffold students in their zones of proximal development, encouraging them to interact and collaborate with peers (Vygotsky, 1978). Even so, the kaleidoscopic nature of ELLs in American K–12 classrooms, which reflects a wide range of background characteristics ranging from socioeconomic status to level of education, complicates efforts to establish this type of learning environment (Gibbons, 2006).

Standards for Effective Pedagogy

Studies defend the practicality and application of the Five Standards for Effective Pedagogy (SEPs) for low-income ELLs (Doherty & Pinal, 2002; Doherty et al., 2003; Padron & Waxman, 1999; Saunders & Goldenberg, 1999). Practitioners consider the SEPs to be critical components for success in classrooms where students struggle with cultural, linguistic, and economic issues. These five standards define pedagogy as a system of instructional activity (Doherty et al., 2003). The first standard calls for collaborative efforts between teachers and students where they share a common goal. The second requires that activities tie the language of instruction and academic content with literacy. The third calls for activities based on students' connections between instruction and their own communities. The fourth standard speaks to the alignment of instructional activities and assessment, with clearly defined expectations and consistent feedback. Finally, the fifth standard entails the use of goal-directed instructional conversations between teachers and small clusters of students (Doherty et al., 2003; Tharp & Dalton, 2007).

Vidcasting in the English as a Second Language Classroom

Using vidcasts as vehicles for language instruction allows ELL students to delve into content area and language learning within an environment that lowers the affective filter (e.g., anxiety) (Reyes & Vallone, 2008). Interactionists, such as Long (2007), promote the use of tasks that require communication and language use in a realistic context, away from the focus of linguistic drills. Creating vidcasts that effectively explain scientific concepts, for example, requires ELL students to first write a detailed script, then choose which visuals best support the explanation (Hoban, Nielsen, & Shepherd, 2013). Goulah (2007) examined how middle school students used digital video as a tool for foreign language learning. He found that although students struggled to use a secondary language for discussion, their development in vocabulary carried over to the videos they produced. The computer interface itself contributed to these conversations, as students had to translate computer prompts and buttons to work with video footage.

Lee (2008) implemented a project-based learning instructional unit in an 11th grade language arts classroom that included a large group of ELL and first-generation immigrant students. Using digital storytelling software, students scripted and produced multimedia stories on immigration collected from either personal experience or the experience of a family member.

Students then shared these stories in a special school presentation to family, school, and community members. Lee, a practitioner in California, found that through the process of collaborating to audio record and re-record their scripts, his ELL students became immediately cognizant of grammatical and syntax errors in their own writing, helping to develop their skills in language arts. The self-awareness generated through multiple narration rehearsals is a key ingredient in the development of language fluency (Hur & Suh, 2012).

Aside from being interactive, technology-based tasks can be highly motivating and personalized, which is an advantage from a naturalist perspective on second language acquisition (Almeida-Soares, 2008; Van den Branden, 2006). Researchers have attributed some of this motivation to a sense of authorship and ownership, encouraged by seeking an Internet audience through a video channel, blog, or Web site (Green, 2013). Dumova (2008) also identified an increase in motivation and self-esteem as students developed ownership over the digital videos they created. Climent (2009) observed high school students creating digital videos demonstrating scientific experiments. He found that despite the fact that many did not receive grades for their digital video projects, students still participated enthusiastically, citing their ability to communicate in a new way as their motivation. Student motivation translates into higher interactivity in other language learning activities as well. Mackey-Smith (2007) determined that mixing literacy tasks (speaking, writing, listening, visual, and sound) increased student engagement in those tasks, whereas Ranker (2008) determined that student use of multimedia to communicate learning motivated learners to engage in writing activities.

The video component of vidcasting presents a distinct advantage: Students create and view language embedded within context. To provide context is to demonstrate that language terms and their meanings change with the identity of the speaker and the situation in which the terms are used. In this manner, learning activities can introduce ELL students in nonformal ways to the process of developing social skills necessary for interaction with English-speaking peers (Gutierrez, et al., 1999). Other accepted practices for supporting reading skills through video are the use of representational gestures and the use of captioned text (Johns & Torrez, 2001). Although there is a general belief that language learners need several years in a target country before engaging in contextual and cultural understanding of slang and gestures (Joan-Ellis, Debski, & Wigglesworth, 2005), Goulah (2007) found that students constructed this knowledge through the visual medium after only a few weeks.

In spite of a decade-long dramatic increase of 57.17% in their ELL population, K–12 environments are severely underrepresented in Web 2.0 and second language acquisition research (Hew, 2009; U.S. Department of Education, 2006). Instead, research heavily favors higher education settings, whereas studies in the K–12 classroom are decidedly lacking (Hew, 2009; Van den Brandon, 2007). Therefore, the purpose of this study was to explore the

integration of vidcasts as student-generated products in a middle school ELL reading classroom. The study considered the case of a group of ELL students who participated in an instructional unit that culminated in the creation of three student-generated vidcasts.

Methodology

Research Design and Research Questions

We designed this study as an exploratory case study within the tradition of qualitative research in which one classroom served as a single case (Lincoln & Guba, 1985). The development of student-generated vidcasts was a key factor in this study. Research suggests that students greatly benefit from wrestling with purpose and content when developing their own vidcasts, giving them the opportunity to further analyze concepts or create original material (Jonassen, Howland, Marra, & Crismond, 2008). Additionally, ELLs benefit from collaborative small-group learning activities, promoting student growth, linguistic interaction, and knowledge contextualization (McGroarty, 1993). With this focus in mind, we developed the following research questions:

> RQ1: How does the process of constructing a group vidcast influence student use of academic language and content?
>
> RQ2: In what ways do the process of constructing student-generated vidcasts and the resulting materials demonstrate student growth and understanding of academic language and content?

