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CAREER SIMULATION FOR SIXTH GRADE PUPILS.

SHIRTS, R. GARRY

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*SIMULATION, *CAREER PLANNING, *GAMES, *CLASSROOM GAMES, *VOCATIONAL INTERESTS, PILOT PROJECTS, SIXTH GRADE, INTELLECTUAL EXPERIENCES, CHILD DEVELOPMENT, LIFE CAREER GAME, SAN DIEGO, CALIFORNIA

THIS WAS A PILOT PROJECT DESIGNED TO DEVELOP A MODIFIED VERSION OF THE "LIFE CAREER GAME" DEVELOPED FOR HIGH SCHOOL USE AND EXPLORE ITS POTENTIAL USE AT THE SIXTH-GRADE LEVEL. THE PROJECT WAS DIVIDED INTO A DEVELOPMENTAL PHASE AND A RESEARCH PHASE. IN THE DEVELOPMENTAL PHASE THE "LIFE CAREER GAME" DEVELOPED BY MRS. SARANE BOOCOCK OF JOHNS HOPKINS UNIVERSITY WAS MODIFIED AND SIMPLIFIED IN AN EFFORT TO MAKE IT APPROPRIATE TO THE INTELLECTUAL AND INTEREST LEVEL OF SIXTH-GRADE PUPILS. IN THE RESEARCH PHASE THE MEAN SCORES ON THE "VOCATIONAL DEVELOPMENT INVENTORY" AND THE "VOCATIONAL INFORMATION ACHIEVEMENT TEST" OF THREE SIXTH-GRADE CLASSES OF PUPILS RANDOMLY SELECTED FROM TWO SCHOOL DISTRICTS WERE COMPARED TO THE MEAN SCORES ON THE SAME TESTS OF THREE RANDOMLY SELECTED CONTROL GROUPS. THE TREATMENT GROUPS PLAYED THE MODIFIED GAME FOR 15 HOURS OVER A PERIOD OF A MONTH. THE CONTROL GROUPS RECEIVED THE REGULAR CURRICULUM WHICH DID NOT INCLUDE ANY SYSTEMATIC STUDY OF CAREER DEVELOPMENT. NO SIGNIFICANT DIFFERENCES BETWEEN TREATMENT AND CONTROL GROUPS WERE FOUND. IT WAS EVIDENT, HOWEVER, THAT THE GAME EVOKED A HIGH DEGREE OF PUPIL INTEREST. BECAUSE OF THIS FACT, FURTHER CLASSROOM STUDY CONCERNING THE USE OF THE GAME WAS FELT TO BE WARRANTED. FOR FURTHER INFORMATION ON THE "LIFE CAREER GAME," SEE ACCESSION NUMBER ED010 077. (JH)

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R. Garry Shirts

Vocational and Technical Education Grant
Number HRD-131-65, Vocational Education
Act of 1963, Section 4(c)

Department of Education, San Diego County
San Diego, California

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Permission to adapt the original Life Career Game for sixth grade use was granted by Mrs. Sarane Boocock of Johns Hopkins University, who also served as a consultant for the project. Other principal consultants included Hall Sprague of the Western Behavioral Sciences Institute, Dr. James Coleman of Johns Hopkins University, and Wesley Stafford of the La Mesa-Spring Valley School District. The project was conducted with the cooperation and support of Charles Skidmore, Superintendent of the Santee School District, and Dr. Peter Bancroft, Superintendent of the Cajon Valley Union School District. Artist-illustrator was William Emmons and Bert Seal served as photographer. Darwin Whetstine supervised production of the material. Teachers from the above two districts who participated in the project were William Anderson, Mrs. Alta Crook, Donald Kistler, Robert Long, Read Schuster, Miss Anne Standefer, and Ronald Weiss.

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CHAPTER I

PROBLEMS AND OBJECTIVES

The Department of Education of San Diego County has been involved in the development of curriculum materials for the past several years in an effort to improve the quality of courses concerned with career development (Gerstein, 1965; Pierson, 1965; Banister, 1966). In the spring of 1965 the principal investigator of the present study was introduced to the Life Career Game developed for high school age students by Mrs. Sarane Boocock and Dr. James Coleman. The game appeared to be more stimulating and interesting to participating pupils and teachers than the lectures, visiting speakers, and term paper assignments generally used in the teaching of such courses.

In considering the career development needs of younger pupils the principal investigator speculated that the Life Career Game might make it possible for these pupils to gain a view of the career decisions they would face in the future and how these relate to their forthcoming school program. Consequently, a two-part pilot project involving sixth grade pupils was developed and conducted during 1965 and 1966. In the first developmental phase of the project, modifications and simplifications were made in the Hopkins version of the game in an attempt to make it more appropriate for sixth grade pupils. This first phase involved a series of field tests conducted in the fall of 1965.

The second part or research phase of the project was designed to determine if the modified game would change sixth grade pupils' attitudes toward education and the world of work and/or increase their knowledge about the career process. The Vocational Development Inventory (hereafter referred to as VDI) developed by John Crites of the University of Iowa and the Vocational Information Achievement Test (hereafter referred to as VIAT) developed as part of the project were the two instruments used as measures of attitude change and information acquisition. The experimental design included a treatment group consisting of three classes selected randomly from the fifty-six sixth grade classes in the Cajon Valley Union and Santee school districts and a control group of three sixth grade classes selected randomly from the same population. The treatment group played the modified version of the Life Career Game for fifteen hours over a period of a month. During the same period the control group was taught the regular sixth grade curriculum which did not involve a systematic study of career development.

