

ROLE Proposal 2003

Panel Summary #1

PROPOSAL NO.: 0337162

PANEL SUMMARY:

The panel felt that the proposed project lacks the basic elements of careful design necessary for scientific research leading to meaningful conclusions. The proposal ignores the considerable research conducted on the problems of establishing collaborative learning groups and the conditions that foster such collaboration. To understand the condition under which the sum of knowledge of the group is greater than the knowledge of the individuals needs further exploration.

The problem quality is greater than the design of the study. Hypotheses are not well formed and the conditions for this kind of learning are not well specified. The literature on CSCL is not included nor is the literature on group processes.

The dependent variable is not well defined, it is noted that part of the problem is clarifying the nature of the dependent variable. Some discussion about the unit of analysis for the study should have been included. The hypotheses and the design are not well linked and no sense of taking advantage of the progression sequences through the design.

Questions are important, and the idea of developing rigorous methods to address them is good. The merit of the work is obscured by the lack of detail about the mechanisms.

Proposal did not weave a story of coherence. The proposers might be encouraged to include other investigators to support the role of groups in knowledge making.

PANEL RECOMMENDATION: Not Competitive

Review #1

PROPOSAL NO.: 0337162

INSTITUTION: Drexel University

NSF PROGRAM: RESEARCH ON LEARNING & EDUCATI

PRINCIPAL INVESTIGATOR: Stahl, Gerry

TITLE: Studying Online Collaborative Learning at the Math Forum

RATING:Fair

REVIEW:

What is the intellectual merit of the proposed activity?

Although the PI is excellent and has assembled a very good team, and although the problem of study (the relationship and difference between group and individual knowledge construction) is basically a rich one, this proposal has limited intellectual merit. The theoretical discussion is too general in my opinion. No specific problem contexts or studies are proposed, no instrumentation or specific procedures are spelled out, and the modifications of the Math Forum collaborative environment that are required for the study are only vaguely alluded to. We are to take on faith that the various parties involved will be able to assemble the study. Although some interesting hypotheses are suggested, the proposed approach cannot really test them, as the proposal itself states. There is little detail about the research and a lot of discussion of issues that are essentially irrelevant to the proposed work. The proposal seems to have been thrown together hastily.

What are the broader impacts of the proposed activity?

I do not believe this proposed work will have much impact on either basic scientific knowledge or practice.

Summary Statement

I do not recommend this proposal for funding. The theoretical statement is naive and the methods and materials are not well developed. The proposal is mostly discussion of prior work that is not tightly connected to the proposed research. The document seems to have been hastily prepared. I do find the general direction and purpose of this research to be interesting and therefore rate it fair.

Review #2

PROPOSAL NO.: 0337162

INSTITUTION: Drexel University

NSF PROGRAM: RESEARCH ON LEARNING & EDUCATI

PRINCIPAL INVESTIGATOR: Stahl, Gerry

TITLE: Studying Online Collaborative Learning at the Math Forum

RATING:Fair

REVIEW:

What is the intellectual merit of the proposed activity?

The proposed project takes advantage of an existing online community, MathForum, as a site for

a study of the potential of an online collaborative group to build knowledge that exceeds that of its individual members. The study attempts to address an important question. The team of investigators is well-versed in the issues and methods required for the study.

The proposed study has a number of strengths, including:

- * the use of Math Forum as a setting for the research. This online site is a major education destination and a good example of successful online education

the proposed study also has a number of weaknesses, including:

- * poorly formed hypotheses that do not permit scientific investigation of the phenomena of interest. Most of the hypotheses lack the explicit comparisons necessary for scientific analysis, fail to provide specific conditions or states, and confound two or more independent variables

- * an undefined dependent variable. On page 13 the investigator claims that the project will be successful if "it clarifies what it means to claim that the knowledge of a group can exceed that of its members... It is difficult to examine a hypothesis in a rigorous way when the dependent variable remains to be clarified

- * no apparent awareness of the issues surrounding the creation of collaborative groups of learners

- * no apparent awareness of the role of task design in establishing conditions for collaboration

- * the lack of any examples of group knowledge exceeding individual knowledge from past or exploratory studies

- * no protocol for the analysis of data from the activities envisioned

- * lack of a clear specification of the unit of analysis

- * lack of any indication of the sample to be selected for the study

- * lack of any indication of the sequence of activities for the set of conditions to be investigated. Six groups will be studied in year 1, and 5 groups will be studied in year 2 and year 3, but what is the sequence of activities?

