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The Use of Simulation and Gaming for Enhancing Creative Behavior

Craig T. Kosinski
Buffalo State College

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THE USE OF SIMULATION
AND GAMING FOR ENHANCING
CREATIVE BEHAVIOR
CRAIG T. KOSINSKI

THE USE OF SIMULATION AND GAMING FOR
ENHANCING CREATIVE BEHAVIOR

A Thesis

Presented to
the Faculty of the
Interdisciplinary Center for Creative Studies
State University College at Buffalo
Buffalo, New York

In Partial Fulfillment
of the Requirements for the Degree of
Master of Science

by

Craig T. Kosinski

December 1977

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THE USE OF SIMULATION AND GAMING FOR ENHANCING
CREATIVE BEHAVIOR

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Interdisciplinary Center for Creative Studies

This thesis researches the rationale of simulation and gaming as it might apply to curriculum development in the researched-based Creative Studies courses presented at the State University College at Buffalo. An attempt is made to correlate and synthesize the two areas into suggested classroom exercises.

This synthesis was done through carefully studying the instructional objectives as prepared in the Guide to Creative Action (Parnes et al, 1977), semantically interpreting the text for those objectives, creating the appropriate gaming exercises and then indicating how each exercise meets those objectives. Because of the methodical approach taken in creating these games, it seems reasonable to hypothesize that the games would achieve these prescribed instructional objectives. However, the task of testing this hypothesis remains for future experimental research beyond the scope of this study.

The products of the thesis are fifteen instructional gaming units which correlate to the objectives of the fifteen

fundamental sessions of the comprehensive instructional units for the Creative Studies curriculum. The author has developed several gaming devices which are essential to the games. Most of these playing materials are readily available. However, due to the diverse nature of Creative Studies, several devices had to be created in order to meet the specialized objectives of the curriculum. The author provides suggestions for facilitators who might use these gaming exercises within their instructional situation.

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CHAPTER I

INTRODUCTION

The Creative Studies program at the State University College at Buffalo has always used a variety of teaching methods in the facilitation of its creative problem-solving courses. The trend in the Creative Studies classroom has been to follow the sessions as prepared in the Guide to Creative Action (Parnes et al, 1977) and to follow up with supplementary exercises in the Creative Actionbook (Noller et al, 1976). The sessions and the exercises have allowed leeway for experimentation in translating these lessons into other methodologies; however for the most part, classroom experiences in Creative Studies have been characterized by a minimum of lecture and a maximum of experiential work which is largely pencil and paper oriented.

The courses in Creative Studies as presented at the State University College at Buffalo have evolved over a period of more than twenty-five years. The initial research was carried out by Meadow and Parnes (1959) at the State University of New York at Buffalo. The original program was in the form of a semester course. Parnes et al, (1977)

summarize the outcomes:

The semester program resulted in significant increments on two measures of quantity of idea-production, and on three out of the five measures of quality of the ideas produced. In general, these increases in creative productivity remained evident in another group of students who were tested from one to four years after taking the course. A significant increment on the California Psychological Inventory Dominance Scale also resulted from the program.

After many more years of research and experimentation, Parnes and Noller (1973) conducted a comprehensive longitudinal investigation known as The Creative Studies Project which began in 1969 at the State University College at Buffalo. A summary of the findings of that project is provided by the researchers (Parnes et al, 1977):

. . . (1) The course students show significant differences over comparable controls in ability to cope with real-life situational tests, including not only the production of ideas, but also their evaluation and development. (2) They show significant differences over comparable controls in applying their creative abilities in special tests given in English courses. (3) They perform significantly better than the comparable controls on the semantic and behavioral half of J. P. Guilford's Structure-of-Intellect (S-O-I) model, including three of five of his mental operations-- cognition, divergent production, and convergent production; they show no significant accomplishment over the controls in the symbolic and figural half of Guilford's model, nor in his memory or evaluation operations. (4) Most course students report large gains in their own productive, creative behavior; they rate

the program as quite helpful in their other college courses and their everyday lives. In the second year, there is a significant increase in the percentage of students who report large gains in ability to cope with problems and participate actively in discussions. (5) Test results bear out their significant year-to-year improvement over comparable controls. (6) Course students show a growing tendency (not yet attaining statistical significance) to become more productive than comparable controls in their nonacademic achievement in areas calling for creative performance. (7) The data show consistent positive movement on personality measures by course students compared with their controls, although not significant on any single scale. One coping instrument, as well as the students' own questionnaire responses, provided further significant evidence of gains in personality dimensions. (8) As to the generalizability, it was concluded that, for a group comparable to our total sample of experimentals and controls who started such a two-year program of Creative Studies--and this would very likely include a portion of the student body at most colleges and universities--the gains in the study relative to time spent in courses would be expected for those continuing with the program.

The program taught during The Creative Studies Project closely parallels the curriculum taught in the current two-year twelve-credit Creative Studies undergraduate program at the State University College at Buffalo.

The need to present these research based Creative Studies courses in different ways has been recognized in the Creative Studies program. With the inception of the graduate program in Creative Studies there are readily available talents to explore various new methods by which the Creative

Studies program might be presented. A variety of methods for expanding the flexible program schedules and adapting the course to alternative teaching situations are suggested at the beginning of Part Two in the Guide to Creative Action.

Even though the Creative Studies course materials are well organized and have been proven to be valid for what they are intended to do, there is a bit of resistance among some new instructors as well as students in accepting a few of the lessons as they are presented in the text materials. In a conversation between this researcher and the senior author of the text there was agreement that there is always much room for improvement and/or expansion of the course materials. For these reasons, this researcher seeks to explore and develop equivalent methodologies to those in current use in the Creative Studies courses; it is hypothesized that the methodology of simulation and gaming will be adaptable for such purposes.

This thesis researches the rationale of simulation and gaming as it might apply to curriculum development in the Creative Studies courses presented at the State University College at Buffalo. An attempt is made to correlate and synthesize the two areas into suggested classroom exercises. The games created in this research are modified from existing

instructional or commercially-marketed games where feasible. The method for their fabrication is presented in the chapter on Study Procedures. In all cases they are constructed to fit instructional objectives of Creative Studies while remaining consistent with game theory. The final product of the research is a suggested lexicon of games that could be used in conjunction with, or supplemental to, the current curriculum of Creative Studies.

Because they are being designed to be a translation of the instructional objectives, these games are expected to promote the proficiencies that a course in Creative Studies helps to achieve. Some of the proficiencies which the game-based methodology is expected to advance would include the abilities to sense problems, define problems, defer judgement, break away from habit-bound thinking, see new relationships, evaluate in full light of the consequences of one's actions, implement ideas, observe carefully, discover the facts, refine strange ideas into useful ones, and use a methodical approach to problem solving (Parnes et al, 1977). Highlighting the interdisciplinary nature of Creative Studies, these abilities, as noted in the text, are areas an instructor of any subject may wish to emphasize by using the programmed session-material. The games developed through this thesis may find similar application.

CHAPTER II

STUDY PROCEDURES

The games created for this thesis evolved from the hypothesis that simulation and gaming would be adaptable as methods of instruction for Creative Studies. A literature search was conducted to find out if those methods might be successful for instruction and if there is any correlation between gaming and creativity. The results of this search appear in the chapter entitled, A Review of Instructional Game Theory And Its Relation to Creativity.

As a supplement to the literature search and in order to develop more of an appreciation of areas related to more traditional gaming, the researcher informally reviewed several related sources, including: Arnold (1972), Caney (1975), Cardozo (1975), Fluegelman (1976), Lewis and Streitfeld (1970), Otto (1970), Pfeiffer and Jones (1974), Ruben and Budd (1975), Sarson (1972), and Williams (1970). The researcher also visited department stores featuring a comprehensive selection of games and gaming devices.

The author also sought literature on how others devised instructional games. Carter (1975) suggests working

from a standard theme and incorporating the desired objectives into the format of the game. Chapman (1964) describes functional operations in a game. Stadskev (1969) has developed a system of game analysis which, because of its comprehensiveness and formula structure, may be used to partially construct a game once the objectives are known. One guide to simulation and gaming formation, edited by Moriarty (1974), is the U. S. Government publication, Simulation and Gaming. This manual describes aspects of theory, design, applications and demonstration.

Having established a theoretical base, the author was challenged with correlating and synthesizing game theory and the Creative Studies curriculum into suggested classroom exercises that are based on the Creative Studies instructional objectives. In translating the instructional objectives into the objectives of a game, it was important that there be a good match of objectives since those instructional objectives had been shown to be successful in the programming of creative behavior. The Guide to Creative Action, which emanated from the Creative Studies research, spells out the instructional objectives in fifteen instructional units. The scope of this thesis then was the development of fifteen instructional

gaming units which correlate with the objectives of the fifteen fundamental sessions of the comprehensive instructional units.

This synthesis was done through carefully studying the instructional objectives, semantically interpreting the text for those objectives, creating the appropriate gaming exercise and then explaining how that exercise seemingly meets the objectives. It is beyond the scope of this thesis to validate the games created; rather it is the objective of this thesis to create the games which correlate with the Creative Studies instructional objectives. Because of the methodical approach taken in creating the games, it is hypothesized that the games would achieve the prescribed instructional objectives. Further research will be required to validate this hypothesis.

CHAPTER III

A REVIEW OF INSTRUCTIONAL GAME THEORY

AND ITS RELATION TO CREATIVITY

Boocock (1971) offers an explanation of gaming that is helpful to the purposes of this thesis:

There are three basic elements in an instructional game: gaming, simulation and role-playing. . . .

Gaming may be defined as "something enjoyable--however serious--involving competition for specified objectives and observing rules." . . .

Simulation is an operating model, reproduction or imitation of physical or social phenomena, consisting of a set of interrelated factors or variables which function in essentially the same manner as the actual (or a hypothetical) system. . . .

Role-playing consists of taking the part of one of the individuals, groups or organizations in the simulated environment.

Fink and others (1971) comment about the process of gaming:

Whether defined as natural games, games of chance or skill, educational or simulation games, the process attracts, intrigues, motivates. Why this is so can be understood at least partially by the relationship that the key structural elements of the gaming process have to the natural generative forces of life itself. Games are active and competitive; they demand immediate commitment; there is risk and excitement; there is much of the high drama of life, but yet within individual reach and control. The game if not reality, nonetheless thrusts the player into a real process, one which demands his efforts, imagination and skill.

