Evaluate whether Uri Treisman's model of Collaborative Learning is Consistent and /or supportive of Robert Gagne's Learning Hierarchy

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Uri Treisman's model of Collaborative Learning is consistent and supportive of Robert Gagne's learning hierarchy. In order to examine this relationship we must analyze each model individually.

The Uri Triesman Model

For many years the high failure rates of African American students in the college mathematics classes was blamed on their lack of motivation, lack of educational background, and lack of family emphasis on education (Treisman, 1992). Later on however, in the early 1980's Uri Treisman, a graduate student at Berkley observed that while the African American students in the undergraduate mathematics classes at Berkley did in fact have a high failure rate they did not lack any of the characteristics mentioned above. In his effort to improve the passing rate of his students he "challenged these hypothesis and replaced the remedial approaches with an honors program that encouraged students to collaborate on challenging problems in an environment of high expectations" (Conciatore, 1990). Treisman developed a program that included mostly African –American and Latino math majors with high Sat Mathematics scores. The important goals of the program included the following elements:

1) Collaborative learning: Treisman observed that Chinese students excelled in their math courses because unlike the African American who studied alone they sought peers with whom to collaborate. The Asian students did not only study together they actually formed academic communities. These study groups enabled their members to share mathematical knowledge by asking questions, by routinely critiqueging each other' s work, and shared all information related to their common interests. Their collaboration provided them with valuable information that guided their day –to –day study. Since African American students did not interact in such manner Treisman build a community based in the study of mathematics to create a merging rather a separation of academic and social lives.
2) Challenging mathematics and high expectations: based on the high school educational experience the students considered themselves to belong in the academic "elite group". They were accustomed to being the tutors, not the ones in need of tutoring. For this reason the Workshops did not appear to be a tutoring session. The problem sets contained in the worksheets were always challenging in order to establish the workshop as a non-remedial, advanced program. The problems did not consist by procedural applications of formulas that had one right answer; they were deep, though- inspiring problems (perhaps with multiple parts) that engaged the students. In general Treisman's model built on the students' already existing strengths.
3) Faculty sponsorship: this aspect was critical to the program. "The traditional faculty response to minority students at that time was to hire someone to deal with them, create tutorial programs for them and house them in a temporary building on campus

somewhere. However, In Treisman's model the significant points were to build a community around the courses and manage the courses by faculty, not tutors.

The Robert Gagne Model

This model identified five major categories of learning: verbal information, intellectual skills, cognitive strategies, motor skills and attitudes. Each category required a different type of instruction. Gagne suggested that learning tasks for intellectual skills can be organized in a hierarchy according to complexity: stimulus recognition, response generation, procedure following, use of terminology, discriminations, concept formation, rule application, problem solving. The important significance of the hierarchy was to identify prerequisites that should be completed to facilitate learning at each level. Learning hierarchies provided a basis for the sequencing of instruction.

In addition the theory outlines nine instructional events and corresponding cognitive processes.

Instructional Event	Internal Process	Provider Actions
1. Gain attentions	Reception	Turn out lights. Call individual students by name.
2. Tell learners the objective	Expectancy	"This side of the room is going to work on poetry."
3. Stimulate recall of prior learning	Retrieval to working memory	"Remember last week when we did…"
4. Present stimulus with distinctive features	Selective perception	"Build some kind of pattern out on the table…"
5. Provide learning guidance	Semantic encoding	"Use this picture with your Geoboards."
6. Elicit performance	Learner responds	"Tell me what observation is."

7. Provide Feedback	Reinforcement	"I will not accept Tammy's paper. This is not neat…"
8. Assess performance	Retrieval and reinforcement	"I'll grade you on your math when you get done.
9. Enhance retention and transfer of learning	Retrieval and spaced review	"Finish your thank you notes At home."

Gagne argued that these events should satisfy or provide the necessary conditions for learning and serve as the basis for the designing instruction and selecting appropriate media.

In 1992 John F Flynn conducted a study to establish that Gagne's learning theory and his events of instruction described and supported learning in a cooperative learning environment. The overall finding of the study confirmed the initial proposition (Flynn, 1992).

These findings clearly suggest that the Uri Treisman model of collaborative learning should also be consistent and /or supportive of Robert Gagne's learning hierarchy. For example the first four events gaining attention and stimulus presentation, stimulate recall or prior learning and present stimulus with distinctive features were a main characteristic of the Treisman model since a priority of the workshop was to provide challenging problems for the participants. In fact as John Flynn pointed out "Two of the events, gaining attention and stimulus presentation are, generic to all instruction – never mind the method, environment or goals" (Flynn, 1992).

The remaining of the events are also present; learning guidance, elicit performance, provide feedback and assess performance was provided by both the peers and the professors. The last event, enhance retention and transfer of learning is not evident based on this limited review of the literature.

A study similar to the one conducted by Flynn should be repeated using the Treisman model of collaborative learning to establish with precision the relationship between the two models.

Reference

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