1979

A Survey of the Attitudes of Industrial Arts Teachers in the Tidewater Area of Virginia

John Edwin Jones
Old Dominion University

A SURVEY OF THE ATTITUDES OF INDUSTRIAL ARTS TEACHERS IN THE TIDEWATER AREA OF VIRGINIA TOWARD POSSIBLE COMPETENCY-BASED EDUCATION

A Research Paper Presented to
Dr. Edwin M. Rudisill

In Partial Fulfillment
of the Requirements for the Degree of
Masters of Science in Education

John Edwin Jones
Old Dominion University
April, 1979

This research paper was prepared by John Edwin Jones under the direction of Dr. David Joyner, in Education 536, Problems in Education. It is submitted to the Graduate Program Director as partial fulfillment of the requirements for the degree of Masters of Science in Education.

Approved By: David Joyner 4/30/79
Advisor Date

John M. Ruth 4-30-79
Graduate Program Director Date

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Preface

The purpose of this study was to determine the attitudes of industrial arts teachers toward the possible use of competency-based education and catalogs of tasks for present industrial arts programs. The Introduction explains why the study was undertaken and familiarizes the reader with the issues. Chapter Two reviews previous research and ideas on the subject. Chapter Three explains how the study was made and Chapter Four presents the data obtained by the study. The paper concludes with the significance of the study.

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Chapter 1

INTRODUCTION

Educational reform is a slow process that gradually gains support from educators with few exceptions, such as competency-based education. Seldom in the history of education has an idea gained such widespread acceptance as has competency-based education programs. These programs require students to demonstrate mastery of fundamental skills in all areas of education. The concepts of competency-based education were first proposed as a developmental basis for the Comprehensive Elementary Teacher Evaluation Module in 1968 and have already been incorporated into programs for secondary teacher education, professional education, military training, and vocational education.(EPDA Regional Workshop on CBVE, 1976) Supporters see competency-based education as a means for holding schools and teachers accountable for the products of their programs, helping students demonstrate life skills, and keeping schools accountable for the tax dollar.(Reilly, 1978)

Nearly every educational journal has carried the comments of both supporters and critics of competency-based education, but few have given any factual data. Assumptions have been made on the effectiveness of programs. Descriptions of various programs have also been presented. Furthermore, assumptions have been made on the acceptance of competency-

based education programs. (Reilly, 1978) Factual data is needed to support many of these assumptions.

PURPOSE OF THE STUDY

It has been cited in the introduction that the community and educators are supporting competency-based education. These are assumptions made about the attitudes of large groups of people. The purpose of this study is to survey the attitudes of a small group of educators, industrial arts teachers in the Tidewater area of Virginia, toward competency-based education.

The questions that need to be answered are:

1. What is the attitude of these teachers toward competency-based education in general?

2. What is the attitude of these teachers toward competency-based instruction catalogs for industrial arts education?

3. How does the attitude of these teachers differ among school systems in the Tidewater area.

IMPORTANCE OF THE STUDY

Competency-based education programs require a great amount of time and effort to be put forth by the teacher. (Flammer, 1971) If these programs are to be successful the teachers managing them must be willing to accept and implement them. The work of establishing criterion-referenced measurements, catalogs of competencies, and developing in-service training programs will be in vain without the support of the classroom teacher. Determining the present attitudes of

industrial arts teachers toward competency-based education programs before presenting or implementing them can help educational leaders succeed. Time may be available to change attitudes if they are not favorable or actions may be taken to determine what components of competency-based education are not favorable to industrial arts teachers.

DEFINITION OF TERMS

Competency- the ability to perform a specific task or duty successfully.

Competency-based education- educational program in which required performances are specified and agreed to in rigorous detail in advance of instruction.

Competency-based instruction catalogs- catalogs of tasks used to measure if a student has obtained the minimum competencies of a particular program or course.

Criterion-referenced measurement- an evaluative item based on a performance objective, requiring the learner to show ability to accomplish a task in a given situation according to a preset standard.

