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A COMPARISON AND EVALUATION OF SIMILAR AND DISSIMILAR GROUP SCENARIOS GENERATED USING MANUAL SIMULATION GAMES

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ABSTRACT

Future-oriented manual simulation games have proven to be useful in generating scenarios of possible future environments facing business organizations. One such game, Futuribles, has 288 playing cards with each card containing a statement of possible future events. These cards can be grouped into 19 major categories. In playing the game, each player draws seven cards from the deck and selects two events he thinks are most likely to occur during the next ten years. The Futuribles game is used as the vehicle to generate scenarios in this experiment involving two groups of students with similar and dissimilar self images and interests. Each student was given a brief self description, self- image questionnaire. The students were then divided into groups of two to three, based on similarity and dissimilarity of reported self description of attributes. The scenarios produced by the similar and dissimilar groups are compared to note significant similarities and differences. ~t is hypothesized that the similar interest groups will demonstrate much less diversity and more consistency in the choice of their primary events and cross-impacts. The dissimilar groups should exhibit more diversity and a wider range of choices in developing their scenarios. The experience is expected to reveal insights into the effect of self image upon the amount of creativity and diversity in scenarios.

GAME PROCEDURES

Future-oriented manual simulation games have proven to be useful in generating scenarios of possible future environments facing business organizations. One such game, Futuribles, has 288 playing cards containing statements of possible future events. These cards can be grouped into 19 major categories, including transportation, communication, human experience, learning work/leisure, society/culture, population, housing! settlements, production/consumption, natural resources, and government.

Players are divided into small groups and each player draws 7 cards from a dealer. Each player then selects two cards from his hand which he thinks are most likely or least likely to occur during a predetermined period of time. After discussion by the group members, each group tries to reach a consensus as to which events are most likely or least likely to occur. During the time period under consideration, many variations of the game are possible, including selection of events which a group thinks are most likely or least likely to occur in a given time period.

The Futuribles game was used as a vehicle to generate scenarios of possible future events in an experiment conducted using a class of graduate students in a general management course. Each student was given a brief self description, self-image questionnaire. The students were then divided into groups of two to three students based on similarity and dissimilarity of reported self description of personal attributes. There were four similar groups and four dissimilar groups. All of the groups played several rounds of the Futuribles game.

Each player drew a hand of seven cards for each round of play and selected two event cards representing events he or she expected to occur during the next ten years. Each team was then asked to select three events on a consensus basis which they felt were most likely to occur, during the period under consideration. Three or four plays of the game were used to develop a master list of primary events. In order to make the study more manageable, only events contained in the categories of communications, learning, human experience, work/leisure, and society/culture were utilized for the purpose of scenario generation.

SCENARIO DEVELOPMENT

An edited list of eight primary events was developed from the several rounds of play to serve as the basis for scenario generation (see Exhibit One). A list of fifteen secondary events was also produced in another round of play to facilitate the development of the scenarios (see Exhibit Two). The secondary events selected were those which were expected to have a positive influence upon the occurrence of the previously chosen primary events.

After the representative lists of primary and secondary events were passed out to the student teams, they were asked to develop several event sequences which they felt had a reasonable probability of occurring during the next ten years. Each team was also given a new product description sheet (see Appendix A) describing the possible introduction of a video learning and entertainment system consisting of a video-disk player, a microcomputer, and video disks which could be used In conjunction with a color TV set. Individual disks would contain educational programs, special events, TV games, etc. The complete set (minus TV set) was expected to sell for $500 to $600 and each individual disk would cost $10 to $15.

EXHIBIT ONE--SELECTED PRIMARY FUTURE EVENTS

1. Increasing use of computer for drill, instruction.
2. Diffusion of computer improvements--cheaper, faster, smaller.
3. Diffusion of remote access to computers--visual display, facsimile, remote printers.
4. Increasing diversity, flexibility of curriculum, educational requirements.
S. Increasing orientation toward lifelong learning.
6. More learning in settings outside school buildings.
7. Improved education for disabled learners.
8. Emergence of knowledge as most important source of authority power.

EXHIBIT TWO--SELECTED SECONDAY FUTURE EVENTS

1. Diffusion of picture phone.
2. Diffusion of cassette TV for education, business, home entertainment.
3. Diffusion of two-way communication in broadcast media.

4. Development of nationwide, time-sharing, wide access computer networks.
5. Development of education as a network of learning opportunities, resources; lass emphasis on production system of curricula, schools.
6. Increasing practice of informal education, facilitating student initiative, freedom in student inquiry.
7. More self-actualizing persons--tree, open, accepting, inner motivated.
8. More persons involved in career training programs.
9. Continued worldwide increase in population levels.
10. Increasing use of communications over transportation.
11. Increasing use of communications satellites.
12. Increasing pace, scale of long-range social planning.
13. Increasing emphasis on learning about fatigue.
14. Declining value of work itself, as personal identity source.
15. Increasing individualization of instruction with supporting resources, programs, teacher training.