Context

The setting for this study was an ESL sixth grade reading class at a medium-sized one-grade campus in the southwestern United States. The selected campus was comprised of four academic teams, with all ELL students placed on the same team with the same reading teacher during the same class period. The number of students in each class ranged from 12 to 27. The academic day consisted of eight classes, with the seventh hour assigned to ESL reading instruction. The school made an attempt to give all ELL students the same schedule for core content classes, a necessity for the one bilingual teacher's aide available on that campus.

The collaborating teacher, a frequent technology user with a learner-centered teaching style, emphasized group work and the use of scaffolding techniques such as "think-alouds." She had a reputation as a reflective professional who consistently integrated feedback from fellow teachers and students into her instructional planning. She expressed an interest in adding student-generated vidcasts to a reading unit as a way to help her ELL students develop a stronger understanding of the upcoming assigned novel. The ESL academic team had access to a laptop cart, 20 wireless laptops, one digital camcorder, and four headsets with microphones for use in vidcasting projects.

Description of Instructional Unit

The classroom teacher and the primary researcher worked together to develop a student-generated vidcast project designed as a project-based learning instructional unit. The novel chosen for this instructional unit was *When Zachary Beaver Came to Town* by Kimberly Willis Holt, a story that takes place in a small West Texas town that is usually popular with students at this grade level and in this community. Windschitl (2002) and Edelson et al. (1999) both emphasize the importance of drawing upon students' cultural background and previous knowledge, as student interest closely relates to personal history.

Before the instructional unit began, one of the researchers and the classroom teacher co-developed and co-presented a 3-hour workshop. This workshop introduced the technical aspects of using Audacity and Movie Maker. Blumenfeld et al. (1991) and Erstad (2002) recommended this practical approach. These researchers found that including preteaching of technology skills before full-scale implementations of instructional units helped students maintain focus on academic goals and avoid becoming cognitively overwhelmed. During the workshop, students produced a small video podcast, going through the brainstorming, scripting, and storyboarding steps that would make up the rest of the instructional unit. The workshop also served as a platform for the researcher and teacher to identify any technology, resource, or student issues that they needed to address before introducing the full instructional unit.

For the project, students divided into four groups of four—groups that remained unchanged throughout the scope of the assignment. Cementing group assignments helped the teacher track students' ability to participate in group discussions and planning so that she and the students could more easily keep communication focused on academic goals (Barron, 2003; Edelson et al., 1999; Krajcik et al., 1998). The instructional unit consisted of three vidcast projects. We further divided each project into four sections. In the first section, students read an assigned portion of the novel together as a class. While reading, students used index cards to collect words and ideas that they would like to explore in their group vidcasts. This section concluded with a vocabulary test in which students were required to use vocabulary terms while summarizing what they had read in class thus far.

The second section of each vidcast project involved the use of an anticipation guide or discussion session in which students brainstormed responses to statements such as "Having a wish come true always leads to happiness," in light of students anticipating the main character's loss of his talented mother, who was discovered by a record producer. These discussions served as student think-alouds, detailing their assumptions and use of contextual clues to define new vocabulary terms. In the third section, students used their answers and findings to create a storyboard and script for the group vidcast. During the process of creating the first vidcast, we provided students with an example

storyboard, as the workshop highlighted a need for more thorough explanation on the structure and use of storyboards.

Throughout the project, students were responsible for scripting, storyboarding, and creating visuals to support their vidcast production. The use of storyboards and scripting reflected expert activity and added authenticity to the design of this project (Blumenfeld et al., 1991; Edelson et al., 1998; Erstad, 2002). In the fourth and final section, students shot and edited their videos, adding effects, transitions, and credits. The students then posted vidcasts to a blog that was accessible by parents and school personnel. Throughout the course of the project, students were able to comment on the group vidcasts to create a workshop environment in which they could incorporate continuous suggestions for improvement into the design of the next vidcast. This social interaction is a basic tenet of constructionism, which calls for learners to wrestle with the responses their learning artifacts elicit (Harel & Papert, 1991).

Participants

Sixteen ELL students enrolled in the ESL reading class. We selected eight students using within-case sampling based on a "prime concern with the conditions under which the construct or theory operates, not with generalization of findings to other settings" (Miles & Huberman, 1994, p. 29). Using maximum variation sampling, we chose two students from each of the collaborative groups set up by the classroom teacher. Of the eight students selected, seven were first-generation immigrants from Mexico, six averaged 3–5 years in the United States, and one was a recent arrival with less than a month in school. The eighth student was a first-generation immigrant from China who had lived in the United States for 1 year. According to the most recently completed home studies, all eight participants identified their native language as the primary language spoken at home. We provide a more detailed description of each participant in the subsequent section on findings.

Data Collection

We used several sources of data to address the research questions of this study and inform the selection of participants for semistructured interviews.

Artifacts. Practitioners base constructionist learning environments on the premise that learning is most effective when people can create tangible representations of their ideas that they can share with others, both informing and, in turn, incorporating the responses these elicit (Ackermann, 2009; Harel & Papert, 1991). Data in the student artifact of learning category included storyboards, note cards, unedited student videos, and student-generated podcasts. We used artifacts to address research questions and triangulate findings collected through observations, field notes, and semistructured interviews.

Observations. We documented observations in field notes, digital video, and an observation protocol. These three observation methods allowed us to

record observations without distracting the study subjects. It also allowed for the cyclical relationship between preliminary data analysis and observation (Lincoln & Guba, 1985). We used the observation protocol, adapted from the protocol used by Grant and Branch (2005) for use in constructionist learning environments, in the beginning of the study to organize field notes. The use of digital video enabled the analysis of behavioral displays that served as communicative devices and spoke to the social component of collaborative projects.