Individualized instruction- learner-centered instruction in which the materials and activities are tailored to meet the needs of the individual student.

Life skills- skills in performing everyday activities such as keeping a checkbook balanced, shopping wisely, and keeping tax records.

Mastery- meeting all requirements for completion of a task or duty.

Task- a unit of work which is a necessary part of distinct work activities in an occupational area.

INSTRUMENTATION

After reviewing related materials on competency-based education, summated rating scales will be constructed for each question stated in the purpose of the study. A questionaire will be derived including the attitude scales and mailed to Industrial Arts teachers in the Cities of Chesapeake, Norfolk, Portsmouth, and Virginia Beach, Virginia after obtaining approval from each school system. The questionaires will be collected, scored, and evaluated using appropriate statistical methods.

ASSUMPTIONS AND LIMITATIONS

The use of attitude scales lead to some assumptions that must be considered before starting the study. The researcher must assume that attitudes are measureable and that attitudes are common to members of a specific group.

There are also limitations that must be considered by the researcher. Subjects may conceal their real attitudes in order to express socially acceptable opinion. Subjects may also not have sufficient knowledge of statements they are asked to respond to in a questionaire. Furthermore, subjects may be apathetic about the subject in question.

Chapter 2

REVIEW OF RELATED LITERATURE

One can find differing attitudes on all topics of education. Competency-based education has had its' share and will continue to for some time. Few studies have been made on the attitudes of teachers toward competency-based education, although areas closely related have been researched. The researcher would like to present these studies as well as the opinions of the supporters and critics of competency-based education.

Reviewing literature on competency-based education leads to a discovery of the components of it. Individualized instruction is one of the major components of competency-based education. (Nagel, 1972) In a study to assess the attitudes of Distributive Education students and teachers toward individualized instruction Park (1975) determined that both groups were more favorable towards it than traditional methods of instruction. He used two questionaires, validated by a panel of experts, to gather information. The population consisted of 159 students and 36 teachers. Positive student responses were directed to items related to availability of instruction, individual competency records, and perceptions of the teacher as a learning manager. The attitudes of teachers and students were in extremely close agreement.

Williamson (1973) studied the attitudes of two groups of teachers toward the use of individualized instruction. One group was composed of 110 teachers who were assigned to suburban middle class secondary schools. The other group of 33 teachers were assigned to inner-city ghetto secondary schools where individualized instruction is needed. Both groups were administered the Individualized Instruction Inventory before and after teaching assignments. Before teaching both groups had the same attitude toward individualized instruction. After their teaching experiences the inner-city group was significantly more positive toward individualized instruction. The most significant conclusion is that "how a teacher feels about individualized instruction will largely determine whether or not he employs it."(Williamson, 1973)

Criterion-referenced measures are another component of competency-based instruction.(Cilley,1977) In a study to determine teachers' attitudes toward criterion-referenced measures Elsner (1973) determined that criterion-referenced measures were helpful in planning. Questionaires were given to 259 teachers before using criterion-referenced measures and after using them. Of the total 259 teachers, 83.4 per cent completed forms on Survey One and 72.7 per cent responded on Survey Two. 95.6 per cent of the teachers indicated this was their first experience with criterion-referenced measures. After evaluation of the data it was determined that 57 per cent of the teachers were in favor of using criterion-referenced

measures.

One of the major reasons for the development of competency-based education is accountability. "In a 1976 national poll, 65 per cent of the respondents said they believed that students should be required to show minimum competencies in subject areas." (Reilly,1973) Investigating teacher attitudes toward accountability (Sacco, 1976) , it was found that accountability is not generally favored by teachers, although some studies are in disagreement with this statement, In a study to determine the attitudes of professional vocational educators toward critical issues regarding competency-based teacher education, it was found that no additinnal differences among vocational educators are found based on the degree of a state's committment to competency-based education. (Gray, 1977)

Competency-based education was first developed and used for teacher training. (Reilly, 1978) Robert Roth (1977) did extensive research on the effectiveness of these programs and determined the following:

> It must be stated that no conclusion can be drawn concerning the effectiveness of competency-based teacher education in general from the data available at this time.