The specific hypothesis to be tested were:

1. There will be no significant difference between mean scores on the VDI of the treatment group when compared with the control group.

2. There will be no significant difference between the mean scores on the VIAT of the treatment group when compared with the control group.

3. There will be no significant difference between the number of occupations which the treatment group selects when asked to check those occupations of a list of twenty which they could describe (Question 40, VIAT) when compared with the control group.

4. There will be no significant difference between the number of occupations which the treatment group selects when asked to check the occupations which they have heard of (Question 40, VIAT) when compared with the control group.

5. There will be no significant difference between the number of occupations which the treatment group selects when asked to check the occupations which they are interested in (Question 40, VIAT) when compared with the control group.

CHAPTER II

SELECTED REVIEW OF LITERATURE

Simulation has been used in several different fields to train people. The armed forces were probably the first to use simulation as a training technique on a large-scale, regular basis, using it in the training of such diverse groups as pilots, radar operators, nurses, seamen, and infantrymen. Law schools have had mock trials as part of their regular curriculum for many years. There is an extensive body of literature on the use of management games to train undergraduate and graduate business students. Review of this activity can be found in books by Greenlaw and associates (1962) and Kibbee and associates (1961). The in-basket technique (Wynn, 1964) is a form of simulation which has been used to train school administrators. Kersh (1963) conducted an experiment in which teachers were trained by simulating a variety of classroom situations through the medium of sound motion pictures and printed materials.

Political science is another part of the curriculum in which simulation has been used to teach graduate and undergraduate students about such topics as international relations, the legislative process, and state and federal government. Gutzkow has been one of the leaders in this movement and his book, Simulation in International Relations, references much of the work in this field. Anderson and associates (1964) conducted a study comparing the case study method and simulation in the teaching of decision making to 134 upperclass undergraduate students. They concluded as follows:

> In general, the claims and expectations we had for simulation have not been borne out. It is not uniformly superior to case studies as a supplementary teaching activity, nor are the exceptions to this generalization quite as we predicted. We expected more differences between personality groups than were found. Nevertheless, the somewhat pessimistic conclusions from the data should not obscure two important findings, namely, that behavioral measures of interest reveal simulation to be more involving and interesting than case studies and that simulation offers much more student-to-student feedback than case discussion sections. (Anderson and associates, 1964, p. 65)

Most of the simulation work in education has been done at the college and university level. Recently, however, there has been a growing interest in using simulation in the public schools at the secondary and elementary level. Cherryholmes (1965) reported on a study in which more than 83 pupils responded to an attitude questionnaire before and after participating in an internation situation. The results indicated that "attitudinal changes do seem to occur as a result of simulation but they (the results) do not determine the extent or persistence of the altered attitudes" (p. 231).

James Coleman and associates at Johns Hopkins University have developed several games for use with students of high school and junior high school age and conducted research on the effects of the games under a grant from the Carnegie Foundation. Part of this work is described in the reports to the Foundation (Boocock, 1963) and other periodicals (Coleman, 1964; Boocock, 1964), but a good deal of the work is yet to be reported. Sarane Boocock, the originator of the Life Career Game, is in the process of analyzing the data obtained in a study designed to assess the effects of the game when used by high school age pupils.

Hall Sprague of the Western Behavioral Sciences Institute has just completed a one-year project (1966)* sponsored by the Kettering Foundation in which more than forty teachers in San Diego County have tried several simulations involving over 2,000 junior high and high school students. During the 1966-67 school year another project is planned to assess the effects of the games.

One of the few projects involving elementary school pupils is the Westchester County Project. Three computer-based economics games are being developed to be played by sixth grade pupils on a time-sharing basis.

There has not been enough systematic research to draw many conclusions about the effectiveness of simulation as a teaching method. It is likely that future research on simulation will follow the pattern of past research on other teaching methods, that is, there will be no significant differences between a new method of teaching and older methods if the person who originated the new method does not participate in the research. However, one conclusion that seems warranted from the systematic research that has been done and the impressionistic evaluations of those who have conducted simulations is that the pupils who participated have developed high interest and motivation. If it should turn out that there are no significant differences in the amount of cognitive material learned then these secondary considerations take on added importance.

*This report will be published in the fall of 1966 by the Western Behavioral Sciences Institute, La Jolla, California.

CHAPTER III

PROCEDURE

General Design

The project was divided into two phases—a developmental phase and a research phase. The developmental phase began July 1, 1965, and extended to the middle of January 1966. During this time the original Life Career Game was modified and field tested in five sixth grade classrooms. (See Results Section for description of game.)

The research phase began January 15 and extended to the end of March 1966. Three classrooms were selected randomly without replacement from a population of fifty-six classrooms to serve as the treatment group. Three control classes were also selected randomly from the same population without replacement to serve as the control group. The pupils in the treatment group played the Life Career Game for fifteen hours. The pupils of the control group received the regular sixth grade curriculum. One week before the treatment group began playing the game both groups were tested on the VDI and VIAT and then again at the conclusion of the game. The pre- and posttest scores were compared and the means tested for significance.

Measuring Instruments

1. The Vocational Development Inventory was developed by John O. Crites at the University of Iowa. It consists of two subtests—the competence test and the attitude test. The competence test was designed to measure "comprehension and problem-solving abilities as they pertain to the vocational choice process" (Crites, 1965, p. 81). The attitude test was designed to elicit "the attitudinal or dispositional response tendencies in vocational maturity which are nonintellective in nature but which may mediate both choice behaviors and choice aptitudes" (Crites, 1965, p. 7). This project used only the attitude test of the VDI.