Although a certain amount of risk is involved in a game, Siebold and Steinfatt (1974) emphasize that in a game, "there is a lack of situational immediacy . . . [and that] usually there are no behaviors to be engaged in which will produce real gains or losses in their present situation." Participants in a game have the opportunity to experiment and take risks. This becomes practice for real-life situations. Coleman (1971) makes it clear that "a game is a way of partitioning off a portion of the action from the complex stream of life activities."

Goodman (1975) points out that "gaming may provide a way for people to gain experience with the ideas to compare the outcome of their intuitive efforts with the results obtained by employing the particular method of decision making under consideration."

The opportunities which games provide us for learning seem evident. Not to be overlooked, this process of play and games is something we carry with us all through life. Berne (1964) notes that we even act out roles and play games using our real life situations as the setting and backdrop for our most serious encounters. However it has only been in recent years that educators have become serious in their attempts to use simulation and gaming as purposeful methods of learning.

There have been various research studies conducted on the effectiveness of games in the classroom. Most of the literature reviewed has been concerned with the transfer of content. Foy (1973) asserts that many students, aware of painful experiences in traditional education "accept them [games] as honest attempts to create more pleasant learning experiences."

McLuhan (1964) views games as "media of interpersonal communication," that act as "extensions, not of our private but of our social selves." He notes the form games take as being of "non-specialized participation." Taylor and Williams (1966) concur with the McLuhan philosophy and contend that because of American's usual commitments to gadgetry and machines, a media oriented programming system of creativity would have great impact.

Creative Studies is process oriented. Thiagarajan (1971) notes that games are extremely suitable for teaching process and that "such things as the procedure for problem-solving, strategy for bargaining and techniques of teaching lend themselves to the design of effective games."

The issue with games and competition seems controversial. Hulten (1974) says,

In order for games to serve as facilitators in the learning process, game success must be tied to

an incentive system which motivates the students to learn the skills necessary for winning and provide the opportunity to do so.

Ferguson (1971) warns that the winning and competition aspects of gaming are of concern because games may promote a belief that,

. . . We can have the power over a social situation to the extent that it is possible to accurately quantify and simulate the problems of . . . the international world. They [the players] may fail to realize that game theory concerns itself with means and not ends, that real social problems are much more complex and comprehensive.

However, a noticeable trend in education and society has been to delimit competition and to restore attributes of cooperation. Can the competitive aspect of gaming be compatible with sound educational objectives? Foy (1973) states:

Games take advantage of both cooperation and competition. Students realize that winning and losing are part of the game and that they will be able to play again.

Inbar and Stoll (1970) add that "games may prove to be settings for teaching psycho-sociological dimensions rather than purely cognitive and factual material." On these dimensions, they elaborate:

Games apparently mobilize intellectual skills unrelated to verbal skills. Thus, the poorest student in class is as likely as the best student to be the winner. The implication is

that games would be especially valuable for the underachiever or the nonverbal or cognitively deprived student.

Winning becomes the positive reinforcement for a lesson well learned. Hulten (1974) points out that when played in teams, as against individually, a game becomes even more effective as measured by aptitude test scores. Yet simulation experiences in themselves are not enough for learning. McKenny and Dill (1966) found that emphasis on winning may lead students to choose conservative strategies rather than experiment with new approaches.

Heighberger (1975) contends that "the simulation experience motivates the students and gets them actively thinking and acting on intellectual questions presented by the game and hopefully the real world.". Gaming thus seems to have promise for classroom use as far as motivating students, rewarding them for learning and involving them in the lesson.

Cherryholmes (1966) has reported that games were no more effective than conventional classroom media in terms of learning, retention, critical thinking or attitude change; the Cherryholmes study does point out however, that, "students report more interest in simulation activities than in more conventional classroom exercises."

Anderson (1970) found that the time expended in playing games produces an amount of learning, as reflected in test scores, equal to that from equivalent time spent in conventional classroom learning. Allen, Allen and Ross (1970) even found that math games (which teach process) resulted in greater amounts of learning in a shorter time when compared to conventional methods.

Coleman (1971) affirms:

The span of ability that can be encompassed by current teaching methods is so narrow that schools must resort to tracing and grouping. The evidence from the use of games in the classroom indicates that a much broader span of ability can be usefully encompassed by simulation games.

Heighberger (1975) concludes:

Simulation games may play an important role in undergraduate education. It is important that the strengths and weaknesses of simulation games be understood by the teacher considering their use. When teacher's objectives are in the area of motivation, stimulating an interest and developing an understanding of a process, it seems that games are an appropriate teaching device. . . . If there is not a good match between the teacher's objectives and the objectives of the game, it is better to use no games than to suffer the consequence of a mismatch. If there is a good match of objectives, the use of a well designed game can be a very worthwhile educational experience for all concerned.

CHAPTER IV

NOTES FOR FACILITATORS

This chapter has been prepared to help facilitators understand various strengths and weaknesses of the suggested classroom exercises. These exercises are intended essentially for college undergraduates with facilitators who have completed either the S.U.C.B. Creative Studies graduate program, the Creative Problem-Solving Institute's Facilitator Laboratory, or a comparable program.

Most "creativity" games which the developer found in his research could only be played by one player and were usually in the form of puzzles. The games in this thesis were developed to allow interaction between players since they were designed to be played in a classroom setting. Few games designed for more than one player, such as currently available commercial or instructional games, present an opportunity for deliberate creative behavior.

The games developed in this thesis have been designed *primarily as classroom exercises. In using them the facilitator should brief the players about the concept used in the game, allow them to play the game and then conduct a post-game*

discussion. The post-game discussion would help to achieve a greater understanding of the concepts involved.

In designing the following games, the developer was aware of the need for an incentive system that would motivate the students to play the games. In certain instances it seemed that competition in these games might lead to more creative behavior, since winning could be tied to the amount of creativity exhibited. However, it has been observed by the developer in Creative Studies classes that students will sometimes reject the notion of highly competitive win/lose games. In order to be effective in the presentation of course objectives through the use of games, the developer has structured low-competition/high-cooperation win/win gaming exercises. In low-competition games, players don't intentionally "put down" another player but rather "show up" him or her.

The developer informally pre-tested some of the games for their competitive aspects and it appeared that the players took an attitude of, "Look, see what I can do. I can be more creative than you." . . . along with the response, "Oh yeah, let's see you top this!"

An atmosphere of playfulness developed where all participants seemingly enjoyed themselves while learning many new concepts. In this atmosphere players were quite willing to

help each other. This exhibited a high degree of cooperation. The developer wanted to insure that the players had a good feeling about themselves after playing a game. By having a win/win situation a positive attitude is assured.

Possibly as an attribute of cooperation-based game several games in this thesis have no definite end; in such a case the facilitator for the class should terminate play at an appropriate time.

Those who might use the games in this thesis for a Creative Studies classroom will find that they are highly correlated to the Guide to Creative Action. As such, the terminology remains consistent with that used in the text. This is done to allow facilitators flexibility in using the games for their instructional situations.

A concept or device which this developer feels might be emphasized more in the Guide to Creative Action is the Idea-Collection System. To help enforce the beneficial use of this concept, the developer has included the Idea-Collection System as a gaming device in most games which require the recording of ideas. In this way the objective in Session Three, which introduces the system, should have more relevance. In any case, students should prepare themselves by at least having a pen or pencil available.

Gaming devices, such as the Idea-Collection System, are used throughout the games of this thesis. They are described in Appendix A. Each game contains a list of such devices. The facilitator should assemble these devices before the game begins.

In Creative Studies it seems that people work well together in small groups. When viewed collectively these games offer a balance between an individual's effort by himself or herself and the individual's effort with a team. For example, individuals game together in small groupings of no more than four or five, and likewise, when playing team games, teams would usually consist of no more than four or five players. Since all these "creativity" games are designed for interaction, different patterns are used to allow a balance between individual and group effort. The type of interaction provided is described in the "Player Organization" section for each game.

A facilitator is used in most games. The role of the facilitator is to mediate between players and to introduce the various phases that a game runs through. These phases are described for each game under the heading, "Steps of Play." Those games that don't indicate the need for a facilitator might also be played independently from the classroom situation.

CHAPTER V

SUGGESTED CLASSROOM EXERCISES

The simulations and games in this chapter have been developed from the instructional objectives of the Creative Studies curriculum. They are correlated with the fifteen fundamental sessions of the comprehensive instructional units that are found in the Guide to Creative Action.

The games are written with a format that permits continuity and uniformity for easy reference. The order of the format along with a description of each part is as follows:

Name of Game or Simulation: This is a title which identifies the exercise.

Objective: This is the gaming objective which appears as an instructional objective in the Guide to Creative Action.

Player Organization: This suggests how many people are needed to play the game and how they are organized.

Gaming Devices: This lists the materials that are needed to play. A description of Gaming Devices appears in Appendix A.

Specialized gaming devices which may themselves be found in the Appendix are indicated by an asterisk (*).

Steps of Play: This is a sequential description of how the game is played.

Rationale: This part explains how the gaming exercise is expected to achieve the prescribed instructional objective.

The games are further organized in the suggested order that they be played and are grouped according to the instructional session.

Name of Game or Simulation: The Flight of CRS 105

SESSION ONE

Objectives: (1) To recognize the importance of creativity in problem solving.

Session One is an introduction to the basic course on creativity. The session also introduces the notion of problem sensitivity. The games used to meet the objectives of this session are The Flight of CRS 105, Weedpatch, and Face-Off.

- Chair (one for each participant)
- Ball (to simulate a ball)
- Movie
- Movie projector
- Movie screen
- Star Cards (Exercise 1, from Creative Accounting)
- Paper
- Tapes
- Public address system
- Refreshments

Special Plays

1. Before participants start to arrive, set up the room. Place the environment to simulate a room. The room should be furnished to look like a room. The room should be furnished to look like a room. The room should be furnished to look like a room.

2. When participants arrive, have them sit at the tables. The room should be furnished to look like a room. The room should be furnished to look like a room. The room should be furnished to look like a room.

Name of Game or Simulation: The Flight of CRS 105

Objectives: (1) To acquaint participants with one another;
(2) To provide a brief "pretest".

Player Organization: 20 to 50 participants, 2 to 5 facilitators.

Gaming Devices:

- Chairs (enough for each participant)
- Hallway (to simulate airliner)
- Movie
- Movie projector
- Movie screen
- Name Bingo (Exercise 1, from Creative Actionbook)
- Paper
- Pencils
- Public-address system
- Refreshments

Steps of Play:

1.) Before participants start to arrive, the facilitators prepare the environment to simulate an airliner. This may include arranging seats along an aisleway, setting up for in-flight movies, readying the public-address system, fixing

refreshments and preparing any other effects which may be desired.