Semistructured interviews. We conducted semi-structured interviews after students completed the instructional unit, and we recorded these with a digital audio recorder, thus maintaining a trustworthy data source. The interviews, conducted in an empty classroom, lasted approximately 20 minutes each, with the exception of a Chinese student. Her interview lasted longer due to the presence of a Chinese translator. The interview questions attempted to mine student perceptions of the researcher's interpretations. Therefore, we often tailored questions to a specific set of group interactions.

Data Analysis

We conducted data analysis for this study using the constant comparative method for grounded theory research (Glaser & Strauss, 1967). The constant comparative method is appropriate to a constructionist learning environment because it provides the researcher with the ability to revisit errors made in initial categorization of data. Continuously analyzing the data generated classifications or codes. Data analysis continued throughout the study. We also coded student artifacts and assessments, and we mined the resulting codes for patterns. One researcher noted each code and graphically organized these in different ways. The researcher developed themes that presented themselves across the data (Lincoln & Guba, 1985). Finally, we conducted member checks, reviewing codes and themes in the form of semi-structured interviews (Denzin & Lincoln, 2008). We maintained data triangulation using multiple data sources and the involvement of peers in the review of codes and themes for authenticity (Lincoln & Guba, 1985).

Findings

This section profiles the eight participants the researcher interviewed. The comments are translations to English because many of these conversations were either in Spanish or conducted through a Chinese interpreter.

Ricardo

Ricardo moved with his family from Mexico to the United States the summer before his second grade year. When he entered the ESL program, he had an English vocabulary comparable to a 3-year-old native English speaker. At the time of this study, Ricardo struggled to speak in Spanish, still able to understand but choosing to communicate in English. Initially, Ricardo spent a

considerable amount of class time antagonizing other students by moving notebooks, throwing bits of paper, and tapping chairs with the edge of his foot. After some discussion with the school counselor, the teacher made the decision to pull Ricardo from the group and have him complete the first vidcast on his own. While Ricardo recorded his first vidcast, we observed a change in attitude:

Teacher: Why do you think it would be a bad thing…you know…to have your dreams come true? Why do you say that?

Ricardo: Because, you never know what's gonna happen. You never know. It could be bad. You think that's what you want but you're wrong. Like Toby.

Teacher: That's good [stops the video camera].

Ricardo: Can I say that last part again?

Teacher: What part?

Ricardo: The last part. Toby. I wanna explain it more.

From this point on, Ricardo became actively invested in the vidcast project. He frequently corrected group members on their pronunciation, expressing frustration over their inability to memorize larger portions of script. In the third vidcast, he took on the lead acting role. A strong desire to create a better product replaced his apathy:

Researcher: What would you change if you could change anything?

Ricardo: The words, like practice more, and make the video again.

Researcher: So you want to reshoot your video?

Ricardo: I want a do over on some words because they didn't sound right. I would tell them to speak louder because I couldn't hear Maria [another group member] when she was the dad.

Priscila

Priscila moved to the United States at the beginning of first grade. She entered the ESL program with an English vocabulary comparable to a 2-year-old native English speaker. Priscila shared a group assignment with Ricardo. In the beginning, she expressed disgust with Ricardo's lack of participation. During the first vidcast, when the group lost Ricardo, Priscila organized the group and assigned tasks to the others. However, when Ricardo returned, she became frustrated, accusing him of shutting her out: "He always say that me and my sister doesn't do anything and that's why he have more control because he is doing the stuff. Sometimes he do it wrong but he won't let me fix it!" With some intervention from her teacher, Priscila began to reassert herself, laying claim to the responsibility of creating graphs for her group's second vidcast. For the production of the last vidcast, when students were

responsible for reenacting a scene from *When Zachary Beaver Came to Town*, Priscila and Ricardo worked together to select props and assign acting roles.

Carlos

Carlos attended elementary school through the third grade in Mexico. Having received some English instruction there, he entered the ESL program with the English language proficiency of a kindergartener. Carlos took meticulous notes on any directions provided for the project. He insisted on copying all speaking parts onto individual note cards, testing out font sizes for readability. Although his attention to detail benefited Carlos's group once filming began, the teacher had to remind him to allow other group members to participate in the planning process. He carefully monitored the progress of his group, chafing at any hint of silliness or distraction:

Researcher:	How much of this movie did you finish today?
Carlos:	Not much because they were laughing and not taking it seriously.
Researcher:	I noticed Mrs. Holt had to come tell you what to put in the movie because of the silliness.
Carlos:	Yeah . . . That's why we didn't have as much control because they were goofing around!

Unlike the majority of students in the class, Carlos did not enjoy the video editing process. He felt it limited his group's ability to be creative: "We put some stuff down and we think about something to go with it but we had to erase everything to put another thing in." He argued for reshooting videos during every vidcast production cycle.

Adriana

Adriana arrived in the United States a month before this research study began. She scored below a kindergartener's ability in English language skills. As a result, Adriana's arrival placed some pressure on the other students and the classroom teacher because she required a large amount of the teacher aide's attention. Adriana joked with other students but sat quietly with an air of detachment when planning for the vidcast began. Adriana voiced the reason for her hesitation to contribute to the group project: "I don't like Mateo [another boy in the group] there. Because I practice [any lines assigned to her by the group] and he makes fun of me. He plays around a lot." By the third vidcast, she became a bit more involved:

Researcher:	Who's playing the part of Toby?
Adriana:	I am. We are going to fight. Monica is throwing money at me.
Researcher:	A fight scene?

