MULTIMEDIA – Blogs, Digital Storytelling, Flash, Podcasting: Enhancing the Knowledge Building

by

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SO – WHAT'S NEW?

So what has really changed? In the early nineties, I wrote an article[i] focused on helping students to 'construct knowledge' using multimedia. It was motivated by my concerns that students were producing visually exciting – yet fairly superficial - hypermedia documents that were, at first, getting raves from teachers[1]. The raves were usually a result of the technical competence of the students – not from the new knowledge of the content area under study. The information presented was often merely 'a tantalizing telling' of information without a great deal of higher-order effort in its transformation.

So what has really changed? The tools. Now kids are using the current tools of the day - iMovie, MovieMaker, Flash, blogging and podcasting technologies. And I hear the same accolades about their work, and perhaps rightfully so on a technical and esthetic level, but not necessarily on a 'knowledge-building' level. Students should be encouraged to 'transform' knowledge into new forms rather than to simply 'tell' about something they read – regardless of how stunning it appears or how impressed we might be with their apparent technical savvy.

This reiteration of the article is provided to help us to question the efficacy of our efforts in teaching kids to acquire 'deeper understandings' through the use of multimedia technologies.

QUESTIONS WORTH ASKING

What knowledge have the students developed in the creation of their works?

Have they merely made a linear presentation with reworded information that they acquired from the web or from books?

Have they reworked the knowledge to create new understandings for themselves?

How do we encourage novice learners to become more expert learners?

THE ROLE OF JOURNAL WRITING, COLLABORATION, AND SCAFFOLDING

[1] These were, at that time, produced with tools like HyperCard, HyperStudio, (and more recently) PowerPoint.

Journal writing, collaboration and 'in the zone' scaffolding embedded in a classroom culture focused on 'mindfulness' and 'intentionality'[ii] may be used to support these kinds of learning. Specifically, I am interested in designing and using blogs as a 'public and scaffolded journaling environment' similar to ThinkingLand[iii] or the commercially available Journal Zone[2]. Blogs can be used to assist kids as they embark on the complex tasks related to producing a multimedia-based project whether it be in Flash, a movie or a podcast. They are useful throughout the various stages of:

- planning (determining the questions, narrowing the topic, doing the research, anticipating difficulties, generating strategies, etc.)
- monitoring (evaluating their progress, modifying their goals, altering their strategies, etc.)
- reflecting (considering how they did, what they might do differently next time, what skills or knowledge might be generalized to other tasks)

At the YMCA Academy[3], we are currently beginning some developments with blogs to support such a 'thoughtful' environment. We plan to use the blogs as individual journals where kids will write their goals, thoughts, plans, frustrations, and reflections. These journals will be available to other students in the class (perhaps organized into groups). Each student will be responsible for maintaining their own journal as well as engaging in written conversation with other group members. Each student will have the responsibility to, not only write in their own journal but, also engage in a written conversation with the other students in their group. These blogging journals will have scaffolding built in to the blog's template for both the initial writings and also to encourage and support substantive conversations among the students.
I am only at the initial stages of this development, so I haven't any blogs of this type to show you right now. However, what follows is, I believe, a rather convincing argument as to why we should pursue the implementation of such blogging environments. If you agree, then I invite you to engage in such development yourself and we can share our discoveries.

Journal Writing

Journal writing supports mindful behaviour in a variety of ways. Opportunities are provided for considering one's goals, plans and actions and, as such, journal writing can play a significant role in shaping knowledge. Cappo & Osterman[iv] suggest that "as students communicate their ideas, they learn to clarify, refine, and consolidate their thinking". Larissa, for example, entered into her journal,

> *"A few days ago I started looking for information, I found out that Rebecca was also doing Prince Edward Island so I asked her if she had any information. She let me use a book called Prince Edward Island. Also I found a book on Lucy Maud Montgomery which I think will be interesting because the people take pride in her for coming out with the amazing Anne of Green Gables series. I started reading the*

[2] Journalzone.net
[3] Independent school offering small class environment for students in Grades 9 and above. **academy**.**ymca**toronto.org

introduction of the book called Prince Edward Island, it talked about the names Prince Edward Island had before it got the name it has now. I decided on some of the topics I want in my project. They are Prince Edward Island (just an introduction) Population, and Tourism. Tomorrow I would like to read through some more of my information and choose some more topics. If possible I would like to get started on my planning sheet."