   The attitude test of the VDI was developed by both empirical and rational processes. A rational approach advocated by Flanagan (1951) was used to develop a pool of 1,000 items concerned with the following phases of adolescent experiences:

   > (1) involvement in the process of vocational choice, (2) orientation toward the problem of vocational choice, (3) independence in decision making, (4) preferences for factors in vocational choice, (5) conceptions of vocational choice (Crites, 1965, p. 81).

Fifty items were selected for an empirical basis for the final test from this pool of 1,000 items. An item was selected for inclusion in the final form of the attitude test if the mean score of the item was monotonically related to grade level when given to a sample of 3,000 male and female students attending classes in the fifth through the twelfth grade. A true-false format was adopted because it produced better item discrimination than a Likert type of rating scale.

The items were keyed according to the responses of twelfth grade students. If an item was answered true by at least 51 percent of the twelfth grade students then the correct response for that item was assumed to be true.

2. The Vocational Information Achievement Test was developed by the project director and principal investigator. It consists of 55 scored items including 39 multiple choice questions, one completion question, and fifteen true-false questions. One month test-retest reliability for the test is .55. This was computed from the preposttreatment scores of the control group. The only claim for validity that can be made for the test is that in the judgment of the project director and principal investigator the items reflect content which can be learned while playing the Life Career Game.

Developmental Phase

During the summer of 1965 the principal investigator and Mr. Wesley Stafford, a sixth grade teacher and consultant for the project, became acquainted with the original Life Career Game. To obtain some gross idea of the difficulty level of the game, three sixth grade pupils were recruited and paid a soft drink to try to play the high school version of the game. While the pupils did surprisingly well, it was still evident that the game needed to be simplified before sixth graders similar to our sample of three could participate easily. During the summer one of the proposed questions was whether to make the sixth grade version of the Life Career Game a board game similar to such games as Monopoly or to maintain the paper form of the original game. After extensive deliberation, it was decided not to try to make it into a board game because it was feared that a board game would not be as flexible as one in paper form and that the pupils might become so involved in the mechanics and novelty of such a game that the purpose of the game might be obscured.

During the fall of 1965, a three-day workshop was held involving Mrs. Sarane Boocock of Johns Hopkins University, Hall Sprague of the Western Behavioral Sciences Institute, Wesley Stafford, and the principal investigator. During the three mornings of the workshop Wesley Stafford's sixth grade class at the Casa de Oro School played what was essentially the high school version of the game plus changes we had made during the summer. In the afternoon ideas and suggestions of ways to modify the game for sixth grade use were discussed. The following is a list of most of the suggestions and ideas discussed during the workshop:

1. Have pupils themselves write the profiles.

2. Make a more detailed and realistic presentation of the life histories using slides, pictures, movies, etc.

3. Instead of using fictitious profiles have the pupils play the game using themselves.

4. Eliminate the post high school years.

5. Eliminate marriage and family.

6. Designate some pupils in the class as resource people for the other pupils on the subject of jobs, marriage, and education.

7. Develop a simple practice game to teach the pupils how the regular game is played.

8. Start the game out very simply and gradually increase its complexity.

9. Combine the two years of junior high school into one period.

10. Combine four years of high school into two periods.

11. Have just four decision periods—junior high school, senior high school, college and/or work, and work.

12. Substitute for scoring some other form of competition.

In addition, a large portion of the workshop time was spent attempting to develop a scoring system which would reflect the model of the game yet be simple enough for sixth grade pupils.

The new version developed during the workshop was once again tried out in Wes Stafford's class. During this time, Dr. Richard Otte of the U.S. Office of Education consulted with the director and principal investigator. Dr. Otte offered several suggestions of how to improve the research portion of the project. Then another version of the game was produced which incorporated all of the improvements suggested by the workshops and the two field tests. This version was used in the final field study.

The final field study was conducted in four classrooms during the period January 3 through 20, 1966. Two of the classes played the game twice using two different profiles while the other two classrooms completed only one profile game. The two classes which were able to complete two profiles played once with the scoring procedures and once without.

In order to obtain information and ideas about the game during the field test, pupils were interviewed, teachers were interviewed, the classes were visited almost daily by the principal investigator, observers visited the classes and

gave their opinions and ideas, and teachers kept a record of all questions asked by the pupils. At the conclusion of the field test the teachers participated in a half-day critique which was recorded on magnetic tape. The following is a discussion of some of the results obtained during the field test.

1. The interviews with the pupils were not very productive. They wanted to talk about what the person in their profile was doing in the game, saying such things as "My person flunked mathematics, did your person flunk any courses?" and their comments tended to be general: "I liked the game," "We're learning a lot." However, some things were learned in these interviews, including the following:

   a. The slower pupils felt somewhat frustrated because they could not understand parts of the game, particularly the scoring, with the result that their teammates were doing all the work.

   b. All of the pupils participating felt that the game was "a lot of fun" and that they were "learning a lot."

   c. Several suggestions on how to improve the technical aspects of the game were offered, such as "Why don't you write mathematics out on the profile instead of using M." All of the suggestions considered valuable were incorporated in the final version.

2. The teachers' interviews revealed a strong liking for the game. In addition to discussing the pros and cons of changing the scoring, the teachers had several suggestions on how to improve the technical quality of the game. Some of the suggestions were:

   a. A more detailed Teacher's Manual.

   b. A list of all of the equipment and materials.

   c. Pockets in the folder to hold loose sheets.

   d. Larger and more complete Life History Charts.

   e. More information about the ability of the student described in the profile.

   f. Diplomas for graduation from high school.

All of these suggestions were incorporated in the final version.