EXHIBIT THREE--RANKINGS OF PRIMARY EVENTS BY SIMILAR INTEREST GROUPS

Primary Event Number	Group A	Group B	Group C	Group D
1	6,2,2	4,6,4	4,1,3	3,6,3
2	54,1	5,3,5	6,2,1	5,2,1
3	7,4,4	6,4,6	8,4,4	6,3,2
4	3,3,3	3,5,3	5,6,6	4,1,4
5	4,7,5	1,2,8	3,5,5	7,5,7
6	2,6,6	2,/,2	1,3,7	1,4,5
7	8,5,8	8,8,7	2,7,2	2,8,2
8	1,8,7	1,1,1	7,8,8	8,1,6

EXHIBIT FOUR--RANINGS OF PRINARY EVENTS BY DISSIMILAR INTEREST GROUPS

| Primary Event Number	Group A	Group B	Group C	Group D
1	2,3,1	6,6,1	1,1,4	8,4,6
2	3,2,3	7,4,2	2,2,3	2,2,1
3	4,1,4	8,8,4	4,3,5	3,1,3
4	5,5,5	2,2,5	3,8,7	6,3,5
5	6,8,6	3,3,1	7,7,1	6,5,2
6	1,4,2	1,1,8	5,6,2	5,7,7
7	8,6,7	4,5,6	8,4,8	1,8,4
8	7,7,8	5,4,3	6,5,6	7,6,8

RANKING RESULTS

After becoming familiar with the new product description sheet, each team was asked to rank the selected primary events in terms of their likely impact upon the introduction and acceptance of the new product. Each team member was requested to rank the primary events on a scale from 1 to 8, with 1 = highest impact and 8 = lowest impact. Exhibit Three contains the rankings for the similar interest teams and Exhibit Four contains the rankings for dissimilar Interest teams.

Exhibit Five summarizes the major similarities and differences in the rankings of the primary events by the different groups. This exhibit indicates the number of cases in which the event number and rank number were the same. The greatest differences in the rankings of the primary events by similar interest and dissimilar interest groups

occurred with events one, two, and five. The smallest differences in rankings occurred with events six and seven. There were modest but not significant differences in the rankings of events three, four, and eight.

EXHIBIT FIVE--SIMILAR AND DISSIMILAR GROUPS

SUBJECTS IN SIMILAR GROUPS (N=12) (4 GROUPS)
SUBJECTS IN DISSIMILAR GROUPS (N=12) (4 GROUPS)
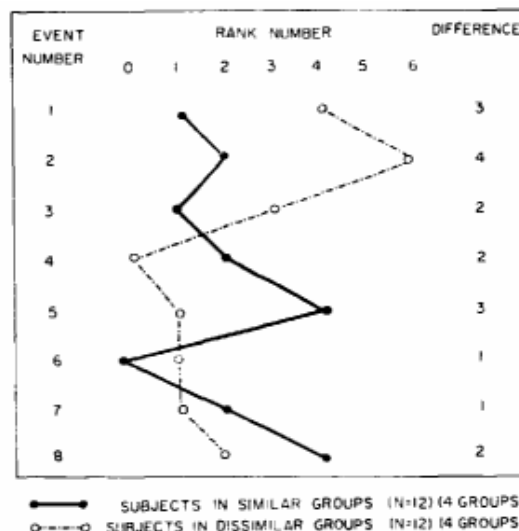
There also seemed to be some interesting differences in the ranking of events within the similar and dissimilar Interest teams. For example, in three of the four similar interest teams, two of three members gave identical rankings to event number one while only two of the four dissimilar teams had two of three members with identical rankings for event number one. For event number four, two of three members in three of four similar interest teams and three of three members of the other team gave identical rankings to event number four. In only two of the four dissimilar interest teams did at least two of three members give that event identical rankings. This pattern is also repeated in the case of event number seven where four similar interest teams had two out of three members with identical rankings while only one of four dissimilar interest teams had two of three identical rankings. In ranking event eight, one similar interest team has three identical rankings and another two while only one dissimilar interest teams has two identical rankings.

Although not conclusive, there does seem to be more consistency and less variation in the rankings of the similar interest team members. This pattern seems to be most evident in the case of primary events four and eight where there are small but not overwhelming differences in the rankings of these events by the similar and dissimilar interest groups. In the case of events, one, two, and five, there is slightly more consistency in the rankings of the dissimilar interest groups (i.e., greater agreement on rankings) than is true with the similar interest groups and greater differences in group rankings of these events by both categories of groups than is the case with other primary events. It also appears that it is easier to get agreement on ranking an event low on the primary event list (e.g., 6, 7, 8) than to reach a consensus on ranking an event high (e.g., 1, 2, 3).

