

AN EVALUATION OF A LECTURE-LABORATORY
PROGRAM OF PHYSICAL EDUCATION

by

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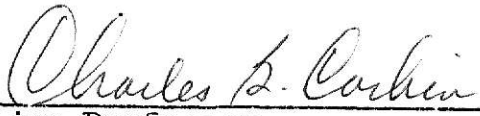
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DEDICATION

I would like to dedicate this thesis to my wife, Leanna. Without her love, understanding and constant reassurances this project would never have been initiated let alone completed.

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Chapter 1

INTRODUCTION

Historically, physical education programs have been oriented to teaching activities that keep the students busy in the gymnasium setting. Few if any other horizons were explored. Brunner (2:42) interviewed adults who had been away from their school physical education program for 20 to 30 years. He found that 63% of those interviewed felt their school physical education experiences was of no benefit to them in later life.

In an attempt to provide a more pertinent basis for individuals to use later in life, a new approach to teaching physical education has been developed. This new method, the lecture-laboratory approach, consists of a lecture discussing various aspects of physical fitness and then laboratory procedures to help the students learn how to solve their own physical fitness problems. One such lecture-laboratory approach is the Concepts in Physical Education program (Concepts) at Kansas State University. This program was begun in 1972 and has served as a model for over 200 similar programs throughout the United States.

STATEMENT OF THE PROBLEM

It has been documented that weaknesses exist in traditional physical education programs. Also acknowledged

is the sound theoretical basis of the new lecture-laboratory courses. However little if any evaluation of these programs have been conducted.

This study was conducted to determine the amount of success that the Concepts program at Kansas State University has had as far as value to the student. The value of any program to the people that it is designed for can only be determined through serious and precise evaluation. Without an evaluation, it is pure conjecture to make any statements as to the effectiveness of the program. Hodges (7:15) concluded that it was important that we learn as much as possible about our present programs so that present and future programs will be constructed in the best interest of those concerned.

A primary objective of the Concepts course is "to acquaint students with basic knowledges, understandings and values of physical activity as it relates to optimal healthful living" (5:1). Another consideration is the cognitive domain. The focus of the (cognitive) domain is not upon the learning construct but upon the behavioral response which results from the construct (13:143). If the individual who has been exposed to the subject matter is truly to benefit from it, then the information should be transferred into actual practice.

PURPOSE OF THE STUDY

Since the inception of the Concepts program at Kansas State University, there has been little evaluation of it. Therefore, the purpose of this investigation was to evaluate the effectiveness of a lecture-laboratory physical education (Concepts) class as taught at Kansas State University. More specifically, the purposes of this study were to determine the attitudes of the students toward the Concepts class and the effects, if any, on their personal views toward physical activity.

There were three areas evaluated. The first area was the impact of the Concepts class on the personal behavior of the subject. The second area was the self-assessed ability of the subject in establishing personal physical fitness programs. The third was an evaluation of the Concepts course by the subjects who had completed the course.

Hypotheses

The following hypotheses were tested.

Hypothesis one. There is no difference in mean scores between the control and experimental groups on relevant behavioral measures.

Hypothesis two. There is no difference in mean scores between males and females on relevant behavioral measures.

Hypothesis three. There is no difference in mean scores between Sophomores and Juniors on relevant behavioral measures.

Hypothesis four. There are no interactions among sex, class and group on relevant behavioral measures.

Hypothesis five. There is no difference in mean scores between the control and experimental groups on measures of confidence in designing a personal physical fitness program.

Hypothesis six. There is no difference in mean scores between males and females on measures of confidence in designing a personal physical fitness program.

Hypothesis seven. There is no difference in mean scores between Sophomores and Juniors on measures of confidence in designing a personal physical fitness program.

Hypothesis eight. There are no interactions among sex, class and group on measures of confidence in designing a personal physical fitness program.

Hypothesis nine. The subjects of the experimental group will evaluate specific aspects of the Concepts course positively.