Carlos:	Yeah, we're gonna slow it down . . . like in the movies [imitates a slow motion movement]. Woooaaa!
Researcher:	Whose idea was that?
Monica:	Adriana's idea.

Although Adriana struggled to speak her lines, this reenactment of a fight scene from the novel proved immensely popular with the class and might have encouraged her. Over the course of the project, Adriana became slightly more willing to try.

Eliel

Eliel was born in the United States but moved to Mexico with his family soon after. After his parents' divorce, Eliel moved back to the United States with his mother. Eliel was one of only three students involved in this project who had access to a computer at home. During the first vidcast production cycle, he balked at storyboarding and scripting. His interest in the project demonstrably increased with the introduction of video cameras and editing software: "I like computers. I want to learn how to work with them. We should use them more." Eliel was painfully aware of his own language limitations. However, instead of shutting down and refusing to participate, Eliel became more determined to speak in English. During the second vidcast production cycle, Eliel asked Pedro, a member of his group, to correct his pronunciation. He also borrowed Carlos's idea of using note cards for cues:

Researcher:	You told me before you were embarrassed. Are you still embarrassed? Now that you saw the video [before editing]?
Eliel:	Well, when we used to go to the classroom I was more embarrassed. And in that part where Hugo got baptized and I talked, I was laughing, but on the inside I thought— "eek, that went badly" [laughter].
Researcher:	So what do you want to do?
Eliel:	I'm gonna practice more. I'm gonna say it over and over before recording it.

Hilana

Hilana belonged to the same group as Eliel. At the beginning of her sixth grade year, Hilana, a native of Mexico, tested at an English language proficiency of a 7-year-old. For the first 2 weeks, the researcher did not observe Hilana share an opinion or actively participate in the vidcast project. When Eliel gave her a speaking part for the first vidcast, she became angry and sullen. An exasperated Eliel defended himself to the group: "She gets mad at me anytime I look at her!" Hilana finally spoke up: "Anytime I say something

wrong you make fun of me and laugh!" Fortunately, another group member, Pedro, was able to sooth both Eliel and Hilana by volunteering to help her with her lines. Once Hilana watched the first round of vidcasts with her class, the researcher onsite observed a small shift in her attitude. Although she still avoided lengthy conversations with Eliel, she began to contribute in small ways to her group's second vidcast. She took responsibility for coloring a percentage graph and continued to work on her lines with Pedro.

Evaldo

Evaldo was the only study participant expected to exit the ELL program at the end of the school year. He finished the previous academic year with a B average, passing all sections of the fifth grade state assessment. Evaldo, along with Eliel, had a computer at home. Like Ricardo, Evaldo had stronger linguistic skills in English, even though he understood conversational Spanish. Evaldo's strength in English was a boon for his group that included the only Chinese ELL student in the school. He would patiently write down words for this student to type into her pocket translator. Describing his experience with vidcasting, Evaldo focused on the opportunity to help:

Researcher:	What did you like most about working in your group?
Evaldo:	Probably putting it all together and helping each other. When they needed help, I could help them a lot.
Researcher:	So you enjoyed helping?
Evaldo:	Yeah. They didn't know how to do it and they needed my help.

Evaldo, the only boy in his group, never complained or expressed the typical sixth grade disgust toward working with members of the opposite sex. He genuinely seemed to enjoy helping others.

Xiang Yu

Xiang Yu, the only Chinese ELL student on campus, initially tested at a first grade linguistic level for English. She was the third student participant who had access to a computer at home. Like Adriana and Hilana, Xiang Yu participated very little in the planning stages of the first vidcast. Unlike Adriana and Hilana, Xiang Yu received a significant amount of encouragement and support from her group members. She befriended Yali, another group member who spoke little to no English. To communicate, both Xiang Yu and Yali had to use English. Evaldo bridged these conversations in the beginning, but by the second vidcast production cycle, the group had developed a distinct communication style. Xiang Yu described their efforts: "They sign what I need to do and explain how, and sometimes they

write it down on a piece of paper." Xiang Yu quickly became an integral part of her group.

> Researcher: What happened that made you feel you could participate more?
>
> Xiang Yu: The first movie I only did what the other students asked me to do. Other students wrote everything down, just told me "you read this." But for the second movie, I helped the other students a lot. I helped them make a graph, so I felt I had something to contribute.

Unlike Hilana and Eliel, Xiang Yu appreciated the leadership provided by Evaldo and another group member, Bruna. When practicing her lines she would often check her pronunciation with one of them and adjust if necessary. She depended on them to help her understand directions and manage her responsibilities and viewed their feedback as overtures of friendship: "I feel they are very kind, very kind to help me and work together. I feel they really want to be friends." For the last vidcast, Xiang Yu's group decided she was capable of taking over a larger speaking part.

Results Framed by Research Question 1

Research question 1 asked, "How does the process of constructing a group vidcast influence student use of academic language and content?" The three emergent themes addressing research question 1 were (a) working together, (b) perception of ability, and (c) language of planning.

Working Together

The first standard for effective pedagogy in ESL classrooms calls for collaborative efforts between students who share a common goal (Doherty et al., 2003). It values collaborative exchanges that occur when students elicit and incorporate feedback on artifacts of learning.

Shared responsibility. Group tasks that require different types of expertise contain multiple opportunities for group members to share responsibility for critical components (Barron, 2003). Several participants addressed the benefits of shared responsibility:

> Xiang Yu: Other students can do a better job on some things than I can. In the end for the video editing, for the editing part, I did a lot on that part. I don't feel any frustration with sharing different jobs because the other students can speak better than I can.
>
> Evaldo: When I look at the other groups' vidcasts, I think our group has the best ones. We all need help doing things and

some in our group know more what to do and how to do it. I think we did a better job, working together.