A Place to Think

The very presence of a journal acts as a tool that predisposes people to think – to plan, monitor, and reflect. This helps overcome the difficulties of not even thinking about performing these tasks. Sometimes it is not that the student doesn't know how to plan, it just does not come to mind to do so. The journal, therefore, reminds students to think and gives them the opportunity.

Understanding Subject Matter Through Writing

The act of writing has been widely accepted by educators and researchers as a significant means of learning subject matter more effectively. Countryman[v] says, "Knowing mathematics is doing mathematics. We need to create situations where students can be active, creative, and responsive to the physical world. I believe that to learn mathematics, students must construct it for themselves. They can only do that by exploring, justifying, representing, discussing, using, describing, investigating, predicting - in short by being active in the world. Writing is an ideal activity for such processes." Journal writing, as a form of writing and 'thinking out loud,' seems to assist in initiating, supporting and encouraging thoughtful learning.

Thinking About Thinking

Journal writing allows for the externalization of knowledge through language. Language plays an important role in making knowledge explicit by objectifying experience. So as students engage in writing about their knowledge they are indeed exploring, stating and questioning what they know. Brown, Collins and Duguid[vi] suggest that school generally disregards the inventive heuristics that students bring to the classroom. Journal writing allows for expression and social sharing of these. Journal writing allows students to state their 'understanding' of a topic or problem replete with all the associate 'bugs'. These buggy statements are then explicit and can act as a medium for mediating new understanding in collaboration with others.

Collaboration

Journal writing, usually a personal event, may also be more public or collaborative. This collaborative form of journal writing leads to unique experiences that have qualitatively different results than individual journal writing. Students not only reflect on their own thoughts and processes, but also exchange information about both the subject content and the processes and strategies used by others. This leads to more comprehensive knowledge building and results in both better multimedia projects and increased metacognitive skills.

Central to knowledge construction is a recognition that learning is a social process. Vygotsky claimed that all higher level cognitive processes arise out of social experience. These social interactions allow for the concepts, vocabulary and processes necessary for task functioning to be made explicit. Stated somewhat differently, Perkins and Salomon[vii] maintain that "learning takes place in a social context (e.g., reciprocal teaching), whereby justifications, principles, and explanations are socially fostered, generated, and contrasted." Collaboration encourages one to consider and resolve cognitive issues in order to participate effectively. One must make sense out of one's existing knowledge and information, struggle with disparities, resolve difficulties and then state it to another.

Collaborative journal writing, therefore, provides a forum for information exchange about both the content of the multimedia reports and the processes and strategies used by others. As a result, we see greater linking of knowledge (both within the students' media projects and also across their individual projects).

The following example illustrates students planning to link their projects.

- From Kaeli -

> *"Ashley- I thought of a way that we could link projects. If you borrow my book about the nature on the Escarpment, then you could say 'if you want to learn more about the Niagara Escarpment, press here'. And I could say 'if you want to learn more about nature in general, press here'. I think it will work well."*

Collaboration may lead to insights that might not occur without the benefit of the discussions and interactions. It can be said that groups are not just a suitable way to collect the individual knowledge of their members but that they cultivate insights and solutions that would not otherwise occur. Collaboration, therefore, may lead to a 'whole' that is greater than the sum of its parts.

