

Building Community and Understanding Evolution of Thought through Digital Storytelling within a Knowledge Building Context

Robert Huang, University of Toronto, rob.huang@utoronto.ca

Abstract: Due to the pandemic many teachers had little opportunity to prepare for remote learning. To ameliorate the potential negatives associated with synchronous lecture-based online learning and switching between online and in-person multiple times; digital storytelling was applied within a Knowledge Building context. This study investigated how digital stories could help build community by eliciting deeper connections with knowledge and peers.

Introduction

Pervasive learning is a core principle of Knowledge Building (Scardamalia, 2002), but it is a challenge for teachers to connected what occurs in a classroom to a student's lived experiences beyond the walls of a school. To increase epistemic agency in students and encourage more connections to their personal experiences, the practice of digital storytelling is a promising approach, especially embedded within a Knowledge Building. Digital storytelling (DS) is the creation of short personal narratives through the combination of different multimedia (Lambert, 2013). Through the act of developing a digital story, student's not only gain deeper understanding of a subject, they also build a keener sense of their own learning through metacognitive acts (Yang & Wu, 2011). This study seeks to address the challenges of building community during pandemic learning based on the following question: *How may the sharing of digital stories influence community building?*

Methodology

This study took place over two school terms from January to June 2021 at an independent school in Toronto, Canada. The Grade 2 class consisted of 22 students (age 7 - 8) studying the life cycle of salmon and human impact on their habitat. The class was split into two groups of 11 students in order to meet public health protocols. There were two Knowledge Building sessions per week which lasted 30 minutes virtually per session during lockdowns and 90 minutes per week prior to lockdowns. Modalities of learning included: reading, writing and typing, to clay modelling, and drawing (analog and digital), to digital stories, and finally discussions with experts or deeper dives into larger societal or environmental issues.

In this design-based research, observations were conducted for each Knowledge Building session, they were captured on video or audio, amounting to 25 observations. Meetings between the teacher and research were held regularly to reflect on design intervention successes and further iterations. Students also produce 18 digital stories. These videos were pieced together by the researcher and reinserted into Knowledge Forum as digital artifacts in April 2021. In addition, learning analytics were collected in KF to complement the qualitative data collected. Three KF views (pages) were used for discourse: *Salmon Information*, *Salmon Stories*, *Sustainable Environments*. Across these 3 views, students produced 264 notes, and read each other's notes 1622 times. All meetings, observations, digital stories and interview were transcribed verbatim and a thematic analysis was performed. Data was primarily coded for mentions of digital storytelling practices to determine overall interest and engagement with digital stories, and their associated skills and practices – such as storyboarding, drawing and so on.

Results

In an effort to reduce the potential friction between idea generation and reifying it various modalities of expressions were introduced. These included clay modelling, drawing online, video creation, use of Knowledge Forum and so on, students were given more avenues to engage with the information presented to them, and most importantly their peers. To better understand how digital stories affect student learning within a Knowledge Building community, online synchronous and in-person discussions were coded for indirect and direct references to various modalities. Initially it was to gauge student interest in digital storytelling as a viable means for idea expression however what emerged was how different modalities affected engagement both in the content and the community.

In terms of frequency of references there was an interesting distribution (see Figure 1). Students referenced various modalities 99 times with video being the most dominant at 29, followed closely by drawing (15), Seesaw online journaling (10), and discussions (9). Discussions included debates between multiple students or think, pair, share activities. There are a number interesting points related to the data particularly in regards to

which modalities received more or less references. Video was referenced the most, this could be due to a number of reasons. First, it is reflective of the role video has in the lives of students as one of the primary avenues they are entertained, receive information and learn. Second, educational videos and expert video recordings were used as an additional means of teaching students about salmon. Further analysis of the data related to video references revealed that students were not only discussing videos they were watching in class and the need to work on their videos they were also offering suggestions to other students on how to improve their digital stories.

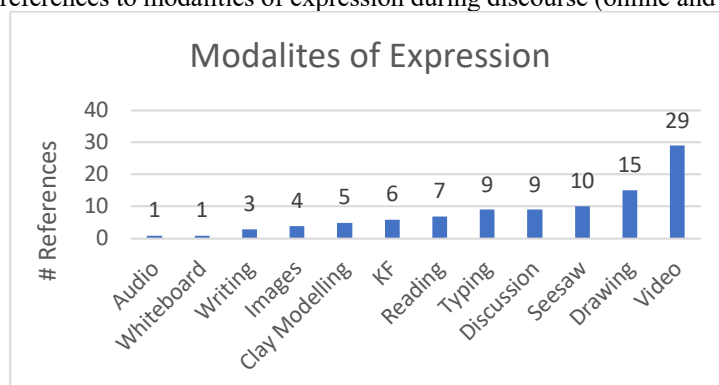
Student A: Do you know they have echo location?

Student B: Oh so they have echo location maybe you can put a color [motions to markers]

This suggests that the introduction of digital storytelling and associated practices helped engage students in a sustained creative manner in which they appeared more concerned with the act of creation rather than the reasons behind the task itself (Schmoelz, 2018).

Figure 1

Student references to modalities of expression during discourse (online and in-person)



What was surprising was the lack of references to clay modelling. Frequency alone does not give an accurate representation of student engagement with the clay modelling. Further analysis of observation data and digital story data suggests that clay modelling was a crucial component of student learning and their engagement with the content-knowledge. As an example students would have a mixture of content-knowledge related to salmon, personal narratives related to their efforts to mold the clay and imagined narratives related to the salmon. One student remarked “so it’s a pretty sad story...they’re trying to swim up...so they can get at least one glimpse of their babies” (personal communication, April 25, 2021).

Implications

This study has implications for cross-community collaborations from as close as two classrooms in the same school to two schools situated in different countries. By utilizing digital storytelling as a vehicle for learning we reduce the barrier between thought and expression. Art as a means of communicating thought gives greater agency students to investigate and determine their own learning. Personal narratives present in digital stories also help create new areas to be explored as they are further unique perspectives each student can bring to the communities quest to answer deeper and deeper questions. Lastly, by shifting focus away from more traditional forms of assessment of literacy and scientific knowledge towards authentic assessment (Newman, Marks, Gamoran, 1996) students are better prepared for life beyond school, particularly in the 21st century.

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