Hypothesis 10. There is no difference in mean scores between males and females of the experimental group on general evaluation measures.

Hypothesis 11. There is no difference in mean scores between Sophomores and Juniors of the experimental group on general evaluation measures.

Hypothesis 12. There are no interactions between sex and class of the experimental group on general evaluation measures.

To test these hypotheses, a specially constructed questionnaire was administered to students who had gained credit for the Concepts course during the past two years and to a group of students who had no such credit on their transcripts. The questionnaire yielded general scores as well as results on individual items. These general scores were: the Behavioral Index, the Confidence Index, and the Evaluation Index.

LIMITATIONS OF THE STUDY

There were three limitations which existed in this study. The first was that the questionnaire format may obtain answers other than answers that are true feelings of the subject for a valuable result. The second limitation was that there was no method used for determining which members of the experimental group had quizzed out of the Concepts in Physical Education course. The third was that the course was new and constantly changing.

DELIMITATION OF THE STUDY

The subjects involved in this study were a sample of Sophomores and Juniors enrolled at Kansas State University, Manhattan, Kansas, during the 1974 Fall Semester. The subjects included some transfer students from other colleges in the control group.

DEFINITION OF TERMS

Behavioral Index. A section of the questionnaire to determine the degree the Concepts course has affected the personal behavior of the subject.

Confidence Index. A section of the questionnaire to determine the self-assessed ability of the subject in establishing personal physical fitness programs.

Concepts in Physical Education. A required basic physical education class which presents the most up-to-date scientific evidence underlying physical fitness. A lecture-laboratory structured course.

Evaluation Index. A section of the questionnaire to determine the evaluation of the Concepts course by the subjects who had completed the course (Experimental group).

Chapter 2

REVIEW OF RELATED LITERATURE

For the past several years, many studies have been done to determine the status of physical education programs. These studies have covered a wide range of programs in two and four year colleges across the United States. However, since the lecture-laboratory approach to college physical education was initiated; little has been done to evaluate courses of this type. This review includes studies of student attitudes toward physical education programs, status of physical education programs, methods of attitude measurement in physical education and lecture-laboratory course evaluations.

STUDENT ATTITUDES TOWARD PHYSICAL EDUCATION PROGRAMS

Two studies were conducted to determine the effects of various types of physical education programs and how the students reacted to these programs. These studies covered different aspects of the total physical education programs in different sections of the country. Kahnert (9) tried to determine a relationship of selected components of physical fitness to physical fitness knowledge and attitude or opinion expressed toward physical fitness of male college students. He found that physical fitness knowledge related positively to attitude or opinion expressed toward physical

fitness.

In the other study, Gravett (6) made a comparison of the effects of four selected programs of physical education with regard to physical education. The four programs were an adaptive activities program in a homogeneous class, an adaptive activities program in a heterogeneous class, a regular activity program in a homogeneous class and a regular activity program in a heterogeneous class. He found that heterogeneous grouping in an adaptive activities program produced a significant improvement in attitude toward physical education, however, there was no significant differences found among the four programs with regard to improvement in attitude toward physical education.

In 1972, Reeves (12) researched the stated attitudes of freshman students toward physical education at the beginning and at the end of their first college physical education activity class to determine if there was any statistically significant change. He found a positive change in the stated attitudes of all freshman students toward physical education that was significant at the .01 level. Generally sex was not a significant variable in stated attitude change toward physical education.

STATUS OF PHYSICAL EDUCATION PROGRAMS

In 1971-72, Oxendine (11) researched the current status and practices of general instruction programs of

physical education in four-year colleges and universities in the United States. He found 95% to have a physical education program for the general college student. Also, the requirement of physical education in four-year institutions had decreased substantially over the past four years. The extent of the requirement had been reduced in many institutions where a requirement remains in existence. Competency examinations are being used more and more as a means of exempting students from the physical education requirement. Finally, the awarding of credits for physical education classes has increased substantially since 1968.