For example, Larissa entered this into her journal,

> *"I want to learn more about P.E.I.'s prize winning potatoes. It seems to me that everyone thinks that P.E.I.'s potatoes are definitely the best. Why? I am going to find out why P.E.I.'s potatoes grow so much better than in any other province of Canada. Later today I am going to get some more information about P.E.I. from Kim. I wonder why potatoes grow so much better in P.E.I. than any other food."*

Heather then commented,

> *"Larissa, we studied acid rain last month. Has the acid rain problem affected the way potatoes grow in PEI?"*

'In the Zone' Scaffolding

Scaffolding 'in the zone' (as in Vygotsky's zone of proximal development) can encourage students to consider their own higher level strategies and promote the active decontextualization of knowledge. It may allow the user to decenter from personal thoughts and think about other considerations. It facilitates an internal dialogue when no

other partner exists to ‘bounce ideas off’. ‘In the zone’ scaffolding can take many forms, but prompts, questions or sentence starters are common and will be available to students in the blog template as they write their entries. For example:

I want to know…
I want to learn…
I think…
My goals for this project are…
Different ways to solve this task are…

For our blog designs, the information available about the very different behaviours of novice and expert learners will form the basis for the design of these prompts. For example, novices don't typically pause and reflect on the task upon its completion. They don't ask themselves, "How well did my strategies work? What did I learn that might help me on future tasks or tasks of a different nature?" Experts, on the other hand, do. Also, experts, in advance of task, usually engage in a number of planning strategies. They identify goals and subgoals. They consider previous knowledge and how it relates to the current task. They generate a variety of solution strategies and evaluate them before embarking on any one strategy. Novices frequently don't engage in such activities. They may use powerful strategies such as trial-and-error and 'messing around', and these should be encouraged, but a novice's repertoire is limited.

Prompts will also be available to encourage and support thoughtful conversation or discussion when students are ‘replying’ to the blog entries of other students. Usually students quite naturally respond with social commentary, but often not with substantive assistance that might help their classmates to reconsider, or to think more deeply, about how they are doing in their project. For example:

I think your plans are too easy/hard, you might wish to…
I think you should…
I believe that…
Have you thought about…

In addition to the prompts for the journaling and the conversation, a list of 'connective' words will be available to students to help them to elaborate their thoughts. So if a student initially writes, "I want to learn animation", selecting a 'connective' word such as 'because', might result in further consideration of the goal perhaps resulting in subgoals. "I want to learn animation because then I will be able to demonstrate how red blood cells are produced. In fact, I will be able to use it in lots of projects."

A teacher can also enhance the use of the blogs by structuring certain activities for their use. For example, to have students focus on using knowledge as a tool, the teacher could request "For the next group meeting, I would like you to read the blog entries of your group members for the current project and print out the ones that show that a piece of old knowledge has been used in a new way." Or, "...print out the ones where the comments provide direct help with the task."

Summary

Although students have created multimedia projects in various software applications over the last twenty years or so, we are still often seeing the same types of 'information telling' projects as we saw then. I believe that students can do better and that we have software tools that can help. These 'collaborative and scaffolded journaling environments' can be relatively simple tools in their design. What one does with the tool, however, may lead to sophisticated results. Cognitive tools or technologies of the mind are only powerful with mindful engagement. "No computer technology in and of itself can be made to affect thinking. One needs to consider, both theoretically and practically, the whole social and cultural milieu in which instruction takes place."[viii]

References

[i,3] Skillen, P. ThinkingLand—Helping Students Construct Knowledge With Multimedia (The Computing Teacher, vol. 22 no. 7) p.12

[ii] Scardamalia, M. & Bereiter, C. Child as co-investigator: Helping children gain insight into their own mental processes. In S. Paris, G. Olson, & H. Stevenson (Eds.), Learning and motivation in the classroom (Hillsdale, NJ: Lawrence Erlbaum Associates, 1983) pp. 61-82.

[iv] Cappo, M. & Osterman, G. Teach students to communicate mathematically. (The Computing Teacher, Feb. 1991) p.35.

[v] Countryman, J. (1992). Writing to Learn Mathematics. Portsmouth, NH: Heinemann.

[vi] Brown, J.S., Collins, A., & Duguid, P. Situated cognition and the culture of learning. (Educational Researcher, Jan/Feb. 1989) p. 40.

[vii] Perkins, D. & Salomon, G. Teaching for transfer. (Educational Leadership, September, 1988) p.2.

[viii] Salomon, G., Perkins, D. & Globerson, T. Partners in cognition: Extending human intelligence with intelligent technologies. (Educational Researcher, April 1991) p. 3.