2.) As participants arrive they are greeted at the entrance to the airliner by the facilitators who act the roles of stewards and stewardesses. The team teachers may act as pilot and co-pilot.

3.) Participants are handed flight packets which include Name Bingo as described on pages four and five of the Creative Actionbook.

4.) An introduction is given by the pilot once the flight is assembled. A sample introduction is as follows:

"Greetings, welcome to The Flight of CRS 105. Today we will start our journey to the land of Creativity. The pilots and crew encourage you to relax and to become familiar with everyone on board. You may wander around this airliner at your leisure, however please do not leave the plane once the flight begins and please do not unbolt the seats from the fuselage."

After this address, the pilot may segue into giving the directions to Name Bingo as they appear on page five of the Creative Actionbook.

5.) As the flight gets underway, the facilitators and team teachers create as much of an atmosphere of a plane ride as

possible, using whatever props are available.

6.) As the flight continues and the Name Bingo activity is finishing, the facilitators begin to initiate the "pretest" by passing out pencils and paper. The test is administered by asking participants to list in five minutes, as many ways as they can think of for improving an airplane ride.

7.) At the end of the five minute testing period, the testing materials are collected.

8.) Within ten minutes participants are asked to implement, with the simulated environment, the idea or ideas which they felt to be best.

9.) At the end of this period, the facilitators initiate a discussion as to what problems or challenges students had in implementing their ideas.

Rationale:

The Flight of CRS 105 would develop a common bond among participants by involving them in the same situation. The first part of the objective for this session is "to acquaint participants with one another." The Flight of CRS 105 has participants relating to one another by subjecting them to a simulation experience that does not fully define itself until

after it is over. A loose and almost "party" atmosphere is introduced as participants arrive. This is conducive to making introductions and getting acquainted. The use of Name Bingo as part of this exercise also meets the basic objective.

The second objective is "to provide a brief 'pretest'." The Flight of CRS 105 has participants list in five minutes as many ways as they can think of for improving an airplane ride. This is but a modification of the pretest item used in the text; it provides a test item relevant to the context of the simulation. The developer of these games is aware that similar problems would need to be presented in order to make the testing realistic in mid- and post-semester tests.

The post-game discussion serves as an introduction to problem sensitivity which is dealt with during subsequent exercises.

Name of Game or Simulation: Weedpatch

Objectives: (1) To heighten each participant's awareness of problems and challenges in everyday living (work, personal life, education, etc.); (2) To challenge each person to make such a list of problems.

Player Organization: 2 to 5 players

Gaming Devices:

- Weedpatch Game Kit

Developer's Note:

Weedpatch uses gaming devices which are unique. The materials used in Weedpatch are described and illustrated here in order to help the reader visualize their use in the game.

- Idea Flags:



Idea Flags provide a place on which statements may be displayed. As described in the Steps of Play, these flags are full-masted. This full-mastedness indicates that when idea statements are played, no further activity may occur on

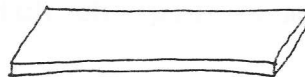
that mast. Example of construction: toothpick with paper.

- Growth Bulbs:



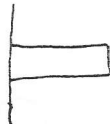
A Growth Bulb is an auxiliary base that provides a juncture between a Problem Flag and any number of Problem Flags and/or Idea Flags. Example of construction: styrofoam ball.

- Messboard:



The Messboard serves as a base into which Problem Flags may be inserted. Example of construction: cork tile.

- Problem Flags:

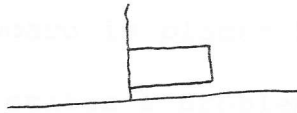


Problem Flags provide a place on which problem statements may be displayed. As described in the Steps of Play, these flags are half-masted. This half-mastedness allows variety of problem statements or idea statements to be played through the addition of a Growth Bulb. Example of construction: toothpick with paper.

- Quota-Cards:

The use of these cards determines how many moves a player may make in a turn. Any improvisation which could determine the type of Flag and the number of times it may be played is welcome and permitted. The description of Quota-Cards appears in the section about the Card Game Kit in Appendix A.

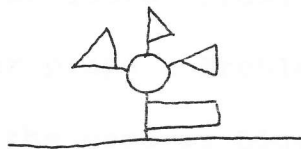
Throughout the game these pieces are related to each other in various ways. The following diagrams illustrate the ways in which the pieces might be used in the game:



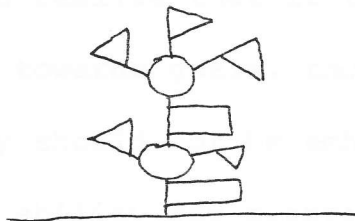
Problem Flag placed in Messboard.



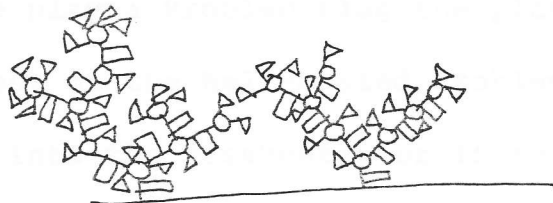
Growth Bulb placed on Problem Flag.



Idea Flags placed in a Growth Bulb.



Problem Flag played from a Growth Bulb with Idea Flags also displayed.



Elaborate display of Weedpatch.

Steps of Play:

- 1.) The Messboard is placed before the players.
- 2.) A player states a problem. He or she writes this statement on a Problem Flag and inserts the flag into the Messboard, topping it off with a Growth Bulb. Players may want to refer to the checklist on page seven of the Creative Actionbook to spur the production of problem statements.
- 3.) After an initial problem is stated, players begin their turns by drawing Quota-Cards. If the number on the card is red, the player plays a Problem Flag during that turn. If the number on the card is blue, the player plays an Idea Flag. The numeral on the card determines how many of that type of flag will be played. Quota-Cards provide short range goals.

Players should realize that if they are new to this notion of stretching towards goals, though they may be frustrated at first, they should not be embarrassed about not making a goal. This ability for quantitative thinking is a skill which becomes enhanced through a course in Creative Studies.

4.) To play a Problem Flag the player writes a problem statement on the half-masted Problem Flag. The flag is then placed into the Messboard; or if the problem statement used on the flag is a sub-problem or a broadened problem of another problem statement already played, the flag is placed into the Growth Bulb of that Problem Flag. Each Problem Flag is topped with a Growth Bulb after it is played. Once again, players may want to refer to the checklist on page seven of the Creative Actionbook to help spur the production of problem statements.

5.) To play an Idea Flag the player writes an idea that may be a lead to a solution for one of the problem statements already played, onto a full-masted Idea Flag. The player then places the flag into the Growth Bulb of the respective Problem Flag.

6.) Play alternates between participants.

Rationale:

The impetus for this game came from the quotation by

Bert Decker on page 318 of the Guide to Creative Action, "Problems are like weeds; the more you ignore them, the faster they grow!" In this game participants are urged to become sensitive to their problems and not to ignore them. A sculpture created during the course of the game grows through the generation of problem and idea statements. There is no definitive end to Weedpatch. The sculpture that began in one game may continue to grow into the next game. In their own interest, players may wish to systematically dissect the sculpture to see how their problems grew.

Weedpatch is designed to meet the objectives by making the generation of a list of problems and ideas part of the game. It helps to heighten awareness to problems and challenges in everyday living by referring to the checklist in the Creative Actionbook and by allowing the interaction of players to share problems and challenges which become additional input into each one's realm of experience. It is felt by the developer that by permitting players to play their ideas as well as their problems, they are given a chance to observe that ideas occur as a response to a problem or challenge.

Though it would be possible to make this game highly competitive, the developer feels that a non-competitive atmosphere for this stage of the semester course would facilitate a greater openness among participants. Establishing this freedom of thinking is important in Creative Studies and for the success of subsequent games.

Name of Game or Simulation: Face-Off

Objective: To introduce the texts.

Player Organization: 2 teams of 4 to 10 players each, facilitator.

Gaming Devices:

- Flipchart*
- Quota-Cards*

Steps of Play:

- 1.) The class is instructed to get the texts a couple of days before class and to peruse them. They should be keeping in mind what they like or don't like about the texts.
- 2.) In the game situation, two teams play against each other in a TV Quiz Show format. The facilitator, acting as the Master of Ceremonies, draws a Quota-Card. If the number on the card is red, he or she asks the team for that number of thing they like about the texts. If the number on the card is blue, he or she asks the team for that number of things they don't like about the texts.
- 3.) Play alternates between teams as each Quota-Card is drawn. The facilitator records the responses on each team's section of the flipchart.

Answers may not duplicate each other. Players on a team may answer in either a fixed or random order.

4.) The winning team is that team which gets more than either twenty-five positive or twenty-five negative responses.

Rationale:

A gaming atmosphere is established by mocking a familiar form of TV Quiz Shows. If the class size is too large for everyone to play at once, members of the class may be the audience as others serve on the teams.

This game meets the objective by providing students an opportunity to express something they found out about their textbooks. In providing this opportunity, the game allows them to share what they've discovered and in doing so they introduce the texts.

SESSION TWO

In Session Two students are encouraged to become more sensitive to problems and challenges. To aid in this objective, Session Two is facilitated with The Problem-Empathy Sculpture Game.

Name of Game or Simulation: The Problem-Empathy Sculpture Game

Objective: To provide practice in techniques for reaching the essence of a problem-statement and for wording it for optimum idea stimulation.

Player Organization: Group of 15 to 20 players, facilitator.

Gaming Devices:

- Challenge-Cards*
- Flipchart*

Steps of Play:

- 1.) The facilitator draws a card from the deck of Challenge-Cards and the question is posed to the group, "Why is Challenge-Card Heading a problem?"
- 2.) Players respond in the form, "It is a problem because (fill in the blank) ." They mark their answers on the flipchart.
- 3.) After marking their answers, they form a living non-rigid sculpture by pantomiming some facet of the challenge in line with their responses to the problem statement.

For example: if the Challenge-Card said, "airports," and the player made a problem statement like, "Airports are

a problem because the ticket counters are so far away from the loading gate;" the player might then pantomime a consequence of the ticket counters being far from the loading gates. The sculpture is done non-verbally and the participants may adapt to previous entries to the sculpture.

4.) Once the sculpture is built, the facilitator asks the players to further define the problem from their perspectives within the sculpture by using the "In What Ways Might I" statement. Players leave the sculpture one by one and write their responses on the flipchart.

5.) Players may then take up a new position in the sculpture to gain another perspective.