Some studies have found that teachers completing training in competency-based programs have a favorable attitude towards them. Doyle (1976) researched teaching graduates perceptions of competency-based and conventional teacher education programs at the University of Georgia. Using

questionaires he found that the program provided satisfactory experiences for performing in teaching situations. More favorable attitudes were found by teachers in the competency-based programs toward personal development and job preparation.

Although studies have not been made to determine if teachers are in favor of competency-based education, studies have been made to determine student attitudes. The attitudes of industrial education students toward traditional and performance-based, competency-based, instruction was researched by Stone (1977). The population of students were randomly selected and placed in two groups. Group One, experimental group, consisted of twenty-six subjects and Group Two, control group, consisted of twenty-four subjects. The attitudes of the students were defined and measured on the Attitudes Toward Evaluation Scale. This instrument based on the semantic differential techniques, was specially designed to assess student attitudes toward the method of grading. The greatest attitudinal differences occurred among students in the traditional group at the 0.1 level. This study indicated that the traditional method was most disliked by the lower fiftieth percentile. An opinion poll given to 1,196 students, grades 9 through 12, in Georgia high schools determined that students were in favor of minimum competencies.(Schab,1978)

Another area that can be looked at is teachers' attitudes toward change.

> The success of any broad educational innovation is not simply a result of whether the proper procedures have been technically carried out. It depends heavily upon the cooperation and involvement of the teacher. (Keisler, 1977)

It is concluded that the teacher who is involved in planning of an educational reform or has been given the opportunity to obtain competencies in implementing new programs will have a more favorable attitude toward them. (Keisler, 1977) A similar study was conducted by Laugenbach (1972). The purpose of this study was to determine if teachers with preparation for educational reform had a more favorable attitude than teachers without preparation. First, Laugenbach designed an instrument for evaluating this question. A random selection of principals from several schools were asked to nominate teachers with favorable and unfavorable attitudes toward reform. Of the 83 inventories of 307 statements, forty-five went to teachers nominated as having positive attitudes. and thirty-eight went to teachers nominated as having negative attitudes. 50 discriminating statements were recognized and used to test another school district. The reliability and standard error of measurement were considered adequate enough to proceed with the study. 274 teachers were sent the inventories to determine their attitudes. As a result it was determined that teachers with some type of in-service preparation had more favorable attitudes toward education reform.

To study the attitudes of teachers toward a topic in education it is necessary to know the opinions of its' supporters. The step-by-step approach of competency-based education or instruction has distinct advantages. Students know exactly what is expected of them. Teachers are able

to identify slow learners more readily. Parents can be better informed of what competencies their child has mastered. Teachers can spend more time with slower students with the use of individualized instruction. (Reilly,1978) Students can move at their own pace and will not be held behind for slower students to catch-up. Students can use any method or experience to obtain a competency or complete a task. (EPDA Regional Workshop on CBVE, 1976) Competency-based programs will allow students to enter and exit at any stage of a program. (Nagel, 1972)

A look at the other side discovers the opinions of the critics of the competency-based education. Who will decide what competencies are necessary for a program and what the criterion-referenced measure should be? Programs and teachers will be evaluated on the achievement of their students. Some critics fear that competency-based education programs will lead to segregation in the schools. (Reilly,1978) Since competency-based instruction is dependent on individualized instruction, students with poor reading abilities may have difficulty with individualized learning materials. Individualization may lead to a decrease in student interaction. Programs will require more time and effort on the part of the teacher. (EPDA Regional Workshop on CBVE, 1976) "If students are told what to learn that is all they will learn." (Flammer, 1971)

What conclusions can be made from the related literature? First, attitudes of teachers do affect the success of

programs. Second, there is support that attitudes can be measured. Third, questionaires are most often used to research attitudes if only out of necessity. And lastly, teachers who are prepared for teaching competency-based programs will implement and conduct them more favorably than teachers with no preparation.