What are the broader impacts of the proposed activity?

The study design is not well enough specified to result in new scientific knowledge.

There is no evidence that the study will enhance the participation of underrepresented groups, and there is a conspicuous absence of discussion of the issues surrounding the involvement of members of such groups in collaborative learning efforts.

Summary Statement

The proposed project lacks the basic elements of careful design necessary for scientific research leading to meaningful conclusions. The proposal ignores the considerable research conducted on the problems of establishing collaborative learning groups and the conditions that foster such collaboration.

Review #3

PROPOSAL NO.: 0337162

INSTITUTION: Drexel University

NSF PROGRAM: RESEARCH ON LEARNING & EDUCATI

PRINCIPAL INVESTIGATOR: Stahl, Gerry

TITLE: Studying Online Collaborative Learning at the Math Forum

RATING:Fair

REVIEW:

What is the intellectual merit of the proposed activity?

This proposal zeros in on a very important question. It is correct that those times when collaborative groups can outperform individuals in on-line settings is understudied topic. Having more good data on this question is, in all likelihood important. While the core question of this work is very important, the proposal is underspecified along several dimensions that might help a reader understand how some set of core benefits will be derived from this work. First, while it is likely that from constructed problems, situations will emerge that show collaborative settings to be superior. It would have been very helpful to see (in the proposal) some theoretically grounded conjectures about what those situations might be. Second, and perhaps more important, the proposal could be clearer about what specific practical benefits will accrue from the research and how. For example how does this work lead to way to produce sustained collaborative problems of the week?

What are the broader impacts of the proposed activity?

The work proposed here offers the opportunity to gain insight into how CSCL systems might enable groups of people to accomplish tasks that the individuals in those groups cannot accomplish alone. Designers of these systems have sought ways to study these problems for several years. Creating a test-bed of cases where group superiority in achievement through the use of CSCL systems would be a very valuable contribution to the field at-large.

Summary Statement

On the whole, this work address a very interesting issue. The Math Forum is exactly the right infrastructure to host an investigation like this. The team of assembled to do the work has

appropriate training and experience. The merit of work and its potential broad impact is obscured by a lack of detail in several aspects of the proposal.

0077095	-	Jan 5 2000	-	_____	-	ITR/EWF: Collaborative Research on Knowledge-Build
0082263	-	Feb 15 2000	-	_____	-	IT Support for Knowledge-Building in Workgroups
0082829	-	Feb 16 2000	-	_____	-	ITR/IM: Perspectives on Collaborative Knowledge-B
0083440	-	Feb 29 2000	-	_____	-	ROLE Pre-proposal: Research on Collaboration in Le
0096877	-	Aug 31 2000	-	_____	-	ROLE Preproposal: The Role of Computational Cogni
0106950	-	Dec 1 2000	-	_____	-	ROLE: The Role of Computational Cognitive Artific
0112397	-	Jan 18 2001	-	_____	-	ITR/PE (EHR): Information Technology for Distribu
0117630	-	Feb 15 2001	-	_____	-	CSS: Perspectives on Collaboration
0124010	-	May 11 2001	-	_____	-	Enhancing collaborative learning among researchers
0325447	-	Feb 12 2003	-	_____	-	IERI: Catalyzing & Nurturing Online Workgroups to
0333471	-	Apr 21 2003	-	_____	-	Group Knowledge Construction in Digital Library Co
0333493	-	Apr 21 2003	-	_____	-	Collaboration Services for the Math Forum Digital
0337162	-	May 30 2003	-	_____	-	Studying Online Collaborative Learning at the Math