

**STUDENT EVALUATION OF AND
REACTION TO A MARKETING SIMULATION GAME
UNDER VARYING CIRCUMSTANCES**

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The purpose of this paper is to examine student opinion of certain internal and external assignments used along with a marketing simulation game and to compare the performance of students in a marketing simulation game with and without the use of these assignments. In order to accomplish these objectives, the paper has been divided into three sections. The first section discusses the types of internal and external assignments used. The second section reports on the results of a student questionnaire concerning the internal and external assignments. Finally, the last section compares student performance in the simulation competition when different combinations of internal and external assignments were used.

EXPLANATION OF ASSIGNMENTS

The assignments described in this section have been used in various combinations by the authors in marketing management and marketing problems courses along with a marketing simulation game [1]. These assignments have been classified into two categories, internal and external. A more complete explanation of these assignments than space permits here can be found in a previous work by the authors [2, pp. 54-59].

Internal Assignments

This first group of assignments is referred to as internal assignments because they are directly related to the period by period decision-making of the student teams. The three types of internal assignments are formulating the financial statements, consulting and the use of 'stimulators'.

In most marketing simulation games financial statements can either be automatically computed and returned to the teams or the teams may be required to formulate their own financial statements. We have found that it is usually wise to have the students formulate the financial statements for a few periods at the beginning of play. Formulating the financial statements aids the students in seeing the relationships between the various activity areas of the business firm and makes interpretation of the computed

statements easier when they are automatically returned. Consulting, as its name implies, refers to the

practice of providing marketing consulting services to the student participants. When the students have questions or problems they themselves cannot handle, they may visit the instructor and obtain, for a fee deducted from team income, his assistance. The availability of the instructor acting as a consultant makes it possible for those companies with a specific problem to gain professional insight with respect to solving that problem, thus becoming a more knowledgeable company and a better competitor. To this end, consulting adds a desirable touch of realism to the simulated competition.

The term 'stimulator' is used to describe various decision-making obstacles that can be utilized as tests of adaptive decision-making ability. Once the competitors are thoroughly familiar with the simulation and the nature of its various decisions, the administrator may find it beneficial to utilize a stimulator to see how well the various competitors react to a crisis situation. The stimulator is usually presented to the student teams in the form of news releases. Examples of problems presented could include railroad strikes halting shipments, new taxes, increases costs of imports, new competitors entering the market, etc. Through the use of stimulators, the ideas and personality of each teacher may be injected into the simulated competition.

External Activities

As opposed to the internal activities which directly influence the period by period performance of the student teams, the external activities only indirectly influence performance. However, the external activities are very important in enhancing the overall competition. The major types of external activities that will be discussed here are written assignments, reading assignments, case assignments and certain assignments pertinent to the specific simulation being used.

The written assignments take the form of business reports that are submitted by the student teams to the simulation administrator. Besides getting the students more involved in the simulation competition, the written assignments also serve to give the participants more experience with report writing which does not seem to be the forte of most undergraduate business students. The written reports which we have been using include team objectives reports, one-page reports and team final reports.

The team objectives report outlines the goals that the team hopes to achieve during

the simulation competition and details the strategy that the team is going to use to achieve the stated goals. The purpose of the objectives report is to force the team members to formalize their ideas and to give direction to their decision-making. The one-page reports, which are submitted along with each decision, are short reports in which the student team is asked to justify their decisions for that period. The purpose of these one-page reports is to force the students to give adequate thought to their decisions. The team final report is submitted at the end of the competition and provides an overall summary report of the team's performance over the course of the simulation. The purpose of the final report is to get the teams to examine the two or three years of competition as a whole.

The purpose of the reading assignments is to broaden the scope of the course and to aid the student in the competition. If possible, the reading assignments, to be of most benefit to the participants, should cover topics such as the setting of objectives, determining strategies, formulating decision criteria and evaluating performance. Since a simulation competition asks the participants to draw upon their knowledge, the reading assignments serve to expand the background upon which they can draw and bring additional new knowledge into the course.

Case assignments can be used to accentuate specific problems or situations. When using cases along with the simulation, it is preferable to use short cases (2-5 pages) that focus on a business problem rather than long cases requiring the students to analyze large quantities of data. The students have enough data to analyze in the simulation competition.