Using the same questionnaire format as Oxendine, Hodges (7) investigated the current status and organizational structure of physical education in public two-year colleges of the midwestern United States. He found that females of institutions surveyed placed body conditioning as fifth on their list of areas of interest whereas the males didn't include it in their top five activities. This should give physical educators impetus to push for an increase in the emphasis of conditioning to correct this attitude.

Also with a questionnaire format, Thomas, et. al. (14) studied the status and trends of physical education in junior colleges in the Southern District of the AAHPER. They found that physical fitness activities were second in increased demand only to recreational classes (life-time sports). There was no indication as to the extent of the

courses offered to the students. They concluded that programs seem to be receiving increased emphasis in both state and private junior colleges.

METHODS OF ATTITUDE MEASUREMENT IN PHYSICAL EDUCATION

The most widely used methods of constructing attitude scales were developed by Thurstone and Likert. Developed in 1920, Thurstone (15) based his attitude scale on the equally appearing intervals technique. In 1932, Likert (10) devised a scale in which each statement is a scale in itself. Both methods present statements in questionnaire format and the respondents are required to indicate to what extent, for the Likert scale, they agree or disagree with each statement. The Thurstone scale required the respondents to answer only the statements that were relevant to them. However, the Likert scale required the respondents to answer all the statements with one of a range of either three or five responses.

Wear (16) developed an attitude evaluation inventory containing 120 statements with a Likert-type scale containing five responses and administered it to 494 men students. The statements were believed to be related to the outcomes which authorities in the field of physical education generally agreed should result from a well-balanced and well-conducted program of physical education. He concluded that either the

total Inventory or the 40-item Short Form would serve a useful purpose when used as an evaluation instrument for securing an objective assessment of changes in attitude toward physical education. Wear further concluded that through responses to a relatively small number of statements related to the outcomes sought by means of physical education activities, it was possible to secure a reliable and valid evaluation of attitude toward physical education.

In 1940, Baker (1) used the questionnaire format for a study of factors that influence participation in physical education for women. The questionnaire consisted of measurements of height and weight, chronological age, menarcheal age and attitude toward physical activity. She administered the questionnaire to 1150 girls and women between the ages of 15 and 25. Baker concluded that the girls habits of activity modified as they matured and factors which produced these changes seemed to be of social and physical action. Also the psycho-physical factors investigated seemed to exert little influence on participation.

LECTURE-LABORATORY COURSE EVALUATION

In 1969, Corbin (3) found that 70% of the students rated the lecture-laboratory course at Texas A&M favorably after the first semester and 95% rated the course favorably after the second semester. Also, the students indicated a two to one preference for "Concepts" as more valuable than

the activity class. He summarized by encouraging other institutions to meet the needs of thinking students and supplement their program with a lecture-laboratory "Concepts" type program.

Corbin and Chevrette (4) investigated whether changes in attitude toward physical education resulted from a required lecture-laboratory physical education course designed to present information concerning exercise and physical activity. The Wear Attitude (Form A) was administered to 596 male freshman students enrolled in the course during the first and last laboratory periods of the semester. They found that the freshman scored higher on the post-test general subscale, the mental-emotional subscale and on the test total. The social and physiological-physical subscales showed no statistical change over the semester. No sound conclusions were drawn from the results of this study. However, they recommended further research concerning attitudinal changes resulting from lecture-laboratory physical education and the development of an attitudinal instrument more suited to the lecture-laboratory type than to the traditional skill class.

SUMMARY

There seems to be a general consensus of these studies as to the importance of evaluating present programs to determine if changes in programs need to be made and, if

so, where changes need to be made. Although several studies have been done to evaluate the traditional physical education programs, little has been done to evaluate the new lecture-laboratory physical education programs. The evaluations that have been done with these programs have not been extensive and have used previously established evaluation questionnaires. It has been suggested that further investigations need to be made with an evaluation instrument designed specifically for the measurement of the new lecture-laboratory physical education programs (4:139). Therefore, this study was undertaken to achieve such an evaluation.

