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# STUDENT PERCEPTIONS ABOUT TEAM PROJECTS AS A PEDAGOGICAL TOOL IN UPPER DIVISION UNDERGRADUATE ACCOUNTING COURSES: INDIFFERENCE CURVES

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## ABSTRACT

*Results of a survey conducted at two large accounting programs reveal a student indifference type curve with respect to the amount of time and number of team meetings required to complete team projects used as a tool in upper division undergraduate accounting courses. Up to the indifference point, more hours and more meetings are perceived by students as worthwhile and beneficial. Beyond the indifference point, more hours and more meetings are perceived as a negative.*

## BACKGROUND

In the past decade, Corporate America has embraced the team concept as a platform for building and re-engineering organizations. They also claim that teamwork is the structural norm now in organizations across the globe. Katzenbach and Smith (1993) claim that "teams will become the primary unit of performance in high-performance organizations."

Assigning students to teams to work on a major project has been heralded in business school programs as a significantly positive form of learning which introduces students to the team environment they are likely to encounter in the workplace. Hansen's (2006) summary of the literature on the use of group projects supports this contention. Hansen identified collaborative learning, experience with complex work, team projects, and improved communication, interpersonal and social skills, among the various benefits. As part of pedagogy, the authors have used various types of team involvement. One author prefers and requires all team project presentations to be videotaped by each team and shown via television on the presentation day. The authors use other traditional approaches to team presentations. In discussing the relative merits of each approach, the author requiring students to videotape presentation made the following anecdotal observations:

Students who videotaped their presentation, on average, put more effort into the research and the presentation. This arises as the students naturally are curious about how they appear on

television and review the presentation for determining how they look. Being their own critic, they generally redo and revise their work.

Videotaping forces the students to consider the presentation program in more detail, especially interactions of team members during the presentation. Live presentations often do not require as much detailed planning of the presentation.

Students tend to get more out of the other team presentations because when they make a live presentation, they are so worried about their own presentation they tend to not focus on the other teams. Likewise after presenting, they tend to be so exhausted that they have difficulty focusing attention on the other teams' presentations.

Given the above, the author requiring video presentations believed that students learned more, spent more time, and met more often than the more traditional live method of team project presentations.

The authors decided to conduct an experiment to determine if students perceived that learning is better or enhanced by the use of videotaping. The experiment was to compare student perceptions of the team experience from classes where the videotaping was required with student perceptions from classes using traditional live presentations. By comparing the student observations, a measure of the effectiveness might be established.

## LITERATURE REVIEW

Research by Shaw (2004) examined differences between intragroup diversity and student diversity-management skills. The researchers considered age, gender, and nationality of student-subjects to determine the students' satisfaction, final grade and perception of their own effectiveness. The research results indicated that the type of group the students were assigned to affected their grade performance. The position within the group also affected their grade performance.

Cross-functional teams are hyped as the most effective approach to succeeding in business projects. Rothstein (2002) used cross-functional disciplines of "business" and "design" to examine the values and behaviors of students in group projects. He then had the students develop and design a "Shopping Experience" for customers. This collaborative research resulted in perceptions changing during the duration of the project for both groups in the areas of creativity and the need for openness in discussions with colleagues.

Research by Kohli and Gruopta (2002) concentrated on student perceptions concerning team projects done while completing a systems analysis and design course. Student perceptions when working on these teams was that team members did not always do their fair share of the work on the project. But students did believe that working on teams on real-life projects was a very valuable experience and realized that users of systems need to be involved during the project duration and that feedback during a system's design project was important to the success of the project.

Ferrante, Green and Forster (2006) concentrated on student perceptions of group projects when the team leaders are incentivized. Project teams were developed in an introductory financial accounting course, and each team appointed a leader. The final project grade for each group-appointed team leader was contingent on their team's performance. They found that team members experienced fewer dysfunctional behaviors and teams with incentivized leaders had better performance.