3. Observers were impressed with the fact that the pupils were able to work by themselves with little control or direction from the teachers. Some doubts were expressed about the readiness of sixth grade pupils for instruction on vocations and career decisions which would occur so far in the future.

At the conclusion of the field study changes and additions were made to all of the materials. The single most important change was the replacement of the scoring by a procedure in which a winner is selected through class discussion and a vote. Reasons for changing the scoring procedure included the following:

1. The scoring was too difficult for all but the superior students. Most questions asked by the pupils during the field test were questions about the mechanics of scoring.

2. After interviewing teachers and pupils the principal investigator discovered that the pupils were not so much concerned with why or how they were making their decisions as they were with how many points it would get them. Thus the whole purpose of the game was being circumvented.

3. One of the original purposes of the game was to get pupils to reflect upon the values of our American culture, especially as they relate to career decisions. The predetermined scoring which was originally in the game tended to circumvent this purpose since there was a fixed number of points for each action—in other words, a built-in value system. The value system or model quite obviously was that of our upper middle class American culture.

Perhaps with secondary school and college students the scoring and the values it teaches could be justified on the grounds that students at this level would challenge the model and its relationship both to reality and their own idealism. Thus the goal of encouraging students to think about the values of our culture would have been met. However, it quickly became apparent that sixth grade pupils challenge very few things, especially printed material presented by the teacher. By replacing the scoring system with a procedure (see Teacher's Manual) in which the pupils were required to select the team who planned the best life for their hypothetical person, it was hoped that pupils would be encouraged to think about and discuss our value system.

In addition to the scoring change, suggestions for making the material more professional from a visual point of view were developed through consultation with members of the Audio-Visual and Production Sections of the Department of Education. These suggestions included such matters as the addition of covers to the material, the use of offset printing rather than mimeograph, the addition of pockets on the covers, and the use of a symbol to identify the materials.

Research Phase

1. Selection of Sample

All fifty-eight teachers of sixth grade classes in the Cajon Valley Union and Santee school districts were numbered as they appeared in the 1965-66 Directory of School Districts and Department of Education of San Diego County. An arbitrary starting point on the random number table was selected. From that point pupils taught by teachers having the next three numbers were designated the experimental group, the following three were designated the control group. Three teachers whose numbers were selected were not chosen: one had participated in the project before, one was no longer teaching, and one as a result of a team teaching situation would have been teaching pupils who had participated in the field test. To replace these three teachers, the teachers whose numbers corresponded to the next number on the random table were selected. If a pupil did not take both the pretest and posttest of one of the tests, he was eliminated from that sample. Consequently, it was possible for a pupil's VDI score to be included in the VDI sample, and not in the VIAT sample and vice versa.

Both the treatment group and the control group were tested on the VDI and VIAT one week before the treatment group began playing the game and then again at the conclusion of the game.

2. Preparation of Teachers

Lists of the teachers selected for the experimental and the control groups were submitted to the superintendents of the participating school districts, who were asked if they would support us in approaching the selected teachers to ask them to participate. Both superintendents agreed, and in accordance with our suggestion, called the school principals, explained the situation, and asked them to support the research. We then contacted the teachers, who had been briefed by the principals. Two of the three teachers of the experimental groups were eager to participate. The other teacher, because his pupils were of low ability, didn't think the game would work with them, but he did agree to participate. All of the control group teachers willingly agreed to take part in the project. Letters detailing the purpose, intent, and procedure of the testing were sent to the control and treatment group teachers (see Appendix).

Two weeks prior to the starting date the principal investigator met with the teachers of classes comprising the experimental group. During that meeting the following matters were explained to the teachers:

a. How to conduct the game. This was supplemented with sample copies of the game and the early form of the Teacher's Manual.

b. The general outline of the experimental design.

c. Some rules regarding the conduct of the game, such as the following:

(1) Each teacher should spend fifteen hours playing the game between the beginning date, March 1, and the conclusion, March 29, 1966.

(2) The necessity of reducing the "Hawthorne effect" as much as possible by:

(a) Allowing only the school principal and the project principal investigator to visit the class.

(b) Treating the game as much like the regular curriculum as possible and not indicating it was an experiment.

(c) Separating the pretesting and posttesting from the actual conduct of the career simulation experience.

On the basis of the field test experience it was estimated that two complete games could be completed by the pupils in fifteen hours of playing time; this time allotment was therefore used in the research phase. The daily scheduling of the game was left to the discretion of the teachers. All three teachers elected to conduct the game in a series of one- or two-hour blocks of time. One of the experimental classes was able to complete the game twice using two different profiles while the other two classes completed the game only once.

CHAPTER IV

RESULTS AND DISCUSSION

Development Phase

The results of the development phase were the creation of a modified version of the Life Career Game. A sample copy of the game is included with this report. The following brief description of the game is included here for the convenience of the reader.

In the Life Career Game pupils simulate making some of the decisions a fictitious person would make as he progressed through school, prepared for and obtained a job, and entered marriage and family life. The purposes of the game are to give pupils some understanding of educational and career choices, provide experiences in planning for their own future, and provoke thought about the nature of the good life in our American society.

To prepare for playing the game, the class is divided into teams of two pupils, boys together and girls together. Sets of teams are formed by grouping three or four teams of the same sex. Each team is supplied with or creates a profile of a fictitious person approximately their own age. The profiles give a description of the fictitious person's attitudes, abilities, background, and aspirations. All boys in the class work with the same male profile and all girls work with the same female profile.