Solving problems. Another aspect of working together, solving problems, initially confounded the classroom teacher. She could not fathom that a louder classroom might translate into productivity. However, group members confirmed their efforts to solve problems through conversation:

Carlos: All of us, we just had to talk. If you didn't like that character, if somebody else liked it then they could do that paper and all that. So we wrote it using stick people so you know who was who. All of us in our group . . . we decided that together.

Hilana: When we started helping each other in the group, when we started working better together . . . when we started figuring out what we were going to say and what we were going to do . . . it got better. Our videos got better.

Negative evidence. Negative evidence is a stated correction or rephrasing of an incorrectly formatted statement (Gibbons, 2006). Negative evidence is an important part of the negotiation of meaning that language learners engage in to arrive at a mutual understanding. Priscila formerly acknowledged this type of linguistic collaboration in her group: "Ricardo helped me with the word 'know.' I kept saying 'k-now' [hard k]. He helped me learn to say it right." On the observation protocol, the researcher logged 38 separate instances of negative evidence. The unedited video footage for a group's second vidcast captured a typical exchange:

Eliel: I baptize you in the name of the Father, Son, and the Holy Goes.

Pedro: Holy Ghost. Do it again.

Eliel: I baptize you in the name of the Father, Son, and the Holy Goes.

Pedro: Ghost! You have to say the "t"—Ghost [heavily speaks "t" sound].

Perception of Ability

The second theme that emerged, particularly evident in the semi-structured interviews, was perception of student ability. An analysis of the published vidcasts revealed a significant increase in student involvement and linguistic effort. This study identified two subthemes: perception of linguistic ability and perception of leadership ability.

Perception of linguistic ability. Changes in perception of linguistic ability served as motivators and confidence boosters for many of the student participants. These changes, in turn, affected student desire to develop language

skills further. Some students perceived themselves to be weaker initially but developed confidence in their linguistic prowess as the vidcast project continued:

Xiang Yu:	Actually, I can be assigned more tasks to do in the future. This time, they [group members] always assigned the little jobs for me to read on the paper.
Researcher:	On the script?
Xiang Yu:	Yeah, on the paper, but actually I feel I can read more.
Researcher:	Did you always believe that? Or do you believe that now?
Xiang Yu:	Now. I think I can read more now.

Other students developed confidence when confronted with their misperception of the abilities of others:

Hilana:	During the first one [vidcast] I wasn't interested in speaking English at all. But on the third one I wanted to try.
Researcher:	Can you explain to me why you changed your mind about trying to speak English?
Hilana:	Because I saw everyone else trying to speak English in their vidcasts. I was a little embarrassed but not as much.
Researcher:	Why? Why weren't you as embarrassed as before?
Hilana:	I thought they spoke better than they do.

Still, other students perceived their limited ability to memorize speaking lines in English as a strong motivator for working on their linguistic ability:

Eliel:	I got frustrated with the cards [script]. I wanted to say them like that [snaps fingers] but it was hard to memorize it. I feel like I fight with some words. I can't speak them very well.
Researcher:	Are you willing to try more now then?
Eliel:	Yes. I am trying to speak English more so I can learn.

Perception of leadership ability. Challenges to student perceptions of both their own abilities and the abilities of others in the classroom shifted roles in several groups. Students viewed Heralto and Bruna, both special-education students, as group leaders at the conclusion of the first vidcast cycle. Both of these students could comfortably converse in English. Both worked with their group members on writing and pronunciation. Evaldo voiced this role shift:

Eliel:	Heralto helped us a lot. He knew what to say on the movies. He was the best writer too. So he wrote down everything we had to say. Then he would help us say it over and over.

Conversely, Yali and Monica, who had previously been leaders due to social standing, found themselves stepping back into more passive ranks. These two students struggled with pronouncing and memorizing assigned speaking parts. Other opportunities for leadership arose from abilities certain students exhibited with technology. Both Eliel and Xiang Yu had computers at home and enjoyed working with Movie Maker. Carlos also facilitated much of the video editing and publishing in his group. Xiang Yu explained that her favorite part was working on the editing of the videos: "I liked adding all the tricks and colors, typing the titles. It was easy for me. It was the way I could help my group the most." These three students took on leadership roles within their groups because of their comfort with technology.

Language of Planning

The third theme, language of planning, emerged from observations and inter-actions with students who varied in their language choice for planning and production. Freeman and Long (1991) point out that unconscious switching between two language paradigms is not unusual for bilingual children. When originally approached to participate in this research study, the classroom teacher expressed a strong desire for a technology project that encouraged students to speak English on a daily basis. She continually discouraged stu-dents from translating for each other. Students in the class were well aware of the teacher's system, but with the exception of Xiang Yu's group, they con-sciously chose to plan in Spanish. Eliel defended his group's language of plan-ning choice:

Eliel:	Anytime we planned, we planned in Spanish. We always spoke in Spanish . . . me . . . Heralto . . . Hugo . . . The only time we used English was when we were recording the video.
Researcher:	So without the video part, you wouldn't have used English?
Eliel:	No. We wouldn't have at all. It takes too long. Like with Hugo. He knows a lot of words [in English]. If you teach him, he learns it. But if we work in Spanish, things get done faster. So we teach him the words in English he needs to know.

Students were very aware of the ability of each group member to work in English. They knew that they would have to use English when completing storyboards, speaking lines, and producing vidcasts. Faced with a set amount of time, three groups chose Spanish as the language of planning for the sake of expediency. In contrast, Xiang Yu's presence negated Spanish as a lan-guage choice for her group. Evaldo described this group's communication approach:

Evaldo:	We would kinda sign what she needed to do and kinda explained it how, and sometimes we wrote it down on a piece of paper.
Researcher:	Why did you write it down?
Evaldo:	So she could understand us. She had this thing that she used to put letters in and told her what it meant [pocket translator].