It is evident that a study of the attitudes of a group of teachers will be valuable in the planning of programs to prepare them for administering them. Also, the study would be valuable in the planning of materials to be used in implementing and managing them.

Chapter 3

METHOD OF RESEARCH

As a result of reviewing related literature on competency-based education, a list of favorable and unfavorable statements about competency-based education was derived. Likewise, a list of favorable and unfavorable statements about the use of task catalogs for industrial arts programs was also developed. Ten statements, five favorable and five unfavorable, were chosen from each list. The statements were reviewed by several industrial arts educators who are familar with competency-based education and the possible use of task catalogs to further validate the statements.

A summated rating scale was constructed using the ten statements about competency-based education. A second summated rating scale was constructed using the ten statements about task catalogs.

Directors of research of the school systems of Norfolk, Portsmouth, Chesapeake, and Virginia Beach were contacted to acquire approval for mailing a questionaire to industrial arts teachers in their school systems. Approval was obtained and a mailing list was formed from a 1977 State Department of Education directory.

The questionaire consisted of the summated rating scales and a brief letter explaining the purpose of the ques-

tionaire. Return addressed envelopes were included to insure a better response. The questionaires were sent to all industrial arts teachers included in the directory. Respondents were asked to complete the summated rating scales and indicate their school system. They simply had to check if they strongly agree, agree, are undecided, disagree, or strongly disagree to each statement making up the scales.

The number of responses were sufficient to provide a good sampling. Twenty-eight of thirty questionaires, 93%, were obtained from Chesapeake teachers. Eighteen of twenty-six questionaires, 69%, were obtained from Portsmouth teachers. Forty-two of sixty-three questionaires, 67%, were obtained from Virginia Beach teachers. Forty-nine of sixty-seven questionaires, 73%, were obtained from Norfolk teachers.

The summated rating scales were scored by first assigning scale values to each position of response. All statements favoring competency-based education or the use of task catalogs were scored:

	scale value
a. Strongly Agree	5
b. Agree	4
c. Undecided	3
d. Disagree	2
e. Strongly Disagree	1

Statements opposing competency-based education and the use of task catalogs were scored:

	scale value
a. Strongly Agree	1
b. Agree	2
c. Undecided	3
d. Disagree	4
e. Strongly Disagree	5

The scores on each statement were added to obtain a single score for each ten statement scale. A score of fifty would reveal the most favorable response. A score of ten would reveal the most unfavorable response. A score of thirty would reveal a neutral attitude.

The scores were sorted and ranked by school divisions. Measures of central tendency and standard deviation were computed to determine the attitudes of industrial arts teachers toward the two issues at hand. This information was also used to compare attitudes from individual school systems.

Chapter 4

PRESENTATION AND ANALYSIS OF DATA

In answer to question one, what is the attitude of these teachers toward competency-based education in general, a score between thirty and forty would reveal a slightly favorable attitude. The following histograms display the scores of each school system:

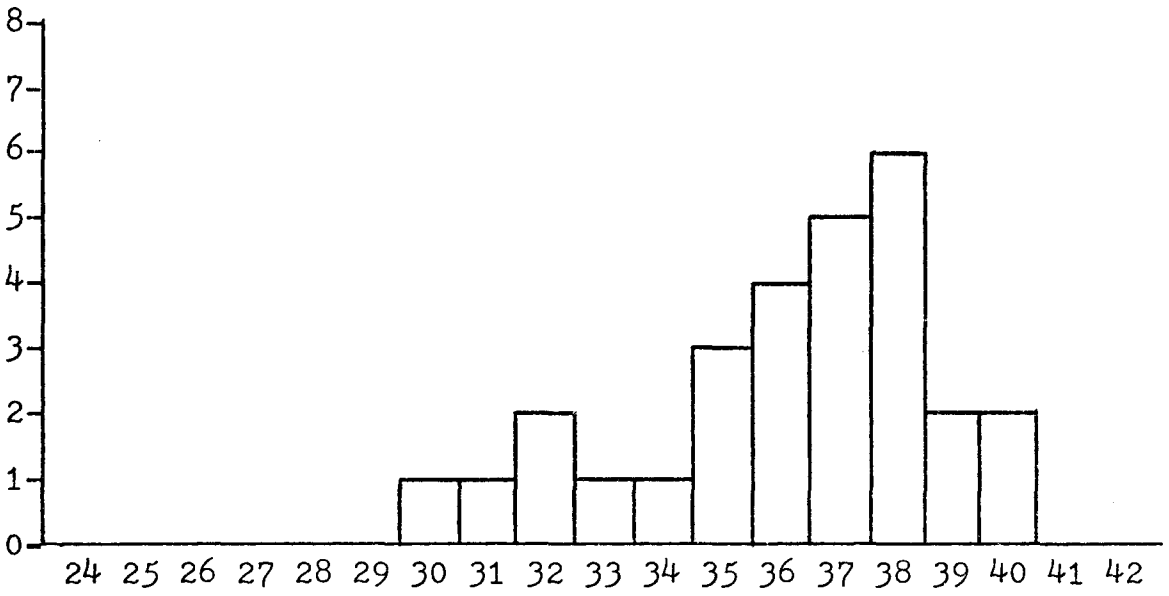

Figure 1 Scores of Chesapeake teachers' attitudes toward competency-based education .

The scores of Chesapeake industrial arts teachers compute a mean of 36.14 and a standard deviation of 2.64. There are no scores denoting an unfavorable response.

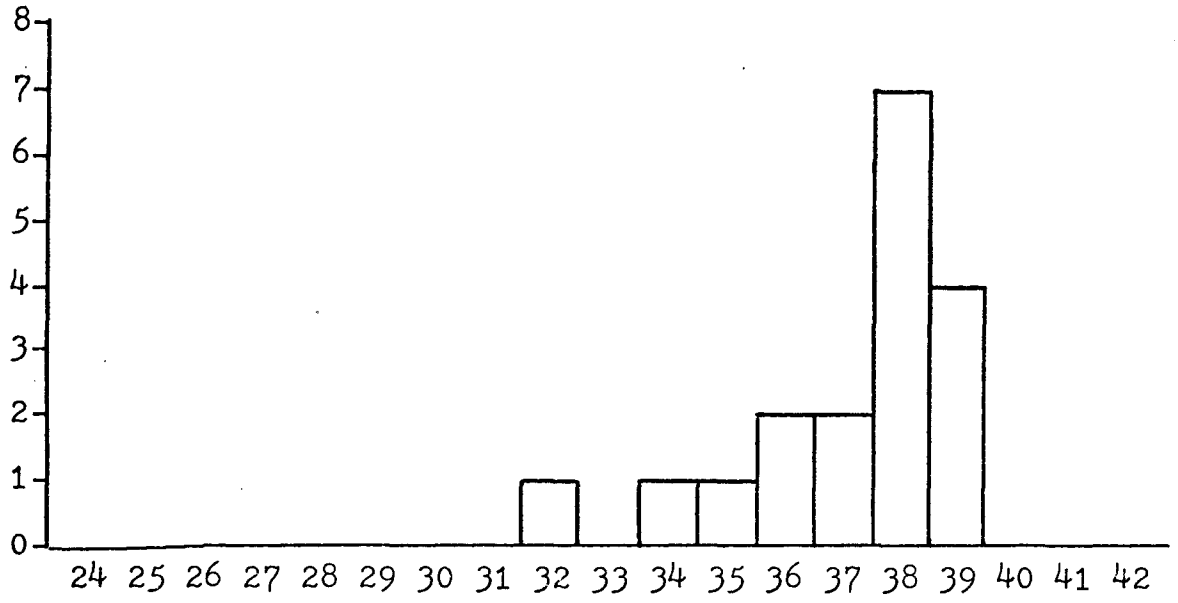

Figure 2 Scores of Portsmouth teachers' attitudes toward competency-based education

The scores of Portsmouth industrial arts teachers compute a mean of 37.17 and a standard deviation of 1.93. There are no scores denoting an unfavorable response.