The Life Career Game is played by each team simulating a typical week in each of several years in the life of their person. They decide what their person is to do during that week and enter these activities on a printed schedule representing 66 hours of the week. If their person is under 16, he or she must attend school from 8:00 a. m. to 3:00 p. m. After each school day and on Saturday he or she may spend his time in leisure activities, in studying, in working at home, or in a part-time job. School grades are determined by using a chart which considers the person's ability, the number of hours studied, and chance occurrencies. The record of what the person did during the week is entered in the Life History Chart.

If the person is able to graduate from high school, he or she receives a diploma. After high school the simulated possibilities are getting a full-time job, going to any one of five colleges, marrying, having children, or any feasible combination of these. During the post high school period each team must select an Event Card each year. The Event Cards simulate certain unplanned events in the person's life such as losing a job, getting a raise, having children. The simulation portion of the game continues until each team has carried its person to approximately the age of 26 or until they have had

their person complete all of the schooling that they want him to and have selected his first full-time job.

At the end of the simulation portion of the game each set of teams selects the team from their set which planned the "best" life for a male profile and the team which planned the "best" life for a female profile. These teams then attempt to demonstrate to the class why the life they planned for their person is superior to the life that the other contenders planned for their person. The class or group members discuss the presentations and then vote by secret ballot for the teams they believe planned the best life for a male profile and the best life for a female profile.

Research Phase

Tables I and II present the comparison of the treatment and control groups on the VDI and the VIAT. The following can be seen:

1. The mean pretreatment scores of experimental and control groups on the VDI and the VIAT were not significantly different.

2. The mean posttreatment scores of the experimental and control groups on the VDI and the VIAT were not significantly different.

Tables III, IV, and V present the results of the chi square analysis related to the frequency with which the Ss responded that they had heard of, were interested in, or could describe some twenty occupations.

TABLE I
VOCATIONAL DEVELOPMENT INVENTORY

Pretest					Posttest				
Control N = 127		Treatment N = 86			Control N = 127		Treatment N = 86		
Mean	S. D.	Mean	S. D.	t	Mean	S. D.	Mean	S. D.	t
29.45	5.12	30.87	4.71	.34 NS	30.90	4.33	32.76	4.98	.41 NS

TABLE II
VOCATIONAL INFORMATION ACHIEVEMENT TEST

Pretest					Posttest				
Control N = 114		Treatment N = 80			Control N = 114		Treatment N = 80		
Mean	S. D.	Mean	S. D.	t	Mean	S. D.	Mean	S. D.	t
31.98	6.00	33.98	5.64	.39 NS	33.76	6.17	37.90	4.68	.79 NS

TABLE III
VIAT

Question 40 Describe

Pretest			Posttest		
Control N = 114	Treatment N = 80		Control N = 114	Treatment N = 80	
Frequency	Frequency	X^2	Frequency	Frequency	X^2
998	739	1.21 NS	1,144	760	1.40 NS

TABLE IV
VIAT

Question 40 Heard of

Pretest			Posttest		
Control N = 114	Treatment N = 80		Control N = 114	Treatment N = 80	
Frequency	Frequency	X^2	Frequency	Frequency	X^2
1,438	1,064	1.73 NS	1,448	1,098	3.73 NS

TABLE V
VIAT

Question 40 Interest In

Pretest			Posttest		
Control N = 114	Treatment N = 80		Control N = 114	Treatment N = 80	
Frequency	Frequency	X^2	Frequency	Frequency	X^2
258	126	11 Sig	276	110	

Since the pretesting indicated that the experimental and control groups were significantly different in the number of occupations in which an interest was expressed (Table V), no posttest comparisons were made.

However, with regard to the other two comparisons (Tables III and IV) it can be seen that there were no significant differences between the control and the treatment groups on the pretreatment or the posttreatment scores.

Discussion

The failure to obtain significant differences was a surprise and disappointment to me, the principal investigator. I was surprised because my experience with this simulation and others had convinced me that such games evoke tremendous interest, and I had assumed that this interest would facilitate learning. The results were doubly surprising because the project, being of a pilot nature, was designed to get an idea of the Life Career Game's potential without even attempting to compare its effectiveness to that of other methods. The control group was included only to help check on the Hawthorne effect and the possible influence of passage of time. In effect, the research was comparing something against nothing, and in this kind of situation, the question frequently is not whether significant differences will be found but only how significant the differences will be.

In the opinion of this investigator, the most likely explanation for the nonappearance of significant differences is attributable to the age and maturity of the sixth grade pupils. Although the need for and value of some sort of vocational education in the elementary school has been pointed out many times (Norris, 1963, pp. 4-36), it is possible that such experiences, to be meaningful to sixth grade pupils, cannot project as far into the future as the career game attempted to do. There was no empirical check of this hypothesis. The reports of the pupils and the evaluation of both the teachers and the principal investigator all pointed to tremendous pupil interest and involvement on the part of the pupils. This might be explained by the novelty of the situation. In spite of the

precautions taken to prevent the Hawthorne effect, the pupils couldn't help but be aware of the fact that they were something special. They also knew that the regular curriculum was being replaced by something different. As one sixth grader put it when asked by a visitor why he liked the game, it was "Because we don't have to do so much arithmetic."

Another possible explanation, which is related to the first, is that the game, even though simplified, is still too difficult for sixth grade pupils. However, only one of the eight teachers who used the game during the project held this view. His pupils ranged from average to low ability. The following are quotes taped during the critique: "There was always a great deal of confusion on the part of some pupils as to what was happening with grading their fictitious person. Some pupils never did understand it." "For children who have difficulty checking and scoring simple spelling lessons or remembering combinations in the 6 or 7 table or even the 3 or 4 table this game is too involved."