Bruna and Evaldo both communicated well in English and so bridged communication attempts between Xiang Yu, Yali, and the rest of the group.

Results Framed by Research Question 2

Research question 2 asked, "In what ways does the production of student generated vidcasts demonstrate student growth and understanding of academic language and content?" While research question 1 focused on process, research question 2 looked more closely at the vidcasts themselves. The two themes addressing research question 2 were the language of production and the products of student thinking.

Language of Production

The use of vidcasting in this instructional unit allowed students to engage with content and language learning while experiencing lower levels of anxiety and embarrassment (Reyes & Vallone, 2008). Even so, it is important to remember that while students chose their language of planning, the classroom teacher determined the language of production. As a result, a willingness to engage with English for production was especially important. Three characteristics of vidcasting contributed to students embracing English as the language of production: the presence of a visual component, the ability to edit out mistakes, and student awareness of a larger audience.

Presence of a visual component. While working with raw video footage, students became aware of mispronounced words, lengthy pauses, and jumbled sentences. Students discussed how video footage developed awareness of linguistic struggles:

| Adriana: | I guess before Monica kept telling me I was saying *water* wrong but I didn't pay as much attention. But when I said it over and over and then I saw it on the video and I needed to practice it over and over so now I know it. |
| Eliel: | When we were taping I wouldn't notice my mistakes but when I was watching it back I noticed I couldn't say some words very well. When I heard myself saying the words, I didn't say them right. So now I have to try more, so I can sound better. |

The ability to edit out mistakes. The ability to edit out mistakes minimized negative feelings students had after recording foibles. The simplicity of Flip cameras made it possible for students to collect multiple takes so that an edited vidcast demonstrated only mastery of a speaking part.

Xiang Yu: For me, I felt better about watching my mistakes because I knew that only my group would see it. When we finished the vidcast, only the good parts got published.

Ricardo: I liked editing the video. When we practiced the telephone part there was a lot of things wrong. If we had to leave those in, our video wouldn't be the best so it's better to cut them out. Maria got embarrassed so she didn't want anyone to see.

Student awareness of a larger audience. Publishing the vidcasts created an audience that included the classroom, parents, and district employees. Grant and Branch (2005) suggest that students are strongly motivated to carefully prepare and revise work for external audiences. This motivation threaded through student acceptance of English as the language of production:

Hilana: Heralto helped me with my lines for Kate [character assigned]. I wanted to make sure that I was saying the words right since the whole school can see me.

Carlos: The first time [making the first vidcast] we goofed around a lot but by the second time we had to take it more seriously so we could show the other groups.

The presence of an external audience invited attention to detail and a desire for larger roles in Ricardo's group. Maria and Priscila both took on larger speaking parts, donning costumes to transform themselves into book characters. They convinced another group member to wear seven coats for one take:

Maria: Put this on!

Priscila: Put this one on too. You need more. You're too skinny to be Zachary Beaver. Put this one on [adding a third coat].

Ricardo: Why don't you put on this whole stack? [Pulls several more from a pile of lost-and-found coats]

Pedro: I don't want to! I look silly!

Ricardo: No you don't. You have to look fat. No one else is looking fat [in other vidcasts] for Zachary.

Products of Student Thinking

This project resulted in numerous products of thinking, such as storyboards, brainstorming materials, and unedited video footage. Windschitl (2002) suggested the assessment of products of thinking along with final products helped teachers determine how student ideas and understanding evolved over time. This theme emerged from a comparative analysis of the materials students created before publishing as well as completed vidcasts. The subthemes identified in this section were language development and creative freedom.

Language development. Before the first vidcast cycle, students made little attempt to write out thoughts in English. Without production experience, the children saw no reason to extend their language development efforts. After students watched the first vidcasts together as a class, many no longer hesitated to use English on products of thinking. By the third vidcast cycle, most students completed products of thinking in English (see Figures 1 and 2).

During class, Priscila explained why she decided to storyboard in English. She said, "I wrote in English more because I had to write it down so I could read it and then know what to say on the video. I used a lot more English this time because we had to on the video and I wanted to sound good."

Creative freedom. Research indicates that students maintain high levels of motivation and interest as long as they have freedom to design and develop unique learning artifacts (Blumenfeld et al. 1991). Student participants were

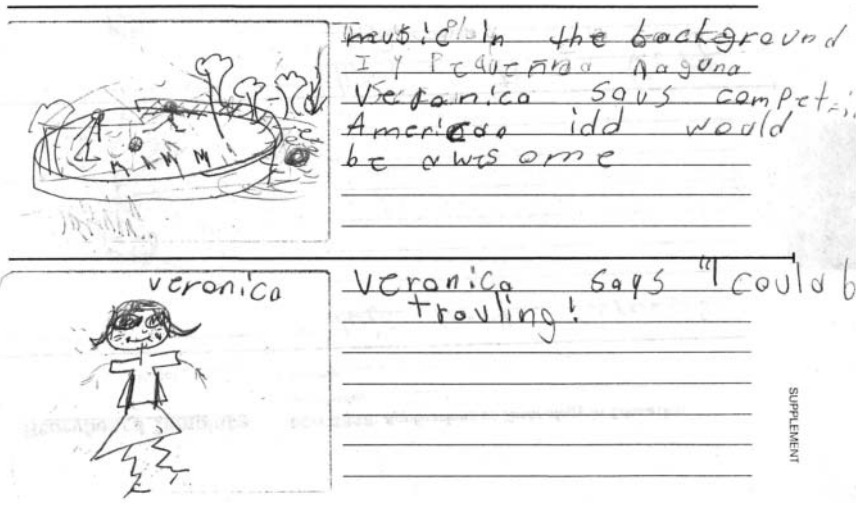*Figure 1.* First vidcast cycle product of thinking by Priscila.