6.) After cycling through the sculpture a couple of times, the facilitator may start the "Why" line of questioning. Players may pick a previous "IWWMI" statement and apply his or her response to the "Why".

7.) Play could continue endlessly so the facilitator should remain aware of any time restrictions. The sculpture may be ended by prohibiting any new replacement.

Rationale:

The Problem-Empathy Sculpture Game uses the concept of the living sculpture to give empathy towards the problem.

A living sculpture is a scenario created by the positioning of human bodies in relation to one another.

At times in a living sculpture a person may want to take up a different position but finds himself or herself locked into his or her original entry. In this game players may take up different positions, but to do so they must re-define the problem. Hopefully, since it's fun to change position, more redefining of the problem would occur.

In meeting the objective for Session Two, this game uses three techniques of wording a problem statement. The Problem-Empathy Sculpture Game involves the player in the problem area and requires the player to use imagination in order to respond with problem statements. The simulation of the problem environment helps to create understanding of possible problem statements. The facilitator interacts with each player at the flipchart in wording it for optimum idea stimulation.

SESSION THREE

Through Session Three students learn the philosophy of "deferred judgement", which is an ability to accept delay and to live with ambiguity while gathering data needed to make a judgement. The session also studies what is meant by the term "creativity" and how the influence of habit on our behavior can act as a deterrent to our creativity. The use of an Idea-Collection System is introduced along with the concept of incubation. Session Three uses four games, they are Future-Janus, Arbitration, Slow Chess, and Habitat.

Name of Game or Simulation: Future-Janus

Objectives:

Part One: To provide preliminary exercises for later demonstration of the efficacy of deferred judgement by individuals and by groups.

Part Two: To introduce the concept of deferred judgement by individuals and by groups.

Player Organization: 10 to 15 players, facilitator.

Gaming Devices:

- Flipchart*
- Simulated courtroom

Developer's Note:

Future-Janus is played with two simulations, Janus I and Janus II. Janus I simulates a condition of negativism and hopelessness, it is a state of impossibility and apathy. Janus II imitates a positive mental attitude with a belief that most anything is possible, and that if it seems impossible, a modification can make it work--all ideas are in some way good. One simulation presents an outlook of quick judgement (pre-judgement, or prejudice); the other presents a case for deferred judgement. As such Janus I is a

preliminary exercise and Janus II is a post-exercise in the introduction of the concept of deferred judgement.

The notion of this simulation is based upon Janus, a character from Roman mythology. He is the guardian of gates and since every door looks both ways, he is often represented as having two opposing faces. Future-Janus is a simulation of a possible future situation which is being observed from two dichotomous viewpoints, quick judgement and deferred judgement.

In this future situation, courts exist to judge ideas and grant permission rather than to judge crimes and pass sentence. In both simulations, Janus I and Janus II, the court consists of a perpetrator, a bequestor, counselors, opinionators and elaborators. Their roles are as follows:

The perpetrator is the one who suggests the idea.

The bequestor grants permission for or against the idea.

The counselors are two lawyer-types who supply legal information.

Opinionators are people who bear witness to an idea as to whether or not it would be good or bad.

The elaborators are a four person task-force which helps to develop the idea.

To be effective in meeting the instructional objectives, the developer recommends that these simulations be played one right after the other within the classroom situation.

Steps of Play: Part One, Janus I

- 1.) Before court is in session, the group brainstorms for five minutes on things they would like to do. Responses are recorded on the flipchart.
- 2.) Players assume the various courtroom roles as described in the Developer's Note about this simulation.
- 3.) The perpetrator chooses from the list an idea that seems reasonable to do and goes before the court to ask permission to implement that idea.
- 4.) The bequestor, counselors, opinionators and elaborators purposefully scoff the notion of the idea. These players should make a conscious and deliberate effort to be apathetic and quick to pass judgement. The emphasis of the court proceedings should be to belittle the perpetrator for having his or her idea and to bring out the negative consequences of that idea.
- 5.) After all the important evidence is presented, the elaborators say that it is impossible to do anything with that idea and the bequestor denies permission for its implementation. The drama might be concluded by dragging the perpetrator

away as being a menace to society for having ideas.

6.) The post-game discussion should make the point that as individuals we sometimes close ourselves off to even thinking about the possibilities of an idea. It should also be brought out that if we let our negativism overshadow our thoughts, almost any idea, regardless how reasonable it may appear, would seem impossible to do anything about. This simulation is, of course, an exaggeration; along with the post-game discussion it prepares the players for using the concept of deferred judgement in the next game, Janus II.

Steps of Play: Part Two, Janus II

1.) In preparation for this game, the developer recommends that the facilitator and the players read, "Sociodrama as a Creative Problem-Solving Approach to Studying the Future," by Dr. E. Paul Torrance. This article appears on pages 183 through 188 of the Guide to Creative Action. It seems that sociodrama would help to insure more diverse viewpoints and bring out the value of using deferred judgement before a decision is made.

2.) Before court is in session, the group brainstorms for five minutes on silly things they wouldn't dream of doing.

Responses are recorded on the flipchart.

- 3.) Players assume the various courtroom roles as described in the Developer's Note about this simulation.
- 4.) The perpetrator chooses from the list an idea that seems to be the most preposterous and goes before the court to ask permission to implement that idea.
- 5.) The bequestor needs to hear more information about the idea before he or she would grant permission. The counselors, opinionators and elaborators help to provide that information.
- 6.) The facilitator, as the director, should see that the direction that the drama takes is in deferring judgement. To help achieve this the facilitator may informally introduce the five-step creative problem-solving process. The play should always accentuate the positive, even at the remotest extreme.
- 7.) By the end of the simulation the players develop a modification of the original idea for which it would seem acceptable for the bequestor to grant permission.
- 8.) The post-game discussion for Janus II picks up where the discussion of Janus I left off. The discussion should be directed at pointing out the efficacy and potential of deferred judgement in both individual and group usage.

Rationale:

By associating the term "deferred judgement" with simulations that parallel the worlds of justice and judicial proceedings, an emphatic point is made that we do eventually make a judgement and that this suspension of judgement is only to allow the gathering of more data.

The game Janus I provides a preliminary exercise that allows players to role-play an exaggeration of "closed-minded" thinking. It is this exaggeration which helps to create the contrast that introduces the concept of deferred judgement in the post-exercise game, Janus II.

Through these games players are also able to contrast their individual styles of thinking. In being part of these simulations, a player is able to observe the potential of deferred judgement in group usage. Janus I dramatizes how an idea is put down and how this might tend to happen to some of our ideas. Janus II exaggerates that if one defers his or her immediate reaction, many new thoughts and ideas are likely to occur and that deferring judgements will likely put an idea into a different perspective.

Name of Game or Simulation: Arbitration

Objective: To introduce a definition of creativity that involves originality and relevance of the creator.

Player Organization: Group of 8, facilitator.

Gaming Devices:

- 8 Chairs
- Flipchart*
- Long table

Steps of Play:

- 1.) The heading, "Creativity is...", is put on the top of the flipchart.
- 2.) Each member of the group completes the phrase with his or her definition of creativity. The players put their initials by their definition.
- 3.) After all the definitions are up, the facilitator notes that there are differences in opinion as to what creativity is. The facilitator tells the group that they will arbitrate with each other in order to define creativity in relevant terms that involve their originality so that in the final outcome, the group definition will have importance and meaning for each person.

- 4.) To arbitrate, the group divides into four pairs (A, B, C and D). Each pair then works to build a concise definition that does not sacrifice the essence of each one's original definition. Player may barter (and sometimes bicker) back and forth to achieve this definition.
- 5.) Upon concensus, each pair then squares off with another pair and repeats the process in step 4 (AxB, CxD).
- 6.) Upon concensus each foursome meets the other and the process continues (AB x CD).
- 7.) Arbitration ends when each group of eight has a definition of "creativity" which satisfies all the members of that group.
- 8.) The facilitator initiates a post-game discussion to compare the definitions which came from the gaming situation with the definition by the authors of the text.

Rationale:

Arbitration is a game which allows players to explore their values in relation to the definition of a term. In this case the term is "creativity". When a group concensus is reached, the game is over. This signifies that each member is satisfied with the definition that they, as a group, have developed.

By negotiating a definition, the definition seems to become relevant to the whole group. By combining ideas in the negotiating, the definition becomes original to those creating it.

During the post-game discussion, the facilitator compares the gamed definitions with the text definition of creativity involving originality and relevance to the creator; the facilitator brings out that each group developed a definition of creativity which was actually original and relevant to itself. In this way the text's definition of creativity was followed by the group in their own defining of creativity.

Name of Game or Simulation: Slow Chess

Objective: To introduce the idea of incubation and the notion of keeping an idea system.

Player Organization: 2 players per game.

Gaming Devices:

- Chess Set
- Idea-Collection System*

Developer's Note:

In order to make Slow Chess fair and interesting, players should be at a similiar level of skill.

Steps of Play:

- 1.) A chessboard is set up and the first ten rounds of play are moved.
- 2.) Each player diagrams the game thus far in his or her Idea-Collection System. Play is suspended for an agreed amount of time (such as an hour, a day, a week, a month, etc.) for the purpose of recording ideas about possible moves and for incubation.
- 3.) At the end of this time players reconvene and set up the board to the point at which play was suspended. Three more rounds are played.

- 4.) Step 2 is repeated.
- 5.) Step 3 is repeated.
- 6.) This process continues until a checkmate or draw.

Rationale:

A game such as Chess, which is highly dependent upon skill and strategy rather than chance, is used. The game is played by conventional rules and is purposely drawn out so that players may record ideas in their Idea-Collection Systems and through incubation determine how they might play their next moves.

It isn't necessary to use Chess per se. Any game which provides for thinking strategy may be used. The major process in this game is letting a period of time elapse so that incubation may occur. The concept on the idea system is interjected by having the players keep a journal on their moves. In a similar manner, players who are involved with playing other games developed in this thesis may be encouraged to record ideas that result during or via incubation after any of these games.

Name of Game or Simulation: Habitat

Objective: To dramatize, by exercises, the effects of habit on creativity, and the value of breaking the habit response in thinking.

Player Organization: 15 to 20 players, facilitator.