Chapter 3

PROCEDURES

The purposes of this study were to determine the attitudes of the students toward lecture-laboratory physical education (Concepts) and toward physical activity. The procedures were outlined, submitted and approved by the Rights and Welfare Committee of the Health, Physical Education and Recreation Department.

Selection of Subjects

Subjects for this study were 500 students enrolled at Kansas State University during the 1974 Fall Semester. Two-hundred and sixty two male and 238 female subjects were randomly selected from the student directory. A table of

Table 1

Number and Grouping of Students
Selected for Test Subjects

	Experimental	Control
So. Males	108	38
So. Females	92	12
Jr. Males	91	25
Jr. Females	109	25

random numbers was used and the average number of students of the group on a page of five random pages determined the

highest number acceptable for the selection process. A separate group of numbers was used for each group of subjects selected. Two hundred Sophomores and 200 Juniors who had successfully completed the Concepts in Physical Education course (Experimental group) and 50 Sophomores and 50 Juniors who had not been exposed to the Concepts in Physical Education course (Control group) were selected. The sex and class distributions are shown in Table 1. The actual sample size was depleted because some subjects selected were not included in any of the areas that were to be compared. This particular subject group can be seen in Table 3.

The determination of status relative to the Concepts in Physical Education course was made at the Office of Records and Admissions. The subject's academic record was checked to determine whether or not credit for Concepts had been completed.

Pilot Study

The initial step for preparing the test questionnaire was to obtain taped interviews from volunteer students who had taken the Concepts in Physical Education course. These subjects were not among those selected for the major study. The identity of each subject interviewed was kept confidential as seen in Appendix B.

The intent of this procedure was to ensure that the test questionnaire contained content relevant to the attitudes and behaviors of the population of interest. However,

the information obtained from the interviews added little to the questions obtained from other sources.

Development of Questionnaire

All of the instructors of the Concepts labs submitted questions concerning different aspects of the course. These questions were submitted to a panel of four professors who made the final evaluations and selections. The four were Dr. Charles Corbin, Head of Health, Physical Education and Recreation and one of the authors of Concepts in Physical Education; Dr. David Laurie, Coordinator of the Concepts in Physical Education program at Kansas State University; Dr. John Merriman, Assistant Professor of Health, Physical Education and Recreation; and Dr. Donald Hoyt, Head of Educational Resources. The judgement of this panel of experts was used to enhance the content validity of the instrument.

The final questionnaire developed consisted of three sections (Appendix A). The first section, the Behavioral Index, consisted of 14 questions about various behaviors concerning physical activity. Subjects were to indicate if they had displayed these behaviors the past 12 months. The answer was a simple yes or no response. A sample item was:

6. Followed a program designed to increase strength and muscular endurance?

The Kuder-Richardson formula 20 was used to determine the reliability of the Behavioral Index. An estimate of .76 was

obtained; the corrected odd-even correlation was .80. Results for individual items are shown in Table 2.

Table 2

Item Characteristics and Internal Consistency of the Physical Fitness Behavioral Index

Item	Percent "Yes"	Correlation with Total
1	40.8	.63
2	43.7	.26
3	65.0	.29
4	50.8	.32
5	28.6	.65
6	33.1	.60
7	25.4	.52
8	36.0	.39
9	7.4	.19
10	46.0	.60
11	48.6	.59
12	31.5	.62
13	43.4	.51
14	38.9	.63

Mean= 5.39 Standard Deviation=
3.23 KR 20= .76 Corrected
Odd-Even Correlation= .80

For a brief, two-alternative "test", the obtained reliability was surprisingly high. From these results, there was no reason to challenge the adequacy of the instrument for testing Hypotheses one, two, three and four. Item nine appeared unusually difficult, and items two, three and four were not as highly correlated with the total score as might be desired. Refinements of this index might profitably