

SOCIAL CONSTRUCTIVIST E-LEARNING: A CASE STUDY

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The Study

- AP European History students
 - from one Canadian province
 - one U.S. state
 - AP United States History students
 - from the same Canadian province
 - another U.S. state
 - all enrolled in asynchronous, web-based courses through the a private Canadian consortium or a state-sponsored virtual high school
 - using Knowledge Forum® to complete a document-based question activity
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The Study

Advanced Placement Exam

- conducted during first two weeks of May
 - standardized exam with 3 sections
 - 80 multiple-choice questions
 - 1 document-based question
 - 2 free-response questions
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The Study

Document Based Question

Sample

Rubric

The Project

According to researchers from the Ontario Institute for Studies in Education at the University of Toronto (the original developers of CSILE), Knowledge Forum "is an online environment where learners... can talk to one another, ask questions, contribute ideas, read what other people have written, challenge ideas, build upon them, and in that way build the knowledge of the community... Knowledge Forum provides graphical Views of notes enabling people to see and adjust the structure of their discourse. Additionally, Knowledge Forum provides customizable scaffold supports encouraging participants to reflect on socio-cognitive process as they are reading or writing. Knowledge Forum also affords student-student dialogue that is not directly mediated by the teacher. This averts the problem of teacher-centered dialogue... Peers provide much of the procedural facilitation or supports for deeper understanding for each other in their database" (Lamon & Scardamalia, 2002).

The Project

- "CSILE/Knowledge Forum begins with an empty knowledge base, which is seeded with an issue or set of related issues that become the focal point of information gathering, inquiry and discussion" (Bruning *et al.*, 2004, 231).
 - This Internet-based database is utilized to promote the community of learners based upon the fact that "a successful knowledge building community largely depends on students' activities, especially on self-direction among students. Students need to make own ideas explicit and to critically argue. Confrontation with a variety of ideas and arguments enhances deep reflection and coherent explanations, due to an increase visibility of different ideas" (Lamon & Scardamalia, 2001).
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The Project

□ Knowledge Forum

<http://kforum.motion.com:8080>

The Project

- Phase 1 - students were given a week to introduce themselves and get to know each other (one week)
- Phase 2 - students were presented with nine different documents, asked to provide an analysis of at least two of the document and, as a community, ensure that all nine documents had at least two analyses (one week)
- Phase 3 - students were given the document -based question which included a short historical context and the nine documents that they had analyzed and were asked to complete their response to the document -based question (one week)
- Phase 4 - students were presented with the blank rubric and asked to evaluate at least two of their fellow students' responses using the rubric (one week)
- At the end, the instructors posted their evaluations of the students' responses and invited students to comment on the differences between the students' and the instructors' rubric, along with their impressions of the entire process.

The Methodology

- Acadia Advantage
 - acknowledgement of opinions (evidence of participation)
 - question (thoughtful query)
 - compare (similarity, analogy)
 - contrast (distinction, discriminate)
 - evaluation (judgement, value)
 - idea to example (deduction, analogy)
 - example to idea (induction, conclusion)
 - clarification or elaboration (reiterating a point, building on a point)
 - cause and effect (inference, consequence)
 - and off-topic/faulty reasoning (entry inappropriate)

Knight (1990), Hemming & MacKinnon (1998), MacKinnon & Hemming (1998), Hemming & MacKinnon (1999), Aylward & MacKinnon (1999), MacKinnon & Aylward (1999), MacKinnon & Aylward (2000), and MacKinnon (2000)

The Methodology

- two researchers coded the students contributions
- there was 56.5% agreement on the original coding
- after a discussion of the coding process, a second round of coding occurred
- there was 91.1% agreement from the second round of coding

The Data

Student	Number of messages read	Number of messages unread	Number of times messages were read	Average times each message was read
01	43	58	70	1.63
02	67	34	206	3.07
03	32	69	57	1.78
04	97	4	213	2.20
05	66	35	149	2.26
06	56	45	142	2.54
07	47	54	103	2.19
08	29	72	55	1.90
09	79	22	204	2.59

The Data

	Recall	Compare	Contrast	Cause-Effect	Idea to Example	Example to Idea	Evaluation
R1	52	21	10	41	21	27	74
R2	47	20	10	43	27	25	74
Mean	49.5	20.5	10	42	24	26	74
%	20.1%	8.3%	4.1%	17.1%	9.8%	10.6%	30.1%

Discussion

- the data illustrates that the students' contributions to the Knowledge Forum database were not all lower order text, but in many cases contained a significant amount of higher order thinking.
 - "Lower order thinking" is rated principally by the use of recall, which is mere restatement of factual information or a summary thereof, the chart grows progressively toward "higher order" analytic skills from left to right
 - there was still of good deal of recall (lower order) in the students' writing
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Discussion

- one example of this higher order thinking was the student use of the ability to edit their messages after they had been posted
 - another item that was found in the students Knowledge Forum database messages was the student concept of what was and wasn't acceptable
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Conclusions

- Chickering and Gamson (1987) put forward the concept that interaction is a key mechanism in enhancing learning.
 - This concept could be applied to this project if the students' contributions to the Knowledge Forum database were considered a form of interaction.
 - Ambron (1987) found in a survey conducted at the end of the course that "student response [was] extremely favourable; ... most mentioned the value of writing in helping them understand [the subject]" (p. 266). Also, Moore (1993) states "learning improves ... when writing assignments are complemented with instruction about how to use writing as a tool to learn [a subject]" (p. 217).
 - The ability to write their analysis of a piece of historical evidence required that students consider the actual evidence (and not just their own prior knowledge).
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Conclusions

Based upon these premises, as the students engaged in the act of writing throughout this project, they were able to gain deeper understandings of the material that was presented to them

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