Gaming Devices:

- Imaga-Cards*
- Index cards
- Paper (legal-pad size)

Steps of Play:

- 1.) Each player is given fifteen to twenty index cards and a sheet of legal pad paper. The number of index cards a player receives correlates to the number of people playing.
- 2.) The facilitator picks out an Imaga-Card and asks the group to give ten uses for the item shown on that card.
- 3.) Each member of the group responds by writing his or her responses on an index card. The name of each "test" item should appear on each respective index card.
- 4.) For each Imaga-Card played, the index cards are collected and given to a different member of the group.
- 5.) This sequence is repeated until a "test" item has been provided for each member of the group.

- 6.) Players tally the responses of the index cards on their sheets of legal-pad paper. Responses are marked from "most habitual" to "most uncommon".
- 7.) Upon completion of the compilation, each player reads aloud the results that he or she tabulated.
- 8.) After the results are presented the facilitator conducts a post-game discussion and brings out that habit may be one of the reasons that some of the responses were similar to each other. Another point to be brought out is that by allowing ourselves to stretch our thinking we can come up with more creative and uncommon responses.

Rationale:

This game works on the assumption that people think alike and in habitual patterns. Habitat provides a variety of "test" items to which players may respond with both habitual and uncommon responses. By establishing a goal of ten uses for an item a player is given a reasonable challenge. The ten responses also allow for easy handling in the tabulations. A dramatization is made each time the results are read as the habitual responses will occur in larger numbers and the more creative ideas will appear in the uncommon responses. It becomes evident by this game that if we allow

ourselves to think beyond the surface of our thoughts,
we have a lot to gain.

SESSION FOUR

Session Four deals with an ability that seems to be at the heart of creativity, and this is the ability to force relationships. By this method a person takes two or more objects or situations and contrives a relevant and meaningful synthesis. Creativity comes into play when one is able to do this with items that are not usually related. Two games which meet the objectives of this session are The Game of Ahha! and In What Ways Might I.

Name of Game or Simulation: The Game of Ahha!

Objectives: (1) To provide a variety of exercises to increase participants' ability to force relationships between unrelated things; (2) To provide practice in making the new relationships relevant.

Player Organization: 2 to 6 players.

Gaming Devices:

- Idea-Collection System*
- Imaga-Cards*
- Quota-Cards*

Steps of Play:

- 1.) The decks of Imaga-Cards and Quota-Cards are placed next to each other in the center of the playing area.
- 2.) A player draws a Quota-Card and then draws that number of Imaga-Cards.
- 3.) The player has forty-five seconds to describe new inventions that might evolve from those items used in a forced relationship. If only one Imaga-Card is called for, the player gives uses for which the item is not normally used.
- 4.) Responses are recorded in the Idea-Collection System.
- 5.) Play continues to the next player.

Rationale:

The Game of Ahha! is a translation of Creative Action-book Exercises 25 and 28 into a gaming format. It uses Imaga-Cards which are basically an expansion of the list of items from Exercise 25.

Relating diverse items to achieve significant ends occurs in the process of inventing; this type of association has also been known as forced relationship. The use of Imaga-Cards in this game provides a stimulus of random items. The wide variety of unrelatedness and randomness provides the participant with a variety of exercises. The game also provides an awareness of how other people are able to see an unusual relationship.

This exercise calls for the means being translated into a relevant end. The next calls for a relevant end demanding original means. In each gaming situation the developer feels that a structured competitive atmosphere is not necessary for the game to be successful. From past experiences in playing these games the developer has noticed that a trend of one-up-man-ship occurs which keeps the game alive.

Name of Game or Simulation: In What Ways Might I

Objectives: (1) To provide a variety of exercises to increase participants' ability to force relationships between seemingly unrelated things; (2) To provide practice in making the new relationships relevant.

Player Organization: 2 to 6 players.

Gaming Devices:

- Challenge-Cards*
- Idea-Collection System*
- Imaga-Cards*

Steps of Play:

- 1.) Each player is dealt five Imaga-Cards.
- 2.) To begin his or her turn a player draws a Challenge-Card.
- 3.) Using up to all five Imaga-Cards in his or her hand, the player verbalizes a forced relationship as to ways he or she might use those items to overcome a challenge suggested by the Challenge-Card.
- 4.) To structure the question for problem solving, players are encouraged to use the form, "In what ways might I use (items from Imaga-Cards) to overcome or solve (challenge

suggested by the Challenge-Card)?" (The Challenge-Cards provide only a "Mess." It is up to each player to structure a relevant challenge within that "Mess.")

5.) After a player comes up with a solution, the used Image-Cards are discarded and the player draws from the deck for replacements.

6.) Responses are recorded in the Idea-Collection System.

7.) Play continues to the next person.

Rationale:

Further exercise is provided in making forced relationships, but also at making these associations relevant. In What Ways Might I interfaces random items with random situations. The game translates Creative Actionbook Exercise 27 into a gaming format.

SESSION FIVE

Sooner or later we have to decide which of those far-flung ideas is going to help us solve the perplexing problem. Session Five is on evaluation. Though it is of a serious nature, evaluation can become more effective with creative formulation and processing of the criteria. To meet the objectives of this session the game of The One and Only is used.

Name of Game or Simulation: The One and Only

Objectives: (1) To assure understanding of the term "criterion"; (2) To provide practice in listing criteria; (3) To provide exercises illustrating the value of deferring judgement in criteria-listing; (4) To provide an exercise in using a matrix for objective evaluation and implementation of ideas.

Player Organization: Teams of 4 or 5 players each, facilitator.

Gaming Devices:

- Flipchart*
- Matrix Evaluation Form (page 41 of Creative Actionbook)
- Pedestal
- Trio of different objects in the same category for each team (For example, three different coffee cups, three different garbage cans, three different chairs, three different lamps, etc.)

Steps of Play:

- 1.) The facilitator gives the total group a flipchart demonstration of how the Matrix Evaluation Form on page 41 of the Creative Actionbook is used.
- 2.) Group divides into teams of four or five players each.

3.) Each team is given their trio of objects within the same category, along with a Matrix Evaluation Form.

4.) Each team is given its charge: As experts of quality, each team has been commissioned by the International Archives Foundation to determine the "State of the Art" within the grouping of objects that has been given to them.

"State of the Art" means the ultimate specimen of quality within a category. For example, the Porsche Targa is considered to be the "State of the Art" for sport touring cars.

5.) Each team brainstorms criteria for five minutes, using deferred judgement, as to what will determine quality for their grouping of objects. For example, if determining criteria for coffee cups, some criteria might be: to what extent is the handle functional, does the cup leak, will it break easily, does coffee taste good from it, is it easily placed aside for storage, does the rim allow for easy drinkability, etc. The facilitator might want to set a goal of fifty or seventy-five criteria for each team to list.

6.) Teams select the criteria which they would then use in their judgements of quality. When these criteria are determined, they are entered into the Matrix Evaluation Form.

Teams should note where in the list the selected criteria came from. The facilitator may bring out the value of deferred judgement if some of these criteria have occurred later in the list.

- 7.) Teams perform their commissioned duties of determining the "State of the Art" for their assigned category. In this step, the teams use the criteria they have established to measure the items in their grouping. It might be helpful to suggest that they role-play corporate executives making a multi-million dollar decision.
- 8.) Once it is determined which object is the "State of the Art", a dedication speech about that object is prepared. The speech should point out why that object was selected.
- 9.) The groups are reassembled and a spokesperson for each team presents the dedication speech in an atmosphere that should represent an awards banquet. During the speech, the object of dedication is put on a pedestal in plain view of the audience.
- 10.) The facilitator conducts a post-game discussion.

Rationale:

During The One and Only, team members act as experts of quality to determine the "State of the Art" in different

categories of objects. The objectives of Session Five are presented and reinforced in various ways with this simulation.

The understanding of the term criterion is encouraged by having the teams work with the term "quality", which is basic to most decisions about evaluation. This objective receives further reinforcement through the dedication speeches towards the end of the simulation.

The brainstorming session provides practice in listing criteria. The value of deferred judgement is brought out by demonstrating that some valuable criteria occurred later in the lists.

The matrix is used for evaluating the objects as part of the simulation. Implementation is brought out through the dedication speeches for "The State of the Art".

Name of Game or Simulation: The Adventure of Super Plan

SESSION SIX

Objective: To provide exercises in ideation and problem solving.

Alex Osborn, a pioneer in education for creativity, once said, "A fair idea put to use is better than a good idea kept on the polishing wheel." In Session Six the emphasis is on making those gems-called-ideas happen. The game used for the implementation phase of the creative problem-solving process is The Adventure of Super Plan.

- idea-generation system
- marker pieces (buttons, coins, pebbles, etc.)
- water-cards

Steps of Play:

1. Each player selects an idea that he or she would like to implement. The ideas need not be revealed.

2. Water-cards are shuffled and laid out face-up on a table, one area to form the playing board. The cards may be laid out in any pattern that the players may desire: for example, it may be a square, a linear sequence or a zig-zag pattern.

3. Players start the game by placing their marker pieces on the "START" card. In some fashion they determine who goes first.

Name of Game or Simulation: The Adventure of Super Plan

Objective: To provide exercises in discovering and meeting challenges that might arise in implementing and gaining acceptance for ideas.

Player Organization: 2 players.

Games Devices:

- Adventure-Cards*
- Idea-Collection System*
- Marker pieces (buttons, coins, pebbles, etc.)
- Quota-Cards*

Steps of Play:

- 1.) Each player selects an idea that he or she would like to implement. The ideas need not be revealed.
- 2.) Adventure-Cards are shuffled and laid out face-up on the playing area to form the playing board. The cards may be laid out in any pattern that the players may desire; for example, it may be a square, a lineal sequence or a maze-like pattern.
- 3.) Players start the game by placing their marker pieces on the "START" card. In some fashion they determine who goes first.

- 4.) Quota-Cards are drawn to determine how many spaces the marker pieces are moved. There is no restriction as to forward or backward motion.
- 5.) As a player lands on a particular space, he or she must respond to the question or statement posed on that card. The response is recorded in the Idea-Collection System. If a player should repeat a space, a different response which relates to some other aspect of that question or statement should be given.
- 6.) As players travel through the game board they are gathering information, recognizing new challenges, forming ideas, evaluating ideas and designing a plan of action for the implementation of their ideas. When a player thinks that he or she has done enough planning to have his or her idea implemented, he or she may (at the beginning of the turn) state that he or she is "ready to win". The player must then present his or her plan of action. The opposing player challenges that plan by asking five questions about the plan. If the five questions are answered with information or ideas gained from the "adventure" through the game board, the player wins.
- 7.) If the player is unable to answer any or all of those questions regarding that plan of action with the gathered

information or ideas, the player must then return to "START". Before the player may be "ready to win" again, he or she must land on the appropriate spaces in order to answer questions which are relevant to "the ones which were missed.