A third possible explanation could be that the tests were inappropriate. This explanation might well hold for the VDI, since it was developed for an entirely different purpose in another part of the country, but is less likely when the VIAT is considered, since every item in the test is covered one way or the other in the game. On the other hand, the VIAT is basically a test of knowledge, and it may be that the game teaches higher level skills such as synthesis or evaluation. In any event, future research projects will have to pay as much or more attention to the development of valid measuring instruments as they do to the development of the instructional materials themselves.

Based on our experience in the field test, a fifteen-hour time limit was set in the belief that the pupils would be able to complete two complete profiles. As it turned out only one of the three classes completed two profiles in the time allotted while the other two completed only one. It may be that this was simply not enough time for the pupils to assimilate the sorts of things we expected them to.

Recommendations

This pilot project should be just a beginning of the exploration of simulation as a method of teaching career development to younger pupils. The high interest that the game obviously evokes in most pupils should be exploitable for their educational and vocational development. On the basis of the experience gained while conducting this project, the following are some recommended future courses of action.

1. Simplify the game for sixth grade pupils even further by simulating only the seventh and eighth grades.

2. Develop a game that simulates the high school years for playing with eighth grade pupils.

3. Develop measuring instruments which measure the higher cognitive processes associated with the game.

4. Develop a research project to study the interaction between intelligence, sex, and learning in the game as well as the main effects.

CHAPTER V

SUMMARY

This was a pilot project designed to develop a modified version of the Life Career Game developed for high school use and explore its potential use at the sixth grade level. The project was divided into two phases—a developmental phase and a research phase. In the developmental phase the Life Career Game developed by Mrs. Sarane Boocock of Johns Hopkins University was modified and simplified in an effort to make it appropriate to the intellectual and interest level of sixth grade pupils. In the research phase the mean scores on the Vocational Development Inventory and the Vocational Information Achievement Test of three sixth grade classes of pupils randomly selected from the Cajon Valley Union and Santee school districts were compared to the mean scores on the same tests of three randomly selected control groups. The treatment groups played the modified game for fifteen hours over a period of a month. The control groups received the regular curriculum which did not include any systematic study of career development. No significant differences between treatment and control groups were found. However, it was evident that the game evoked a high degree of pupil interest. Recommendations for further exploration were made.

APPENDIX

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Dear

I appreciate your participation in this project. The time to conduct the post-testing has arrived. I am including directions similar to those for the pretesting in order to insure uniform administration of the tests.

1. The Vocational Development Inventory (VDI) should be given on the 28th of March. The Vocational Information Achievement Test (VIAT) should be given on the 29th of March.

2. It should be explained to the students that the tests are being given because the Department of Education, San Diego County, is interested in learning about what sixth graders know about vocations, junior high school, and high school, so we can develop materials to teach this information. Specific reference to the Life Career Game or the general experimental design should not be made.

3. Pupils should be urged to answer as many questions as possible, and be encouraged to guess if they have the slightest hint as to the correct answer.

4. The pupils can be helped if they do not understand the directions, and words can be pronounced for them, but words should not be defined, i.e., "That word is drudgery, but I am not allowed to tell you what it means."

5. Be sure that the name of the pupil is on the answer sheet or the test booklet.

The Vocational Development Inventory is answered on answer sheets, while the Vocational Achievement Test is answered directly on the test.

If you would return the VDI answer sheets and VIAT test booklets to your school secretary on the day that they are given, I will pick them up.

Once again, thank you for participating in this project.

Sincerely yours,

R. Garry Shirts
Guidance Coordinator

RGS:MS

VOCATIONAL DEVELOPMENT INVENTORY

JOHN O. CRITES

UNIVERSITY OF IOWA

Directions: Listed below are a number of statements about occupational choice and work. Read each statement and decide whether you agree with it or disagree with it. If you agree or mostly agree with the statement, blacken the circle in the column headed T on the separate answer sheet. If you disagree or mostly disagree with the statement, blacken the circle in the column headed F on the answer sheet. Be sure your marks are heavy and black. Erase completely any answer you wish to change.