Figure 2. Second vidcast cycle product of thinking by Priscila.

no different and prized the freedom to make creative decisions about the look and feel of their vidcasts:

Xiang Yu: [Classroom teacher] gave us a lot of control over the movies. We decided what was in the movies. Sometimes when it didn't sound right she came and helped us a little. We talked about it and we all agreed that it made it better [suggested change].

Evaldo: Putting the colors and titles and stuff made our vidcast more interesting. Everyone knew that was our movie because it was a red title [red group]. You know, you use that technology, learn how to do all this stuff and if you go home you can do that stuff too.

In addition to the creative control students possessed, vidcasts allowed group members to showcase a broader range of abilities:

Ricardo: I like drawing and acting, 'cause we get to act different things that we did about Zachary Beaver, like the mom calling part . . . I don't know . . . I just like acting. I was in theatre arts last year but this year I'm in art.

Eliel: I liked going out of the classroom to record. Hugo found the best places for us to video. And [math teacher] let us borrow her truck. It turned out so good!

Carlos: There was this part that we edited out but then we put it back in because we were laughing at it. Adriana said the
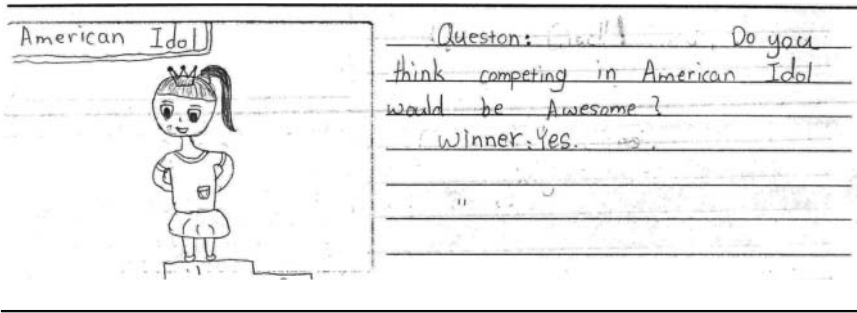
Figure 3. Xiang Yu's illustrated storyboard for the first vidcast cycle.

word so funny! [laughter] We asked her if we could leave it and she said "yea" 'cause she was laughing too [describing creation of blooper reel].

Xiang Yu exemplified the benefits of multiple opportunities for creativity. For the first vidcast cycle, she carefully illustrated her group's storyboard. The results impressed the others so much that they assigned her the responsibility of creating a large pie graph for their second vidcast (see Figure 3).

For the third and final vidcast cycle, the students carefully diagrammed the plot of *When Zachary Beaver Came to Town*. Each group selected scenes from their completed diagrams to reenact in any way that they chose (see Figure 4).

Carlos, Adriana, and Monica worked on a carefully choreographed fight scene that included sound effects and visual burst clouds. It was the only vidcast cycle in which Adriana became actively involved. Carlos defended their choices: "We wanted to do something different and make it more exciting. The two girls were doing the fight and we needed the sounds so it looked real." Ultimately, the creative freedom students received translated to longer and more linguistically challenging vidcasts.

Discussion

Designing for Collaboration

Research indicates that collaboration is most effective when students rotate assigned roles and responsibilities. This gets students invested in all areas of the project, building group cohesiveness and achieving a strong sense of accomplishment (Barron, 2003). Although this class did not officially assign roles and responsibilities during this study, students were encouraged to switch editing duties with a kitchen timer. Evaldo explained: "When I look at the other group's vidcasts, I think our group has the best ones. We all need help doing things and some in our group know more what to do and how to do it." Research supports his sentiment. For example, Lee, McLoughlin, and
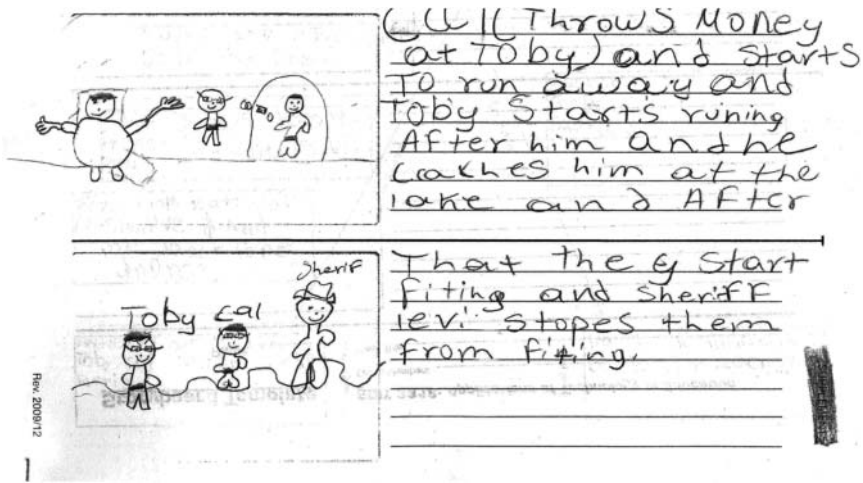
Figure 4. Storyboard of Carlos, Adriana, and Monica's fight scene.

Chan (2008) found that sharing a common goal and social setting resulted in high levels of open communication and mutual respect.