Sergenian and Pant (1998) believe that at less competitive colleges, often students come ill-prepared to meet the academic challenges of college life. Due to socio-economic backgrounds that do not lend themselves to awareness of what is needed to succeed in the accounting profession and because students who work too many hours while in college do not take advantage of the needed socialization activities that colleges provide, many students come to the recruiting process in their senior year ill-prepared to succeed at obtaining a satisfactory first accounting job. This research involved junior accounting students who were assigned a team project to increase their knowledge of the accounting profession, the job research process, team learning, and written and oral communication skills. The pre and post tests indicated a significant increase in team work skills as a result of this career enhancing project.

## THE EXPERIMENT

### Research Design

This research experiment was developed to determine if students perceived that team project learning is better or enhanced by the use of videotaping. The design consists of comparing student perceptions of the team experience from classes where the videotaping was required with student perceptions from classes using traditional live presentations, in effect, an experimental group of students and a control group of students. A questionnaire was developed (Appendix A), using a bipolar Likert type scale to measure student perceptions about the presentation experience and the amount of learning obtained. Additional questions were used to assess demographic information.

### Hypotheses

The following null hypotheses,  $H_0$  (a-j), were developed to test the assertions of the faculty member who claimed the above mentioned benefits of requiring team presentations to be videotaped. Each sub-hypothesis corresponds to one of the claimed benefits.

$H_0$ : There is no difference between perceptions of students who videotaped their presentations from those who did not videotape their presentations among the following items:

|         |   |
|---------|---|
| Ho (a): | value of team projects.   |
| Ho (b): | team projects ability to help learn course material.                                  |
| Ho (c): | stress arising from worry about presenting distracting from what other teams present. |
| Ho (d): | exhaustion after presenting the project distracting from what other teams present.    |
| Ho (e): | learning something new from other teams.  |
| Ho (f): | amount of learning from one's own team members.                                       |
| Ho (g): | ranking of the team project with respect to other learning experiences in college.    |
| Ho (h): | relative value of time invested in team project work.                                 |
| Ho (i): | influence of team meetings in changing presentations.                                 |
| Ho (j): | quality of presentation relative to team presentations in other classes.              |

## Subjects

The experimental group consisted of 57 responses from senior accounting majors at one university in an audit course and 45 senior accounting majors in an advanced accounting course at another university as the control group. This comprised 102 usable responses.

## RESULTS

Analysis of variance using t-tests on each of the opinion questions in the questionnaire was used to determine significant differences at the .05 level. Results are identified in Table 1 and indicate the acceptance of the null hypothesis for 8 of the 10 sub-hypotheses. Hypothesis Ho (e) and Ho (f) showed that a significant difference exists between the perceived learning for students whose group projects required video tape projects and students who presented live in class.

| Survey Questions  | Videotape<br>$\eta = 57$ | Live Presentation<br>$\eta = 45$ | P =  |
|---|--------------------------|----------------------------------|------|
| Ho (i): I learned something new from the other teams                      | .7193                    | 1.000                            | .005 |
| Ho (j): I learned a lot from my team members                              | .5789                    | .8222                            | .025 |
| (Strongly agree=2, Agree=1, Disagree=-1, Neither=0, Strongly Disagree=-2) |                          |                                  |      |

The results of the study of Ho (e) and Ho (f) indicate that students agree in their perceptions with the faculty member who favors the live in-class presentations and reject the assertions of the faculty member asserting benefits from required videotaping. These students who presented live in the classroom believed that they learned something new from the other teams and from their own teammates.

Interestingly, analysis of the demographic type data, as seen in Table 2, using paired comparison analysis, revealed that students required to videotape spent significantly more hours and held more team meetings than their counterparts with live presentations. This seems obvious, in that time to plan and produce the videotape is required in addition to the research and analysis time required to complete the project.

| Survey Questions  | Videotape<br>$\eta = 57$ | Live Presentation<br>$\eta = 45$ | P =  |
|---|--------------------------|----------------------------------|------|
| Number of hours spent on project:<br>$x < 10 = 1, 10 < x < 20 = 2, 20 < x < 30 = 3, x > 30 = 4$ | 2.0877                   | 1.8000                           | .078 |
| Number of meetings:<br>none = 1, once = 2, $2 < x < 5 = 3, 5 < x < 10 = 4, x > 10 = 5$          | 3.3684                   | 3.0889                           | .000 |

Exploring the relationship of hours to the same perceptions but classified by the number of hours of activity spent in the team activity produced interesting results. Table 3 summarizes results of paired comparison data among students spending less than 10 hours on the project with those who spent 10 to 20 hours and those who spent 10 to 30 hours.