1. You have to know what you are good at, and what you are poor at, before you can choose an occupation.

2. Ask others about their occupations, but make your own choice.

3. It's unwise to choose an occupation until you have given it a lot of thought.

4. Once you make an occupational choice, you can't make another one.

5. In making an occupational choice, you need to know what kind of person you are.

6. A person can do anything he wants as long as he tries hard.

7. Your occupation is important because it determines how much you can earn.

8. A consideration of what you are good at is more important than what you like in choosing an occupation.

9. Plans which are indefinite now will become much clearer in the future.

10. Your parents probably know better than anybody which occupation you should enter.

11. Work is worthwhile mainly because it lets you buy the things you want.

12. Work is drudgery.

13. Why try to decide upon an occupation when the future is so uncertain.

14. It's probably just as easy to be successful in one occupation as it is in another.

15. By the time you are 15, you should have your mind pretty well made up about the occupation you intend to enter.

16. There are so many factors to consider in choosing an occupation, it is hard to make a decision.

17. Sometimes you can't get into the occupation you want to enter.

18. You can't go very far wrong by following your parent's advice about which occupation to enter.

19. Working in an occupation is much like going to school.

20. The best thing to do is to try out several occupations, and then choose the one you like best.

21. There is only one occupation for each individual.

22. The most important consideration in choosing an occupation is whether you like it.

23. Whether you are interested in an occupation is not as important as whether you can do the work.

24. You get into an occupation mostly by chance.

25. It's who you know, not what you know, that's important in an occupation.

26. Choose an occupation which gives you a chance to help others.

27. Choose an occupation, then plan how to enter it.

28. Choose an occupation in which you can someday become famous.

29. If you have some doubts about what you want to do, ask your parents or friends for advice and suggestions.

30. Choose an occupation which allows you to do what you believe in.

31. The most important part of work is the pleasure which comes from doing it.

32. It doesn't matter which occupation you choose as long as it pays well.

33. As far as choosing an occupation is concerned, something will come along sooner or later.

34. Why worry about choosing an occupation when you don't have anything to say about it anyway.

35. The best occupation is one which has interesting work.

36. I really can't find any occupation that has much appeal to me.

37. I have little or no idea of what working will be like.

38. When I am trying to study, I often find myself daydreaming about what it'll be like when I start working.

39. If I have to go into the military, I think I'll wait to choose an occupation until I'm out.

40. When it comes to choosing an occupation, I'll make up my own mind.

41. I want to really accomplish something in my work—to make a great discovery or earn lots of money or help a great number of people.

42. As long as I can remember I've known what I want to do.

43. I can't understand how some people can be so set about what they want to do.

44. My occupation will have to be one which has short hours and nice working conditions.

45. The occupation I choose has to give me plenty of freedom to do what I want.

46. I want an occupation which pays good money.

47. I often wonder how successful I'll be in my occupation.

48. I know which occupation I want to enter, but I have difficulty in preparing myself for it.

49. I know very little about the requirements of occupations.

50. I want to continue my schooling, but I don't know what courses to take or which occupation to choose.

51. I spend a lot of time wishing I could do work that I know I cannot ever possibly do.

52. I'm not going to worry about choosing an occupation until I'm out of school.

53. If I can just help others in my work, I'll be happy.

54. I guess everybody has to go to work sooner or later, but I don't look forward to it.

55. I often daydream about what I want to be, but I really don't have an occupational choice.

56. The greatest appeal of an occupation to me is the opportunity it provides for getting ahead.

57. Everyone seems to tell me something different, until now I don't know which occupation to choose.

58. I have a pretty good idea of the occupation I want to enter, but I don't know how to go about it.

59. I plan to follow the occupation my parents suggest.

60. I seldom think about the occupation I want to enter.

VOCATIONAL INFORMATION ACHIEVEMENT TEST

Form B

Name: Grade: School: Sex: Boy Girl

Circle the correct letter. Try to answer all questions.

1. A goal is:

   A. A score that you get on a test.
   B. What a tennis player does when he hits the ball over the net.
   C. Something for which you aim.
   D. A type of ghost.

2. Scholastic ability is:

   A. How well you can do school work.
   B. Something for which you aim.
   C. The grades you get in arithmetic.
   D. Something that a person likes to do.

3. Interests are:

   A. Something for which you aim.
   B. The grades you get in arithmetic.
   C. Things that a person likes to do.
   D. Rests that you take between classes at college.

4. Scholastic achievement is:

   A. The grades you have received in school.
   B. Money that is given to you to help you go to school.
   C. A reward you get for obeying all of the safety rules at school.
   D. The work you do with your hands.

5. A scholarship is:

   A. The grades you have received in school.
   B. Money that is given to you to help you go to school.
   C. A reward for obeying all of the safety rules at school.
   D. The work you do with your hands.
   E. A type of diploma.

Go on to next page.

6. Which of the following is most like a trade school?

   A. A university.
   B. A college.
   C. High school.
   D. A junior college.

7. Most people who go to a junior college go for:

   A. Four years.
   B. Three years.
   C. Two years.
   D. One year.

8. If you wanted to go to just one school until you became a doctor, to what school would you go?

   A. A trade school.
   B. A junior college.
   C. A university.

9. If you wanted to learn how to be a dental assistant or drive heavy road building equipment, to what school would you go?

   A. A trade school.
   B. A college.
   C. A university.

10. In most junior high schools and high schools you generally have:

   A. One teacher.
   B. Two teachers.
   C. Six teachers.
   D. Ten teachers.

11. If a boy wants to be on the football team, he usually has to:

   A. Practice after school.
   B. Practice when he has physical education.
   C. Practice when he has physical education and on Saturdays.
   D. Practice any time he wants.

Go on to next page.

12. While girls are in high school, they can prepare themselves for jobs in offices by:

    A. Taking commercial courses like shorthand, typing, and bookkeeping courses.
    B. Going to school on Saturday.
    C. They can't prepare themselves for office jobs while they are in high school.
    D. Taking courses which will prepare them for college.

13. While boys are in high school, they can prepare themselves for jobs when they get out of high school by:

    A. Taking athletics.
    B. Taking vocational courses like welding, automobile mechanics, and electronics.
    C. Taking foreign language, English literature, and physiology.
    D. They can't prepare themselves for jobs while they are in high school.

14. If you want to get a scholastic scholarship, you should:

    A. Get good grades.
    B. Obey all of the safety rules.
    C. Try to get elected class president.
    D. Try to be the star of the football team.

15. Some pupils get poor grades because:

    A. They have to work and can't find the time to study.
    B. They are not able to do school work.
    C. They don't like school.
    D. They don't plan their time well.
    E. All of the above.

16. A person who leaves high school before he graduates and works full time in a gas station would make about:

    A. $1,000 per month.
    B. $750 per month.
    C. $250 per month.
    D. $75 per month.
    E. $25 per month.

Go on to next page.