The simulation administrator may desire to incorporate some additional outside assignments pertinent to the particular simulation. One type of additional assignment that we have used is video-tape commercials. The students are asked to write and act out a one minute TV commercial for their products. Near the end of the competition when all of the commercials are recorded on video-tape, the commercials are played back to the class. This assignment gets the students to write a TV commercial which most of them have never done, adds to the enjoyment of the competition and contributes a further touch of realism. The video-tape commercial represents only one example of other assignments that can be incorporated into the simulated competition.

STUDENT EVALUATION OF ASSIGNMENTS

This section will describe the results of a student questionnaire concerning the

internal and external assignments described in the previous section. The questionnaire was administered to 89 students in a marketing management course who were exposed to all the internal and external assignments.

The students were asked to rate each of the assignments, to rate the lecture, case and simulation game methods of teaching and to indicate which assignments should be used in future marketing management courses along with the simulation game. The students were asked to make their ratings on a 0 to 10 scale (10 being high) and on the basis of interest and learning. In general, interest was defined as how interesting or enjoyable the activity was and learning was defined as how much the student learned from the assignment. Table 1 shows the results of the first set of ratings.

TABLE 1
STUDENT RATINGS OF INTERNAL
AND EXTERNAL ASSIGNMENTS

Assignment	Rating on Interest	Rating on Learning
Formulating financial statements	6.1	8.6
Marketing consulting	8.7	8.1
Stimulators	9.1	9.4
Team objectives report	7.4	8.4
One page reports	6.3	7.1
Final report	6.7	7.6
Reading assignments	5.3	6.3
Case assignments	7.9	8.9
Video-tape commercials	9.1	9.4

The ratings in Table 1 are the mean or average ratings on interest and learning for each of the various assignments. In all cases except one, the rating on learning was higher than the rating on interest. Generally, this can be interpreted as being encouraging as the students seem to feel that they are learning something from these assignments. All of the ratings on interest and learning are above the middle rating (5) indicating that, on the whole, the assignments were viewed positively by the students. As can be seen, the stimulators and video-tape commercials were rated the highest on both interest and learning.

The second part of the questionnaire asked the students to rate the three major teaching methods. These results are presented in Table 2.

TABLE 2
STUDENT RATING OF TEACHING METHODS

Teaching Method	Rating on Interest	Rating on Learning
Lecture	6.4	7.1
Case	8.1	8.9
Simulation	9.3	9.4

Table 2 shows that the simulation game method of teaching was rated by the students as being superior to the lecture and case methods when using our definition of interest and learning as the criteria. The use of a z test shows that the difference in the mean ratings on interest and learning between the simulation game method of teaching and the case and lecture methods are significant, in all cases, at the .01 level. This provides strong support for the use of the simulation game method of teaching.

The final section of the student questionnaire asked the students to indicate which assignments should be used along with the simulation game in future quarters. The responses to this question are shown in Table 3. As can be seen, the consulting, stimulator, objectives report and case assignment activities were recommended for continuation in future classes by over 90% of all students in the survey. The only assignments receiving less than 70% support for continuation were the team final report and the reading assignments.

TABLE 3
STUDENT OPINION REGARDING USE OF
ASSIGNMENTS IN FUTURE CLASSES

Assignment	Percentage of Students Indicating Assignment Should Be Used in Future Classes
Formulating financial statements	71%
Consulting	99%
Stimulators	97%
Team objectives report	93%
One page reports	73%
Team final report	57%
Reading assignments	59%
Case assignments	91%
Video-tape commercials	79%

STUDENT PERFORMANCE WITH AND WITHOUT ASSIGNMENTS

The purpose of this section is to discuss student performance and enjoyment during the simulation experience with and without the utilization of the wide variety of assignments discussed previously. All of the objective-quantitative measurement devices that may be used to evaluate competitive performance are readily available in the quarterly and cumulative statistics appearing in the instructor's printout in the marketing simulation game that we use [1]. This data provides the instructor with an informational base detailing the relative levels of performance within an industry. A number of qualitative factors will be utilized as a basis for discussing student performance and enjoyment regarding the use of assignments in conjunction with the simulated competition. Each qualitative factor will be discussed within a framework that includes three levels of assignment responsibility. The three levels are:

1. LIGHT - Instances where few, or no assignments were used in the competition.
2. AVERAGE - Instances where all written assignments and selected readings were included in the simulated competition along with several stimulators.
3. EXTENSIVE - Instances where all written and reading assignments and stimulators were utilized along with further external assignments ranging from the production of television commercials to the use of input from an accounting class acting as corporate auditors.