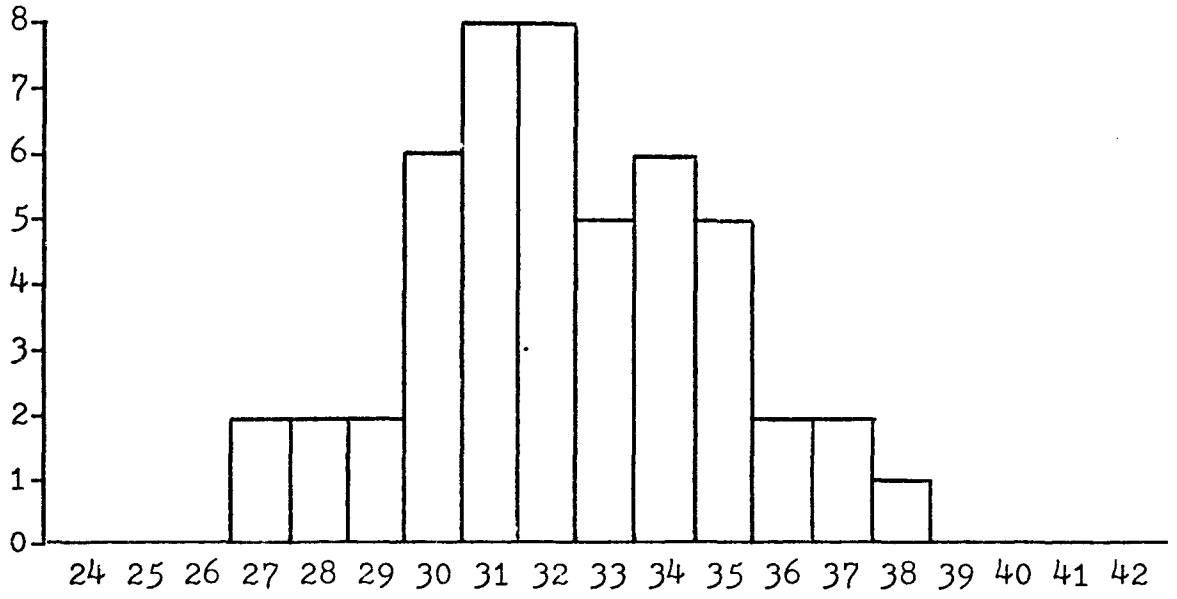

Figure 3 Scores of Norfolk teachers' attitudes toward competency-based education

The scores of Norfolk industrial arts teachers compute a mean of 32.24 and a standard deviation of 2.59. There are six scores that denote a slightly unfavorable response.