8.) Play continues until someone wins.

Rationale:

The Adventure of Super Plan uses an inventory of questions developed from the text material to help implement and gain acceptance for ideas. The inherent randomness of the game's format provides a variety of exercises and challenges since no one line of questioning may necessarily become prevalent. The competitive aspect of the game allows a player to set up challenges for the other to meet.

SESSION SEVEN

This course in creativity is based upon the creative problem-solving process (CPS). Periodically through this course, students are given the opportunity to work through a problem of their own, using CPS. Session Seven is such an opportunity. In order not to lose perspective on the serious nature of this course, games will not be used for the problem run-through sessions. There is no need to simulate these sessions since they present themselves as real-life situations. Students are encouraged to use the flow-sheets provided for Session Seven in the Creative Actionbook.

SESSION EIGHT

Through greater awareness more alternatives become revealed. Session Eight helps to deepen one's awareness through using detailed observation and shifting viewpoints. The use of all the senses is also emphasized. The three games used in Session Eight are Fact-Finding Mission Force, What Would Sherlock Say, and Sensation.

Name of Game or Simulation: Fact-Finding Mission Force

Objectives: (1) To emphasize observation and fact-finding as related to earlier sessions; (2) To provide pre- and post-exercises in visual observation, separated by a series of exercises practicing such observation; (3) To provide an exercise in using a checklist for triggering more observation; (4) To provide for discovery of the value of detailed observation in the problem-solving process.

Player Organization: 2 opposing teams, facilitator.

Gaming Devices:

- Envelopes (optional)
- Paper
- Pens
- Pocket summary-card (from Creative Actionbook)

Steps of Play:

- 1.) Before the game, the facilitator scouts the grounds outside of the classroom and decides upon easily located and stimulating environments.
- 2.) The facilitator prepares directions as how to find these environments. To add a sense of mystery and intrigue, these directions might be handed to the teams in sealed envelopes.

- 3.) The mission of each team is to gather as much data as possible about its assigned environment in a matter of x minutes. Each team opens its envelope and proceeds to its assigned environment to gather data.
- 4.) As data are written down, each bit is numbered.
- 5.) Teams return to headquarters by the specified time.
- 6.) Data-lists are exchanged between teams and the facilitator refers each team to the pocket summary-card as a checklist for triggering more observations.
- 7.) In x minutes, each team proceeds to the other team's environment to verify facts and using the checklist, fill-in any gaps in the data-gathering performed by the other team.
- 8.) Teams return and compare notes. Although differences in the number of facts gathered may be evident, scoring need not be made an issue.
- 9.) The facilitator conducts a post-game discussion.

Rationale:

Fact-Finding Mission Force is a competitive game based on the fact-finding competencies of the members of each team. Fact-finding is emphasized throughout the game. Pre- and post-exercises are provided by sending the teams out twice during the course of the simulation. Practice in using a checklist

for triggering more observations occurs in the verification phase. The value of making detailed observation is revealed as teams notice the number of facts they passed over.

Name of Game or Simulation: What Would Sherlock Say

Objective: To provide shifting viewpoints with regard to graphic illustrations and to situations.

Player Organization: Several teams of 4 or 5 players each, facilitator.

Gaming Devices:

- Magazine or Newspaper photos
- Opaque projector

Steps of Play:

- 1.) Facilitator hands each team a stimulating picture from a magazine or newspaper.
- 2.) Players make observations about what they see in the photo and make assumptions as to what various details might mean. For example, a window open in the picture might indicate that it was too hot and the people wanted to cool the room, or it might mean that someone just cracked open a rotten egg and the place had to be aired out, or that somebody just jumped out of it, or that someone just broke-in to burglarize the apartment.
- 3.) After ten or fifteen minutes of making observations, the teams compose short one-act plays about their pictures.

These plays are based upon the observations and assumptions that they made.

4.) These plays are presented before the total group. An Opaque projector is used to enlarge the picture for the total group to see as a backdrop for the play.

5.) The post-game discussion concerns the observation process.

Rationale:

What Would Sherlock Say is a game of discovering what is implicit in a picture and making it explicit in a role-playing situation. The game involves using imagination in the observation process and provides the opportunity for players to conjecture what might have happened, as well as what might yet happen.

This gaming exercise meets the instructional objectives by providing the opportunity to make observations about a graphic illustration and then the opportunity to reconstruct the situation through the use of imagination. The influence of the team members on each other encourages shifting viewpoints in the course of uncovering data and scripting the scenario. This game also provides an opportunity to create an awareness of future consequences.

Name of Game or Simulation: Sensation

Objective: To provide practice in gathering through all the senses.

Player Organization: 15 to 20 participants, facilitator.

Gaming Devices:

- 13 Index cards per player
- 10 samples to hear
- 10 samples to smell
- 10 samples to taste
- 10 samples to touch

Steps of Play:

- 1.) Items of sensory stimuli are displayed.
- 2.) Players sample three items in each category. While making these observations players remain nonverbal.
- 3.) After sampling an item, players write a poetic response for that item without actually naming it or giving an obvious clue to its identity. The response is written on an index card; on the other side of the card, players write the name of the sampled item.
- 4.) Completed cards are turned over to the facilitator.
- 5.) The facilitator shuffles the cards and deals them out

description-side up to each member of the group. Trade is permitted with other players if a player is dealt his or her own card.

6.) Players determine from the descriptions what the various items might be. Since players have had the chance to sample only three out of the ten items in each group, they are permitted to make additional observations of the samples if necessary in order to make their determinations.

7.) Answers are written on a thirteenth card.

8.) When players have finished making their estimations as to what the items were, they may check their answers.

9.) The facilitator conducts a post-game discussion.

Rationale:

The major senses beyond sight, which was covered in earlier exercises, are used in this game. Touch, smell, taste and hearing are emphasized in the sampling of the sensory items. The affective mode used in the poetic rendering would cause players to stretch beyond the mere cognitive "recognition" factor in using the senses.

SESSION NINE

Session Nine provides the student another opportunity for a total problem run-through using CPS. Students should refer to the flow-sheets for Session Nine in the Creative Actionbook.

SESSION TEN

Session Ten studies the aspects of change and how one idea may be transformed or mutated into another idea. In all cases, whatever occurs to an idea results as the function of an idea spurring verb. Exercise in using idea-spurring verbs in this session is provided through the game Mind Boggle.

Name of Game or Simulation: Mind Boggle

Objective: To provide a variety of exercises in using idea-spurring verbs for stepping up the production of ideas.

Player Organization: 2 to 6 players.

Gaming Devices:

- Idea-Collection System*
- Imaga-Cards*
- Quota-Cards*
- Scamper-Cards*

Steps of Play:

- 1.) The three decks of cards are shuffled separately and placed next to each other on the playing area.
- 2.) A player draws one card from each deck.
- 3.) The player applies the function of the idea-spurring verb on the Scamper-Card to the object named on the Imaga-Card for the number of times indicated by the Quota-Card. For example, if the Scamper-Card said "minify", the Imaga-Card said "gutter" and the Quota-Card said "3", the player would give three ways a gutter could be minified in order to make new and useful products.

- 4.) Responses are recorded in the Idea-Collection System.
- 5.) Players alternate turns.

Rationale:

Mind Boggle is a game using the concept of forced-relationships as applied to idea-spurring verbs. The variety of objects named by the Imaga-Cards in interaction with the variety of idea-spurring verbs from the Scamper-Cards would provide a variety of exercises called for by the objectives for this session.

The use of Quota-Cards gives the player an opportunity to stretch their imaginations towards understanding various meanings of the idea-spurring verbs.

SESSION ELEVEN

This session is designed to help students develop their ideas through the use of their imaginations. It uses course principles as presented earlier and provides further exercise for refining skills. The session also takes a closer look at the evaluation of ideas through deepening the understanding of criteria. Games used for Session Eleven are Odd-Ball Industry and White Elephant Sale.

- Flip chart paper

- Flip

- Paper for writing criteria and ideas

- Marking pen

- Scissors

- (15) Telephone book pages

Steps of Play:

1.1 The facilitator evenly divides the yellow paper among the teams.

1.2 Teams have five minutes to select a idea coming from their version of the Yellow Paper which suggests the wildest, most impractical and hardest to implement combination.

Name of Game of Simulation: Odd-Ball Industry

Objective: To demonstrate, by practice exercises, how seemingly wild ideas can lead to entirely new approaches, and how imagination can be used to refine and develop these new approaches into effective solutions.

Player Organization: Several teams of 4 or 5 players each, facilitator.

Gaming Devices:

- Flipchart paper
- Glue
- Magazines with many pictures and advertisements
- Marking pens
- Scissors
- (old) Telephone Book Yellow Pages

Steps of Play:

- 1.) The facilitator evenly divides the Yellow Pages among the teams.
- 2.) Teams have five minutes to select an index heading from their section of the Yellow Pages which suggests the wildest, most impractical and hardest to implement idea-combination.

The index heading is located in either upper left or right hand corners of the page. For example, one Yellow Pages directory listed headings such as: BATHROOM-BEADS, CARPET-CASKETS, LIQUOR-LOANS, PLYWOOD-POPCORN, SOCIAL-SOUND, SWIMMING-TAXICABS and WATERPROOFING-WEATHER. If the Yellow Pages in use do not list index headings in this fashion, use the first and last headings on the page as the random items for the forced relationship.

- 3.) Teams pass their selections to other teams.
- 4.) Teams have a half-hour to take that wild and seemingly irrelevant idea-combination and make it into a useful product. During this half-hour the teams develop that idea and make an advertising layout which would sell the idea or product to the public and could realistically make money for a company.
- 5.) At the end of the half-hour each team is given the opportunity to share its creation with the total group.

Rationale:

With each team developing silly ideas, a spirit of play begins to develop which seems to encourage the imagination. Presenting difficult challenges, such as the commercial products in step four, encourages new approaches and stretching of the imagination. Many players may be familiar with

the metaphor that advertising is a game. In this simulation, they are playing a game--with an eye towards effective solutions.

Player Organization: 4 players.

Game Devices:

- 1. Image-Collection System
- 2. Image-Cards

Steps of Play:

1. Players sit facing each other in a circle.
2. Image-cards are shuffled and placed in the center of the playing area.
3. A player draws two Image-Cards and asks the personal judgment of: "Which object has more relation for me?" or "Which has more functional value?" The player also asks himself or herself why this is so. The responses are recorded in the Image-Collection System.
4. The player takes "ownership" of the valued object by placing it on top of his Image-Card in front of himself or

Name of Game or Simulation: White Elephant Sale

Objective: To provide exercises for deepening the understanding of criteria, including ways to uncover more criteria, relative weights of different criteria, specific criteria within vague ones, and using criteria for idea improvement.