Qualitative Factor I: Level of Competition -Degree of Involvement

This first factor is perhaps the most revealing with respect to student performance and enjoyment. When few assignments are used (Level 1 - Light) the level of competition that typically develops can, at best, be described as lethargic. Individual competitive deviance from initial decision ranges is usually quite small resulting in a non-aggressive type of competition. Minimal involvement on the part of the competing students is also typical, with the competition growing flatter and the involvement less as the time span encompassed by the simulation lengthens.

When a number of meaningful assignments are included (Level 2 - Average) as part of the simulation exercise, the degree of competitive activity shows marked

improvement. Spirited decision-making coupled with strategic maneuvering becomes the rule not the exception. A high level of competitive activity, reflecting the aggressive manipulation of the decision variables, stimulates an atmosphere of intense involvement among the competitors. The degree of student involvement may be further evidenced by the simulation administrator in terms of the number of consulting requests he receives and the company disharmony problems he must solve. Corporate disharmony is most likely to occur in an environment of intense competitive activity. Individual company members begin to feel the pressure and the “infighting” begins. It is at this point that the simulation administrator is assured that the level of competition, not only among competing companies but among individual company members, has reached a desirable level.

In those situations where a full array of assignments have been utilized (Level 3 - Extensive) during the course of the simulation, extraordinary levels of competitive activity coupled with extreme student involvement may be observed. Under these circumstances, situations have arisen that include:

- a) one company bringing suit against several others for restraint of trade;
- b) dirty tricks utilized to gain access to market research at little or no cost, i.e. getting a competitive team member intoxicated in order to learn trade secrets;
- c) the utilization of complex statistical applications (computer processed at student expense) to enhance the analysis of corporate data bases;
- d) proposed mergers between competitive entities;
- e) inordinate amounts of time devoted to the creation and technical production of product- oriented television commercials;
- f) the creation of non-required, classroom advertising posters, company T-shirts, etc., in an effort to practice gamesmanship with respect to fellow competitors;
- g) open battles between a corporate management team and its auditing agency, leading to the involvement of the IRS in a hotly contested case settlement.

The general conclusion that may be drawn from the discussion of Qualitative Factor I, is that student performance and enjoyment as measured by the level of competition and the degree of involvement are greatly enhanced by the heavier uses of internal and external assignments.

Qualitative Factor II: Quality of Team Final Reports

This report, submitted by each company, is designed to force the students to review and analyze their entire simulation experience. It is through this vehicle that the administrator may gain useful information indicating how well the student companies understood the various elements of the competition. The end products of this particular assignment have been directly related to the assignment schedule utilized during the simulation as follows:

Assignment Level 1 - poor to mediocre team final reports

Assignment Level 2 - fair to excellent team final reports

Assignment Level 3 - good to excellent team final reports (most being excellent).

Qualitative Factor III: Reaction of Other Faculty Members

Another good measure of student performance and enjoyment is the informal feedback from fellow faculty members. Comments such as “What on earth are you doing in your class? I’ve never seen students so excited about anything before!” are often forthcoming. Feedback of this nature indicates that the competing students are digging into a number of sources for information and are utilizing the simulation as a basis for examining the relationships being discussed in other courses. At one time the authors were asked to convene the business faculty in order to explain what it was that we were doing to stimulate such excitement and enthusiasm.

Once again, assignment levels appear to be directly related to the content of this qualitative factor. As the assignment load becomes heavier, the students’ search for information becomes more extensive and his behavior more visible.

Qualitative Factor IV: Class Member Reaction

The final and perhaps the most rewarding factor is the direct feedback from the competing students. With respect to the assignment levels, student reactions follow the same pattern described by the first three factors. It may appear odd that student reaction would grow in a positive fashion as more assignments are added to their work load. This occurrence is, however, not very difficult to explain. As long as the assignments are

meaningful and act to make the competition more realistic, they satisfy the students' quest for acquiring relevant information.

It has been our experience, that as we increase the assignment level, not only does class attendance increase but comments such as: "This is the only class I never miss"; or "I can't wait to get here to see how we've done" become common. This last reaction is often reinforced by groups of students stopping in days ahead of schedule to see if their results are ready.

CONCLUSION

The simulation exercise itself cannot stand alone as the sole stimulant with respect to engaging and maintaining student interest and involvement. In order to develop a highly competitive environment that will act to foster student performance and enjoyment, a series of meaningful assignments must be made an integral part of the simulation competition. Our experience has shown that the careful selection and introduction of worthwhile assignments will significantly augment student performance and enjoyment of the simulated competition.

REFERENCES

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