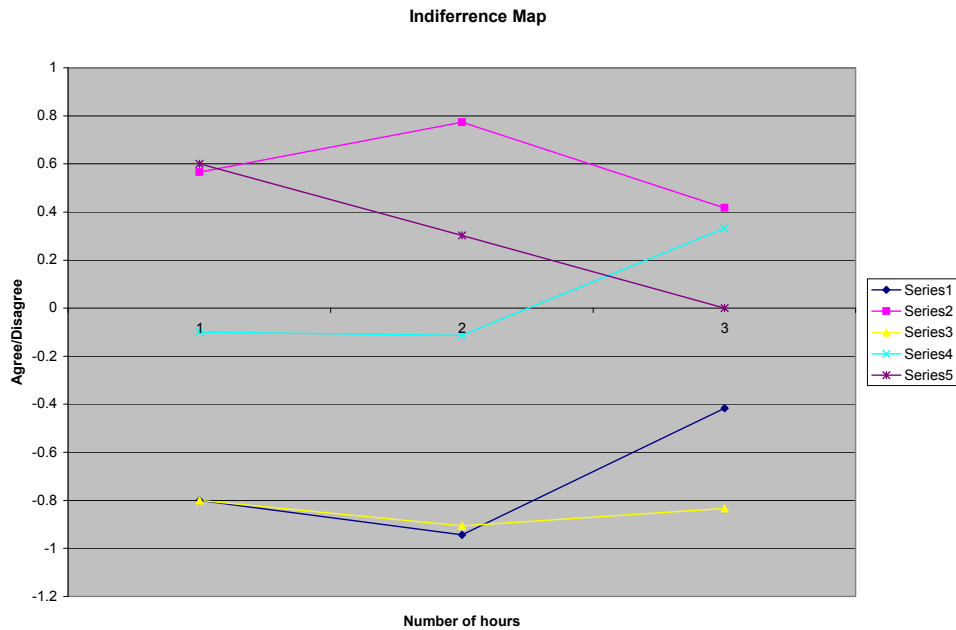
|   | A      | B      | C      | A:B   | A:C   | B:C   |
|---|--------|--------|--------|-------|-------|-------|
| Hours   | <10    | >10<20 | >20<30 | p=    | p=    | p=    |
| Ho (a): This project was a waste of time      | -.8000 | -.9434 | -.4167 | .574  | .045* | .009* |
| Ho (e): Learned a lot... other team members   | .5667  | .7736  | .4167  | .594  | .046* | .025* |
| Ho (h): Teams are a waste of time             | -.8000 | -.9059 | -.8333 | .047* | .517  | .022* |
| Ho (i): Changed presentation after rehearsing | -.1000 | -.1132 | .333   | .541  | .203  | .072* |
| Ho (j): Presentations in this class better    | .6000  | .3019  | .000   | .154  | .034* | .014* |
| Number of meetings                            | 2.9    | 3.245  | 3.833  | .086  | .035  | .083  |
| * Significant difference                      |        |        |        |       |       |       |

Significant differences exist among these groups in several perceptual dimensions as indicated with  $p < .100$  representing a significant difference at the .05 level.

Individuals spending more than 20 hours on their project were significantly more likely to say that the project was a waste of time than students spending 10 to 20 hours or students spending less than 10 hours [Ho (a)]. Students spending more than 20 hours on their project were significantly less likely to perceive that they learned more from other team members than students spending 10 to 20 or less than 10 hours on their project [Ho (e)]. Students spending less than 10 hours on their project are significantly more likely to perceive that teams are a waste of time than teams spending 10 to 20 or 20 to 30 hours on their project [Ho (h)]. Students spending 20 to 30 hours on their project were significantly more likely to have changed their presentation after rehearsing with their teams than students spending less than 10 hours on their project [Ho (i)]. Students spending 20 to 30 hours on their project were significantly more likely to perceive that class presentations were better in this class than other classes than students spending less than 10 hours or students spending 10 to 20 hours on their project [Ho (j)].