Player Organization: 4 players.

Gaming Devices:

- Idea-Collection System*
- Imaga-Cards*

Steps of Play:

- 1.) Players sit facing each other in a circle.
- 2.) Imaga-Cards are shuffled and placed in the center of the playing area.
- 3.) A player draws two Imaga-Cards and makes the personal judgement of, "which object has more meaning for me" or "which has more functional value?" The player also asks himself or herself why this is so. The responses are recorded in the Idea-Collection System.
- 4.) The player takes "ownership" of the valued object by placing that respective Imaga-Card in front of himself or

herself.

5.) These last two steps are repeated by each player until they each have five objects of value.

6.) The Imaga-Cards selected by each player are displayed face-up so that all may see the others' cards.

7.) Players make notes about the objects the others have which they themselves would like.

8.) In orderly fashion, players negotiate with each other to gain possession of those desired objects. However, rather than just making a plain trade-off, each player must state why he or she wants the other's objects; that is to say, what value would it have for him or her. Each player must also state what he or she is willing to trade and why the other object is more important. Players must recognize the value an object has for them and what other objects in the game might bring the same value.

9.) As players gain skill in negotiating and in determining value, they might engage in three- or four-sided trades.

For example: If player A has something player B wants, but B has nothing worthwhile for A, they might negotiate with player C to gain an object for A with a payment from B.

In this negotiating, players might want to develop a strategy of selling their "White Elephants" to the others. As part

of this strategy, a player may use the criteria that another player has established and make modifications to an item in order to satisfy that person's requirements for a trade.

10.) Play continues until all are satisfied with what they have.

Rationale:

An underlying trend in the question of evaluation is the value judgement. Often, the critical criteria come down to, "What importance does it have for me?" White Elephant Sale provides a variety of exercises which cue into the area of value judgements and help to deepen the understanding of criteria.

In comparing the different objects from the Imaga-Cards, players are opened up to a broad variety of ways to uncover more criteria through the wide variety of attributes available in the diverse objects. Each object presents a different quality everytime it is compared to another object. The notion of having to decide on one object over another provides exercises in choosing the relative weights of different criteria.

Through the interaction players have in trying to sell their "White Elephants", players are able to decide specific

criteria within vague ones. Practice in using criteria for idea-improvement is provided as a player may have to modify an object in order to meet the requirements of a trade.

SESSION TWELVE

This session provides another opportunity for the student to do a total problem run-through using CPS. For this session, students should refer to the flow-sheets for Session Twelve in the Creative Actionbook.

SESSION THIRTEEN

Objective: To provide practice in morphological or matrix

Session Thirteen provides additional exercises in the formulation of ideas. A technique which is stressed is the morphological or matrix approach; this is facilitated through the game Morphological Battleship.

- Challenge-Cards

- Intercolleagues System

- Index-Cards

Steps of Play:

1.) Players deal out Index-Cards, face-down, in a row by the matrix and then turn over all the cards of any two adjacent sides. These adjacent sides become the horizontal and vertical axes. The corner card at intersection is discarded from play.

2.) In pairs, each player makes a random selection of ten cards from among those which are still face-down and lists the Index-Card headings from that selection. The cards are returned face-down to the matrix.

3.) After all the players have made their selections, the horizontal and vertical axes are made public. The cards on these lines are turned face-up to be scored during the game. Since all

Name of Game or Simulation: Morphological Battleship

Objective: To provide practice in morphological or matrix approaches to idea-finding.

Player Organization: 2 to 4 players.

Gaming Devices:

- Challenge-Cards*
- Idea-Collection System*
- Imaga-Cards*

Steps of Play:

- 1.) Players deal out Imaga-Cards, face-down, in a ten by ten matrix and then turn over all the cards of any two adjacent sides. These adjacent sides become the horizontal and vertical axes. The corner card at their intersection is discarded from play.
- 2.) In private, each player makes a random selection of ten cards from among those which are still face-down and lists the Imaga-Card headings from that selection. The cards are returned face-down to the matrix.
- 3.) After all the players have made their selections, the private lists are made public. The items on those lists represent points to be scored during the game. Since an

item might appear on more than one list, a person might score more than one point for an item.

- 4.) In order to score, a player tries to discover where the items in the other player's list are placed within the matrix. To discover these positions, the player calls out the co-ordinates of a selected card by giving the respective names of the Imaga-Cards that comprise the horizontal and vertical axes. Upon calling out those Imaga-Cards, the player must then describe a forced relationship between those two headings. The response is recorded in the Idea-Collection System.
- 5.) The player may then turn that selected card over to discover if he or she scored a point.
- 6.) If a player has scored a point, the player may check the name of that item off the lists on which it appears. A player becomes eliminated from play if all the items on his or her list become checked off.
- 7.) Cards played remain face-up to help in the elimination process.
- 8.) Game ends when all but one player becomes eliminated.
- 9.) Modification: A different twist to the game may be introduced with Challenge-Cards. Players make their selection of the co-ordinates, draw a Challenge-Card and then make their forced relationship relevant to a challenge that may be

suggested by the Challenge-Card heading.

Rationale:

Morphological Battleship is based upon the use of a matrix. This game provides practice exercises in the morphological or matrix approach to idea-finding by offering a variety of loading factors each time the game is played.

This exercise calls for the means being translated into a relevant end. The modification, step nine, calls for a relevant end demanding original means.

Although the objective doesn't call for it, the facilitator should make students aware of how to use a morphological or matrix approach for idea-finding, with either attributes or "who, what, where, when, why and how", as loading factors. This technique is more fully described in the texts.

SESSION FOURTEEN

This is another session which involves a total problem run-through using CPS. Once again, students are asked to refer to the flow sheets provided for the session in the Creative Actionbook.

SESSION FIFTEEN

Objective: To provide practice in the application of the

Session Fifteen concludes the basic course on rapid creativity. The lesson calls for using all the course principles and applying them towards making rapid decisions with a creative attitude. Oyster Bed provides the gaming exercise for this session.

Steps of Play:

(1) Facilitator gives examples of situations where a rapid decision had to be made and asks players to work in two teams and a three minute practice exercise to illustrate the process of rapid decision making. He explains that the purpose of this exercise is to help you to apply the principles of rapid decision making in a practical way. He then refers to the section notes in Appendix D of the Guide to Creative Action.

(2) Each team is allocated 100 twenty minute problems which necessitate a rapid decision.

(3) In ten minutes, each team selects up to one hundred of the "best" problems required from the programming section. These problems are written out on the large index card.

(4) Teams trade their index cards (P to D, R to C, C to A)

(5) Each team has fifteen minutes to solve as many of the

Name of Game or Simulation: Oyster Bed

Objective: To provide practice in the application of the creative problem-solving principles to the making of rapid decisions.

Player Organization: 3 opposing teams, facilitator.

Gaming Devices:

- Large index cards

Steps of Play:

- 1.) Facilitator gives examples of situations where a rapid decision had to be made and takes players through a ten minute and a three minute practice exercise to illustrate the five-step process as used in rapid decision making. He or she may want to refer to the session notes in Appendix G of the Guide to Creative Action.
- 2.) Each team brainstorms for twenty minutes on, "problems which necessitate a rapid decision."
- 3.) In ten minutes, each team selects up to one-hundred of the "best" problems resulting from the brainstorming session. These problems are written onto the large index cards.
- 4.) Teams trade their index cards. (A to B, B to C, C to A)
- 5.) Each team has fifteen minutes to solve as many of the

other team's problem as they can using the five step process in the rapid fire way. The solutions are written onto the corresponding index card.

6.) Teams trade index cards again in the same pattern.

7.) Solutions to the other team's problems are rated according to whether or not they solved the problems, were creative and used the five-step process.

8.) Results are tallied and presented before the total group.

9.) The facilitator conducts a post-game discussion as to what the results might mean, how the group reacted towards the game and which of the five steps provided insight into the creativity of the solutions.

Rationale:

The concept of this game grew out of a metaphor created by the Pearl-Diving Example in the session notes for Session Fifteen in the Guide to Creative Action.

The game provides opportunities for rapid decision-making by requiring the selection of challenging problems and solving a large number of these problems, both under severe time constraints. The aspect of competition brings out that the game is not just a race against the clock, but a contest to compare the ability to make rapid decisions.

APPENDIX A

GAMING DEVICES

Each of the games or simulations used in this thesis requires certain gaming devices in order to play the strategies intended. These gaming devices are either specialized or non-specialized. The non-specialized gaming devices are familiar objects that are easily recognized and obtainable. The specialized gaming devices are not so familiar.

The specialized gaming devices were developed specifically for this thesis. Though they are rather simple in design, facilitators should familiarize themselves with these devices in order to optimize their effectiveness.

The following catalog represents the games or simulations developed for this thesis along with a listing of the gaming devices each uses. The specialized devices used throughout the games are marked with an asterisk (*) following their name. A description of these specialized devices follows the catalog. The description for the materials used in Weedpatch (Session One) is included in the instructions for that game.

Gaming Device Catalog

Gaming Devices used in Session One

The Flight of CRS 105.page 22

- Chairs (enough for each participant)
- Hallway (to simulate airliner)
- Movie
- Movie projector
- Movie screen
- Name Bingo (Exercise 1., from Creative Actionbook)
- Paper
- Pencils
- Public-Address system
- Refreshments

Weedpatch.page 26-Weedpatch Game Kit, includes:

- Growth Bulbs*
- Idea Flags*
- Messboard*
- Problem Flags*
- Quota Cards*

Face Off.page 33

- Flipchart*
- Quota-Cards*

Gaming Devices used in Session Two

The Problem-Empathy Sculpture Game. page 36

- Challenge-Cards*
- Flipchart*

Gaming Devices used in Session Three

Future Janus. page 40

- Flipchart*
- Simulated courtroom

Arbitration.page 46

- 8 Chairs
- Flipchart*
- Long table

Slow Chess. page 49

- Chess set
- Idea-Collection System*

Habitat.page 51

- Imaga-Cards*
- Index cards
- Paper (legal-pad size)

Gaming Devices used in Session Four

The Game of Ahha!.page 55

- Idea-Collection System*
- Image-Cards*
- Quota-Cards*

In What Ways Might I.page 57

- Challenge-Cards*
- Idea-Collection System*
- Imaga-Cards*

Gaming Devices used in Session Five

The One and Only.page 60

- Flipchart*
- Matrix Evaluation Form (page 41 of Creative Actionbook)
- Pedestal
- Trio of different objects in the same category for each team (see game description)

Gaming Devices used in Session Six

The Adventure of Super Plan.page 65

- Adventure-Cards*
- Idea-Collection System*

- Marker pieces (buttons, coins, pebbles, etc.)
- Quota-Cards*

Gaming Devices used in Session Seven

Problem Run-Through: Use flow sheets in the Creative Actionbook.