Members from each group shared how students worked together to resolve vidcast planning and production issues. Ricardo explained: "The graph for our second movie didn't look right. It was all messed up. So Heralto showed Priscila how to do it 'cause he's good at math. He knew how to draw the lines with the numbers." Lavonen, Meisalo, and Lattu (2002) found that student collaborations reflected a sense of responsibility for each other's learning. Goulah (2007) points out that when a group works on a challenging assignment, a group member can tackle problems beyond his or her own abilities.

Barak and Maymon (1998) recommended that teachers directly address leadership skills prior to problem-based learning (PBL) projects. In this study, all four study groups generated a student leader, responsible for a large portion of video shooting. These findings closely align with those of Orr (2007) and Goulah (2007), who concluded that in communities in which students are responsible for creating a technological product, one student will assume the position of technology leader. In addition to technology leadership, Orr found that special-education students, when working with technology projects, gain positive status within their student community. This phenomenon was also a part of the present study in which Pedro and Bruna, both special-education students, gained leadership status in their respective group due to linguistic ability.

Designing for Accountability
Grant and Branch (2005) suggest that having external audiences strongly motivates students to prepare and revise their work carefully before

publication. However, this study found that students did not develop audience awareness until after the first vidcast cycle and first round of peer feedback. Previous research concluded that both student ownership and investment in group product development are closely related to students' ability to perceive products as authentic (Hay & Barab, 2002). The delay in audience awareness suggests that students did not consider vidcast production an authentic endeavor until the class provided peer feedback. In this study, the delayed awareness points to the importance of providing students the opportunity to create a new product based on feedback. Thus, students begin to consider more sophisticated production issues.

Another component of the instructional unit that established accountability was the continuous grading of student products of thinking. Previous researchers have suggested that teachers assess products of thinking to determine how student understandings evolve over time (Grant & Branch, 2005; Windschitl, 2002). Findings for this study indicate that products of student thinking accurately depict student linguistic growth during the completion of a group project. Grading student products allowed the researcher and the classroom teacher to see when groups switched from Spanish to English in language of planning and which vocabulary terms needed revisiting before testing. Erstad (2002) similarly found that products of student thinking reflected the amount of time students spent with academic content to fully understand the material and create accurate visual representations.

Designing for Language Learning

The most valuable component of language learning is the motivation to communicate in a second language (Van den Buren, 2006). As students were not able to choose another language of production, this willingness became especially important. Earlier studies on student design and development of learning artifacts argue that motivation to engage with academic content is increased when creative freedom is present (Blumenfeld et al., 1991; Barak & Maymon, 1998). Creative freedom was prized by this study's participants, who saw it as an opportunity to showcase unique talents and abilities. Although Maier and Fisher (2006) found that camera presence distracts students, this study concluded that students used creative freedom to improve group vidcasts based on peer and teacher feedback. They developed fuller characters and detailed speaking parts, becoming increasingly concerned with quality as they completed each vidcast cycle.

Another component of student buy-in for English as the language of production is a learner's ability to edit out language mistakes. The availability of digital do-overs minimized negative feelings students had after viewing linguistic or performance mistakes. This subtheme supports the motivation process for language learners proposed by Dörnyei (2002), who states that instructional activities should capture the learner's desire to succeed despite growing levels of difficulty. By treating mistakes and setbacks as necessary

steps in the learning process, students in this study felt comfortable using English in production.

During planning and production of all three vidcasts, students generated storyboards, vocabulary materials, and unedited video footage. Constructionist learning environments translate into student success when teachers provide formal scaffolding, mimicking tools used by real-world experts (Edelson et al., 1999; Lavonen et al., 2002). To this end, the classroom teacher utilized a storyboard form available from the American Film Institute (AFI, 2010). This study determined that students made little attempt to brainstorm and storyboard in English during the first vidcast cycle. However, after initial production experience, students grasped the importance of writing down thoughts in the language of production. Language development through products of student thinking was also identified by Mackey-Smith (2007) and Goulah (2007), who both concluded that digital video encouraged language of production chronicled in storyboarding, video shooting, and gesturing.

Implications for Future Research

Teachers who are considering vidcasting for their classrooms need to plan for multiple vidcast cycles so that students have the opportunity to improve. Students in this study experienced some linguistic failure after the first vidcast was complete. They reviewed their own mistakes both through peer and audience feedback and by comparing their own vidcasts with other group productions. Almost all of the students interviewed in this study pointed to this event as a catalyst for working to improve their pronunciation, script, and vidcast design. In this study, the majority of students spoke Spanish. Without the presence of a monolingual audience of English speakers, and without the requirement of English as the language of production, these students might not have transitioned into using English during planning. Therefore, if the class allows students to plan in a shared, native language, teachers should hold students accountable for the language of production throughout the project. Some students need individualized attention to participate in these types of projects. Adriana's literacy skills were so low that she did not seem to benefit from this project academically apart from her time with the teacher's aide. Ricardo also did not benefit from the project until the school put individualized behavioral management into place.

Research on the integration of Web 2.0 technologies in K–12 ESL classrooms is decidedly lacking. Although this study contributes to the process of identifying variables and processes present in Web 2.0 student production, there is a need for further case studies such as this one. The use of one language for planning and another for production created an educational tension that mirrors the ongoing debate among bilingual educators. Researchers should explore the role of technology in this debate. Students continually spoke to their own motivation to improve linguistic ability separate from academic achievement. Scholars should quantitatively analyze the impact of

technological projects on linguistic prowess to enrich the emerging picture on these types of assignments. Finally, future research should also consider the impact of instructional partnerships and administrative support on the implementation of constructionist learning projects. These projects are time consuming and place a heavy burden on teaching staff. The characteristics of environments that lend themselves to the implementation of K–12 vidcasting deserve time and attention.

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