17. A person in college has a greater number of courses that he can pick from than a person in:

A. Junior high school.
B. High school.
C. A person in junior high school and high school.
D. None of these.

18. A person in high school has a greater number of courses to pick from than a person in:

A. Junior high school.
B. Junior college.
C. High school.
D. None of the above.

19. A person in junior high school has a greater number of courses to pick from than a person in:

A. High school.
B. Junior college.
C. College.
D. None of the above.

20. The cost of going to college is:

A. About the same as going to high school.
B. Less than going to high school.
C. More than going to high school.

21. A person always has to:

A. Move away from home to go to college.
B. Go to a college in the city that they live in.
C. Go to a junior college before going to a regular college.
D. Go to a trade school before going to college.
E. None of the above.

22. Which of the following is true?

A. Almost all high school graduates go to college.
B. More than half of the high school graduates go to college.
C. Less than half of the high school graduates go to college.

Go on to next page.

23. A dropout is someone who:

A. Will not play a game because his feelings are hurt.
B. Does not finish high school.
C. Works in a service station.
D. Digs ditches.

24. If you want to be a teacher, you have to have completed:

A. One year of college.
B. Two years of college.
C. Three years of college.
D. Four or five years of college.

25. The chances for a person to get a job who has not finished high school are:

A. Better than those of a person who has graduated from high school.
B. Not as good as those of the person who has finished college.
C. Not as good as those of the person who has finished junior college.
D. Not as good as those of the person who has had experiences in the job.
E. All except A.

26. People who graduate from college tend to:

A. Marry at an older age than people who don't go to college.
B. Marry at a younger age than people who don't go to college.
C. Marry at about the same age as people who don't go to college.

27. People who graduate from college:

A. Generally make more money than people who don't go to college.
B. Generally make less money than people who don't go to college.
C. Make about the same amount of money as people who don't go to college.

28. In the year 1980 there will probably be:

A. More jobs in which you use your muscles.
B. Fewer jobs in which you use your muscles.
C. The same number of jobs as there are today in which you use your muscles.

Go on to next page.

29. In the year 1980 there will probably be:

A. More jobs like doctor, minister, psychologist, and nurse than today.
B. Fewer jobs like doctor, minister, psychologist, and nurse than today.
C. About the same number of jobs like doctor, minister, psychologist, and nurse as today.

30. In the year 1980 there will probably be:

A. More jobs in which you need a college education than there are today.
B. Fewer jobs in which you need a college education than there are today.
C. About the same number of jobs in which you need a college education as there are today.

31. A registered nurse has to have at least:

A. A high school diploma.
B. One or two years of junior college or trade school.
C. Four or five years of college.
D. Seven or eight years of college.

32. A doctor of medicine has to have at least:

A. A high school diploma.
B. One or two years of junior college or trade school.
C. Four or five years of college.
D. Seven or eight years of college.

33. A service station worker has to have at least:

A. A high school diploma.
B. One or two years of junior college or trade school.
C. Four or five years of college.
D. Seven or eight years of college.

34. A mechanical engineer has to have at least:

A. A high school diploma.
B. One or two years of junior college or trade school.
C. Four or five years of college.
D. Seven or eight years of college.

Go on to next page.

35. A practical nurse has to have at least:

A. A high school diploma.
B. One or two years of junior college or trade school.
C. Four or five years of college.
D. Seven or eight years of college.

36. A dental assistant has to have at least:

A. A high school diploma.
B. One or two years of junior college or trade school.
C. Four or five years of college.
D. Seven or eight years of college.

37. A model has to have at least:

A. A high school diploma.
B. One or two years of junior college or trade school.
C. Four or five years of college.
D. Seven or eight years of college.

38. A beautician has to have at least:

A. A high school diploma.
B. One or two years of junior college or trade school.
C. Four or five years of college.
D. Seven or eight years of college.

39. Which of the following should a person do before completing his last year of junior high school?

A. Decide what courses to take in high school.
B. Decide what courses to take in college.
C. Decide what occupation to enter.
D. All of the above.

40. See next page.

40. On the list of occupations below check the ones you have heard of, the ones that you could describe pretty accurately, and the ones you might be interested in for yourself.

	X in the space given if—		
	You have heard of this occupation	You could describe what a person in this occupation does	You might be interested in this occupation for yourself
Beautician			
Cashier			
Welder			
Building Contractor			
Photoengraver			
Machinist			
Anesthetist			
Accountant			
Bookkeeper			
Interpreter			
Computer programmer			
Dental hygienist			
Draftsman			
Laboratory technician			
Buyer			
Actuary			
Engineer			
Personnel worker			
Systems analyst			
Agricultural extension agent			

If you agree with a statement or think it is true, put a "T" in the space. If you disagree with a statement or think it is false, put an "F" in the space.

___ 41. The grades you get in high school tell you very little about how well you will do in your occupation.

___ 42. Planning ahead of time is a waste of time because the future is so uncertain.

___ 43. It is just as easy for a married woman to go to college as it is for a woman who is not married.

___ 44. Most girls now finishing high school will likely work at a job for twenty years or more during their life time.

___ 45. Whenever a college girl marries, she should drop out of school.

___ 46. A person can't pay his own way through college.

___ 47. There are colleges a person may attend at a cost of less than $100 a year.

___ 48. A person can have a very satisfying life without getting a college education.

___ 49. Once a person is over 30 years old he will never have to go to school again.

___ 50. A person will never have more than one type of job during his lifetime.

___ 51. There is only one "right" occupation for each individual.

___ 52. Which occupation to choose is the only thing you have to worry about in planning a career.

___ 53. You can't start preparing for an occupation until you graduate from high school.

___ 54. Most people are in jobs that are glamorous.

___ 55. There are <u>not</u> more than 500 different jobs in the United States.

56. What do you want to be when you grow up? _____

_____

_____