Gaming Devices used in Session Eight

Fact-Finding Mission Force.page 70

- Envelopes (optional)
- Paper
- Pens
- Pocket summary-card (from Creative Actionbook)

What Would Sherlock Say.page 73

- Magazine or Newspaper photos
- Opaque Projector

Sensation.page 75

- 13 index cards per player
- 10 samples to hear
- 10 samples to smell
- 10 samples to taste
- 10 samples to touch

Gaming Devices used in Session Nine

Problem Run-Through: Use flow sheets in the Creative Actionbook.

Gaming Devices used in Session Ten

Mind Boggle.page 79

- Idea-Collection System*
- Imaga-Cards*
- Quota-Cards*
- Scamper-Cards*

Gaming Devices used in Session Eleven

Odd-Ball Industry.page 82

- Flipchart paper
- Glue
- Magazines with many pictures and advertisements
- Marking pens
- Scissors
- (old) Telephone Book Yellow Pages

White Elephant Sale.page 85

- Idea-Collection System*
- Imaga-Cards*

Gaming Devices used in Session Twelve

Problem Run-Through: Use flow sheets in the Creative Actionbook.

Gaming Devices used in Session Thirteen

Morphological Battleship. page 91

- Challenge-Cards* (optional, step 9)
- Idea-Collection System*
- Imaga-Cards*

Gaming Devices used in Session Fourteen

Problem Run-Through: Use flow sheets in the Creative Actionbook.

Gaming Devices used in Session Fifteen

Oyster Bed. page 96

- Large index cards

Specialized Gaming Devices:

I. Card Game Kit, includes:

- Adventure-Cards. page 106
- Challenge-Cards. page 106
- Imaga-Cards. page 108
- Quota-Cards. page 111
- Scamper-Cards. page 111

II. Flipchart.page 112

III. Idea-Collection System.page 113

I. Card Game Kit:

The use of these cards in the games of this thesis provides a tacit stimulus for interaction between players. They can be made from any card-like material such as manila file-folders. Five types of cards were developed as gaming devices for this thesis, they include: Adventure-Cards, Challenge-Cards, Imaga-Cards, Quota-Cards and Scamper-Cards. The content and use of each type of card is described in the following pages.

- Adventure-Cards:

These cards provide an inventory of general concerns a player might have regarding what to do about an idea. On each Adventure-Card is a statement in respect to either evaluation, implementation or the idea-spurring questions. The information used on Adventure-Cards may be adapted from both Exercise 65 and the pocket-summary card from the Creative Actionbook. Included in each deck of Adventure-Cards should be a "START" card.

- Challenge-Cards:

These cards suggest topics around which the player is to structure a relevant challenge. It is the player's own background which determines what his or her challenge is

going to be for a given Challenge-Card heading. To give the player input as to what might appear on Challenge-Cards, the developer suggests that the facilitator brainstorms with the class at the beginning of the semester about problems, challenges and concerns they might have. This brainstorming establishes topics for the Challenge-Card headings. In this way, playing games with the Challenge-Cards may have more meaning since a player would have input as the problems are worked on through the semester. There would seem to be a personal investment in playing such a game.

The following represents such a brainstormed listing of challenge areas which may be used on Challenge-Cards. This list was used by the developer in designing these games; it also is a spin-off of the list suggesting problems and challenges found in Exercise 2 of the Creative Actionbook: academics, air traffic control, animals, appearance, autumn, blankets, boredom, broken glass, candles, car or transportation, career, checking accounts, church, clothing, coat hangers, construction, creature comforts, crusades, dead fish, dress forms, environment, exercise, family, famine, fig newtons, finances, footwear, French pasteries, friends, friendships, furniture, government, grades, hard boiled eggs, hobbies and leisure time, Holy wars, hopes and desires, house, house plants,

Indian tapestries, impulsiveness, job responsibilities, knowledge, libraries, lightning, the local pub, madmen, man's inhumanity to man, money, music, neighbors, old ladies, paint, parking lots, patches, personality, pillows, plans and goals, politics, "pollution, pot holes, poverty, promotion, psychological health, radar traps, radios, rapid transit, raw sewage, record cabinets, reformation, safety, salvation, screening, school, sex, sidewalks, shampoo bottles, shopping carts, snow removal, sleep, social life, spring, stairways, storage, storage space, summer, telephones, television, terrorist groups, text books, tools, tooth paste, traffic lights, typewriters, wealth, windows, winter, works of art.

- Imaga-Cards (pronounced i'maj-i):

The primary function of Imaga-Cards is to provide reference objects for making forced relationships. These objects are rather simple objects and should be within the realm of most people's experience. They were developed from the basic list contained in Exercise 25 from the Creative Actionbook. In extending the list, this developer researched children's literature to find objects that would appear familiar. The names for those selected items appear

on the cards. The use of the name, rather than an image, was preferred by the developer in order to allow more ambiguity in interpretation.

The following list contains the names of objects as originally developed for Imaga-Cards. One name appears per card: air hose, apple, apron, armadillo, arrow, ashtray, baby, bacon, bait, ball, bandage, barometer, basket, batteries, bead, beans, bear, bed, beehive, beetle, bell, belt, bicycle, binoculars, bird cage, blanket, blender, block, bolt, book, bookbag, bottle, box, brace, branch, brick hod, bridge, broom, brush, bucket, buckles, bulletin board, buoy, bureau, button, calendar, camera, candles, candy, can opener, car, caravan, carpenter's level, caterpillar tractor, cereal, chain, chair, chimney, clarinet, clock, coffee, coffee pot, coin, colander, comb, compass, computers, cookbook, cough syrup, counter, crane, cream, crocodile, crow, crumb, cupboard, curtains, cymbals, daisies, desk, dish, dish mop, docks, donkey, door, doormat, double bass, drinking trough, dust, eggs, egg beater, electrical outlet, electric drill, elevator, engine, envelope, face cream, faucet, feather, fence, fertilizer, fish, flag, flashlight, flower pot, fork, frog, fuel truck, gantry, gate, glider, gloves, goal, gong, grease, greenhouse, grill, gutter, hairbrush, hammer, harmonica, harp, hedge,

helmet, hoe, hood, hook, house, ice skates, iron, jack,
jetty, jumper, kangaroo, ketchup, kettle, key, kite,
knife, ladder, ladle, lamp, lamp post, lawn, lawnmower,
leaf, letters, lighthouse, lint, lion, litter basket,
mailbag, mailbox, mailman, marbles, metronome. mice,
microphone, milk, milk cans, milkman, milktruck, mirror,
mixing bowl, money drawer, moths, mosquitoes, napkin,
nail, net, newsboy, notebook, oar, oboe, oil, oil cans,
oil tanker, old shoe, ostrich, pajamas, palace, paper hat,
paper clip, parcel, parachute, pebble, peanut, pen, pencil,
penknife, perfume, pianos, piccolo, picture, piggy bank,
pillow, pills, pin cushion, plate, plaster, pleasure boat,
pocket, pod, pole, policeman, polish, potato, pyramid,
queen, radiator, rainbarrel, rainbow, raisin, rake, razor,
recorder, refrigerator, rock pool, roof, rowboat, runway,
ruler, safety pin, sail, salt shaker, sandcastle, saucepan,
saxophone, scale, scarf, scissors, screw, screwdriver, sea
horses, sea weed, sewer grating, sewing machine, shell,
shoe, shoelace, shopping basket, shopping list, shovel,
sidelight, silo, sink, sled, slide, slippers, smoke, smoke
stack, soap powder, socks, soft drink, soldiers, soup flask,
space helmet, spade, spats, spinning top, spool spoon,
spotlight, stamp, stars, steamroller, stool. stove, suitcases,

sun, sweater, swing, table, talcum powder, tape, tape
measure, tar, taxi, technician, telephone booth, tent,
thermometer, thimbles, thread, thumbtack, tile, toadstools,
toast, tool bench, toothbrush, towel, tow truck, train,
trash, trash basket, trash can, trampoline, tray, tricycle,
trunk, trumpet, turban, TV screen, umbrella, underpants,
undershirt, vacuum cleaner, van, vase, violin, wallpaper,
washbasin, wastebasket, weather, wheel, wheelbarrow, whistle,
wicket, windmill, window, windshield wipers, windsock, wine
glass, wing, witch, wooden spoon, wreck, wrench, writing
counter, xylophone, yoyo, zipper.

- Quota-Cards

In general, these cards provide a random challenge of between one to five responses for each gaming situation in which they are used. As developed for the thesis, Quota-Cards come in a deck of eighty cards. The values of the cards range from one through five. There are sixteen cards per value. The deck is evenly divided between the two suits of red and blue.

- Scamper-Cards

Scamper-Cards provide the stimulus of idea-spurring verbs. The function of the verb may be applied in interaction

with the headings listed on other cards from the Card Game Kit. For example, the Scamper-Card heading of "minify" as applied in interaction with the Imaga-Card heading of "litter basket" might suggest a desk-top receptacle for waste paper.

Each of the idea-spurring verbs found in the list from Exercise 83 of the Creative Actionbook was used five times to create a deck of forty-five cards. The verbs from that exercise are: Put to Other Uses, Adapt, Modify, Magnify, Minify, Substitute, Rearrange, Reverse and Combine.

II. Flipchart:

The Flipchart consists of a flat upright surface which is, or to which may be applied, a covering that serves as a medium of display for the visual recording of thoughts or ideas. Typically in Creative Studies, this system has been represented by a large upright frame to which large sheets of paper are attached. Broad-tipped felt marking pens are used for recording. Another representation of this system is a chalkboard with chalk. The essence of the Flipchart is the ability to openly and almost immediately record and display a group's interaction.

III. Idea-Collection System:

The Idea-Collection System involves a method of collecting ideas which allows these ideas to be readily accessible for reference and implementation. One sort of Idea-Collection System which has been encouraged in Creative Studies is an easily portable notepad and pen. The essence of this system is that it should enable one using it to capture an idea whenever it occurs.

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