Plotting the average responses of each group of students by hours-spent on the project reveals an indifference type curve among student perceptions (see Figure 1). It appears that up to a point, the more time required to complete the project results in positive perceptions about the project. Beyond that point, the more time required for the project results in less positive perceptions about the project. This suggests an indifference curve type effect resulting from the amount of time required to complete the project.

Figure 1



Series 1 in the chart represents Ho (a), “This project was a waste of time.” Along the y-axis, positive numbers agree with the statement, while negative numbers disagree with the statement. The leftmost point on the x-axis represents less than 10 hours. The mid-point represents 10 to 20 hours, while the rightmost point represents 20 to 30 hours. Students in the 10 to 20 category were more likely to strongly disagree than the other two categories. Series 2 corresponds to Ho (e), “I learned a lot from other team members”. Series 3 corresponds to Ho (h), “Teams are a waste of time.” Series 4 represents Ho (i), “I changed my presentation after rehearsing with my team”, and Series 5 represents Ho (j), “Presentations in this class were better than presentations in other classes.” In each of the series, the trend line is kinked in the middle, except the last series, indicating an indifference point somewhere between 10 and 20 hours working on a team project among student perceptions.

### IMPLICATIONS AND CONCLUSION

The implications of this study are two-fold: a) students do not perceive any benefit from videotaping team projects and b) the amount of time required to complete the project may be subject to an indifference type curve among student perceptions of the team project experience. The first implication leads us to conclude that an instrument that measures learning needs to be developed to determine whether or not the asserted benefits of more learning from videotaping have merit. The second implication leads to several considerations about how faculty structure team projects. Projects that require extensive time commitments from students, more than twenty hours, could result in more dissatisfaction on the part of students, adverse faculty evaluations, poorer performance among students and an undeserved negative reaction to the program’s reputation.

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## APPENDIX A: QUESTIONNAIRE

### Team Presentation Questionnaire

Age: Under 21 \_\_\_\_, 21 to 26 \_\_\_\_, 27 to 32 \_\_\_\_, 33 to 40 \_\_\_\_, over 40 \_\_\_\_.

Gender: Male \_\_\_\_ Female \_\_\_\_.

Number of team presentations other than in this class:

None \_\_\_\_, One \_\_\_\_, Two \_\_\_\_, Three \_\_\_\_, More than three \_\_\_\_.

How many times did your team meet as a group to prepare for the class presentation?

None \_\_\_\_, 1 time \_\_\_\_, 2 to 5 times \_\_\_\_, 6 to 10 times \_\_\_\_, More than 10 \_\_\_\_.

How many hours did you spend on this project?

Less than 10 \_\_\_\_, 11 to 20 \_\_\_\_, 21 to 30 \_\_\_\_, More than 30 \_\_\_\_

| Statement   | Strongly Agree<br>2 | Agree<br>1 | Neither<br>0 | Disagree<br>-1 | Strongly Disagree<br>-2 |
|---|---------------------|------------|--------------|----------------|-------------------------|
| Ho (a): This project was a waste of time.   |                     |            |              |                |                         |
| Ho (b): This project really helped me understand the course material.                                       |                     |            |              |                |                         |
| Ho (c): I was so stressed about presenting that I didn't much pay attention to the other teams presenting.  |                     |            |              |                |                         |
| Ho (d): I was so exhausted after presenting that I didn't much pay attention to the other teams presenting. |                     |            |              |                |                         |
| Ho (e): I learned something new from the other teams.   |                     |            |              |                |                         |
| Ho (f): I learned a lot from my team members.   |                     |            |              |                |                         |
| Ho (g): This project was one of my best learning activities in college.                                     |                     |            |              |                |                         |
| Ho (h): Working in teams is a waste of time.  |                     |            |              |                |                         |
| Ho (i): I changed my presentation after rehearsing as a team.   |                     |            |              |                |                         |
| Ho (j): The team presentations in this class were a lot better than team presentations in other classes.    |                     |            |              |                |                         |



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