After completing rankings of the three selected primary events, the eight groups were asked to select three or four events from the secondary list which they felt would have a positive Impact upon the occurrence of each

primary event. In this way, seven event sequences were generated for consideration in the final phase of the scenario generation process. These event sequences are presented in Exhibit Six. As a final step, each team was asked to select three of the seven event sequences as the basis for writing a scenario.

EXHIBIT SIX--SELECTED PRIMARY AND SECONDARY EVENTS

1. Increased use of computer for drill, instruction
   a. Diffusion of cassette TV for education, business, etc.
   b. Development of nationwide, time-shared computer networks with wide public access.
   c. Increasing practice of informal education, facilitating student initiative, freedom in inquiry.
   d. Increasing individualization of Instruction with supporting resources, programs, teacher training.
   e. Development of education as a network of learning opportunities, resources; less emphasis on schools.
   f. More persons involved in career training programs.
2. Diffusion of computer improvements--cheaper, faster, smaller
   a. Development of nationwide, time-sharing, wide access computer networks.
   b. Increasing use of communications over transportation.
   c. Increasing emphasis on learning about future.
   d. Diffusion of cassette TV, two-way communication in broadcast media.
3. Diffusion of remote access to computers--visual display, facsimile, remote printers
   a. Diffusion of picture phone, cassette TV.
   b. Increasing use of communications over transportation.
   c. Increasing use of communications satellites.
   d. Development of nationwide, time-shared computer networks with wide public access.
4. Increasing diversity, flexibility of curriculum, educational requirements
   a. Development of education as a network of learning opportunities, resources.
   b. Increasing practice of informal education.
   c. Increasing individualization of instruction.
   d. Diffusion of cassette TV, two-way communication in broadcast media.
5. Increasing orientation toward lifelong learning
   a. Increasing practice of informal education.
   b. More persons involved in career training programs.
   c. Increasing emphasis on learning about future.
   d. Diffusion of cassette TV, two-way communication.
6. More learning in settings outside school buildings
   a. Increasing practice of informal education.
   b. More persons involved in career training programs.
   c. Increasing individualization of instruction.
   d. Development of education as a network of learning opportunities.
   e. Diffusion of cassette TV, two-way communication.
   f. Increasing diversity, flexibility in curriculum, educational requirements.
   g. Development of nationwide, time-shared computer networks.
7. Emergence of knowledge as important authority power source
   a. More self-actualizing, inner-motivated persons.
   b. Increasing practice of informal education.
   c. More people involved in career training programs.
   d. Declining value of work as personal identity source.
   e. Development of nationwide, time-shared networks.

CONCLUSIONS

In developing their scenarios, three of four similar interest groups selected event sequences one, two, and six. The dissimilar interest groups selected event sequences one, four, and six as the basis for writing their scenarios. Except for differences concerning event sequences three and four, both categories of groups were remarkably similar in their selection of three most likely and relevant event sequences. In this phase of the scenario generation process, there is less diversity and more uniformity in event selection in all groups.

This study has indicated that in the initial stages of scenario generation involving rankings of primary future events, the dissimilar groups tend to be more diverse and less uniform in their rankings and evaluations. As secondary events are added to primary events and selected sequences are developed, there also tends to be less diversity and more uniformity in the rankings of both similar and dissimilar groups. This may be explained in part by the dynamics of the small group process which fosters greater agreement among group members as their experience in working together increases. The results also seem to indicate that a general convergence in au groups occurs toward four of the seven event sequences (i.e., 1, 2, 4, 6) as being those most likely to influence the acceptance and utilization of the new product, and that dissimilar interests of group members will not significantly affect this convergence.

APPENDIX ONE
NEW PRODUCT DATA SHEET

Animated Learning Associates is considering the production of computer-assisted learning packages which would utilize a color TV set, a microcomputer, and video disk player. The learning packages would be stored on 12- inch platters similar to phonograph records. Each disk would cost from $10.95 to $19.95[1] and instruction booklets and workbooks could be added at a cost of $8.00 to $12.00. Complete learning sequences for courses in science, mathematics, history, English, foreign languages could be stored on one disk and students could be exposed to a combination of video sequences, slides, audio messages, and computer coded data under computer control.

Video disks provide truer color, higher track fidelity, and less wear than video tapes. Disk players also provide speed up, slow down, and reverse action capabilities of the viewer. Each disk permits very compact, inexpensive, random access storage of data, text, or images. Disks are generally cheaper to produce than video tapes and disk systems are similar and more economical to operate than tape players. An average video disk player is expected to sell for about $595 vs. $995 for a tape player. Disks are not erasable, but are durable and excellent for prerecorded materials. They are easy to load and could be sold through present distribution channels.

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[1] Video tapes cost $50 to $75 each.