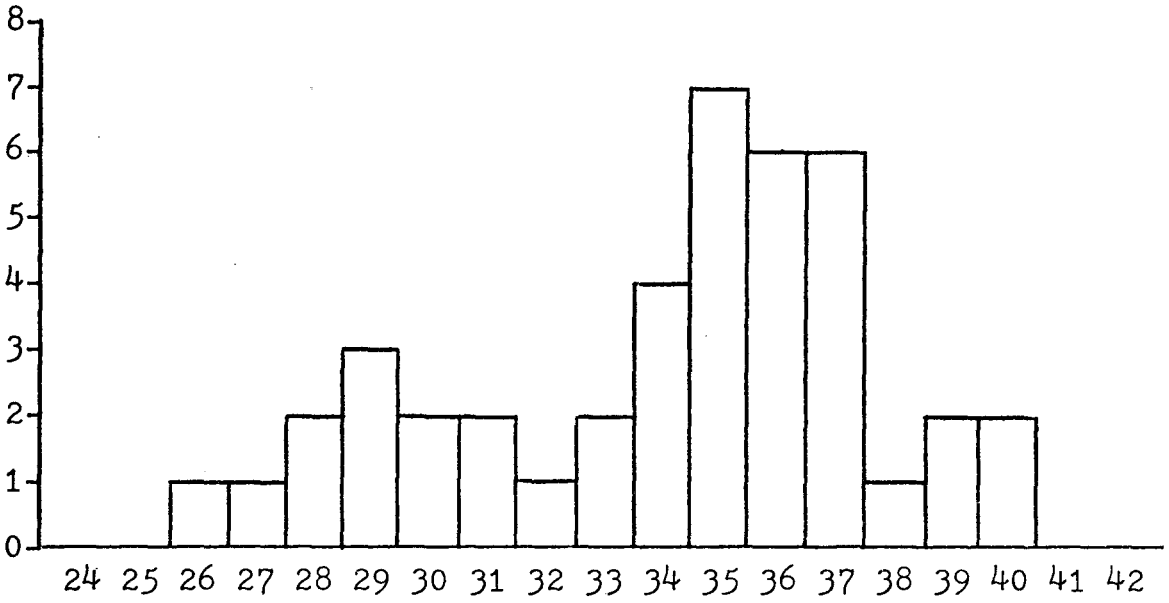

Figure 4 Scores of Virginia Beach teachers' attitudes toward competency-based education

The scores of Virginia Beach industrial arts teachers compute a mean of 34.07 and a standard deviation of 3.63. There are seven scores that denote a slightly unfavorable response.

The data reveals that there does exist a favorable attitude among industrial arts teachers in the Tidewater area of Virginia towards competency-based education.

In answer to question two, what is the attitude of these teachers toward competency-based instruction catalogs, task catalogs, for industrial arts education, a score between thirty and forty would reveal a slighty favorable attitude. The following histograms display the scores of each school

system:

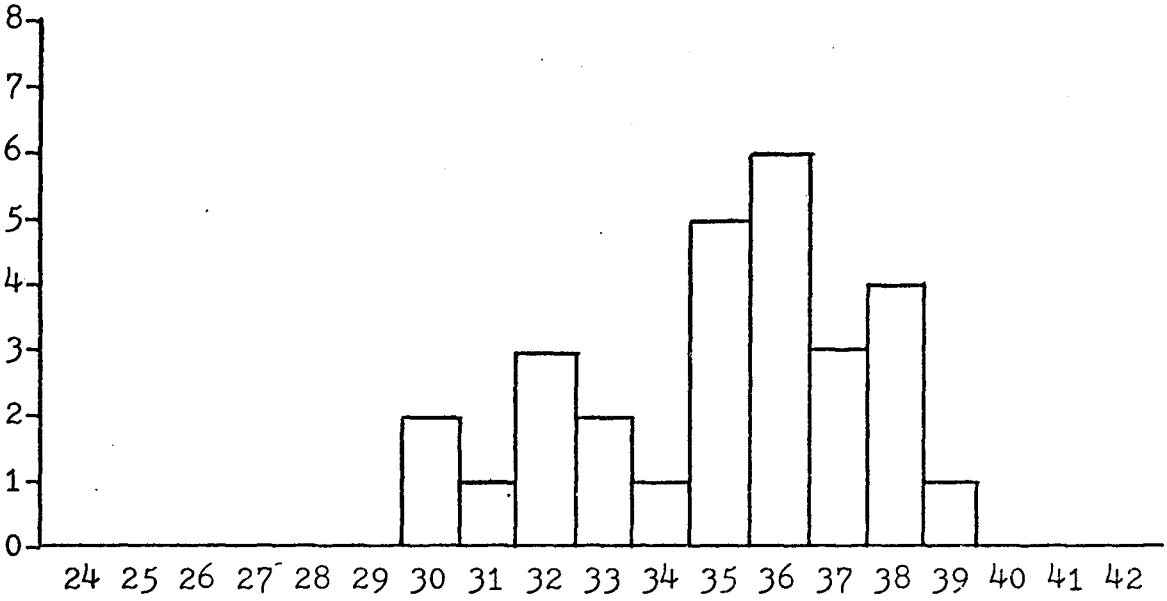

Figure 5 Scores of Chesapeake teachers' attitudes toward task catalogs

The scores of Chesapeake industrial arts teachers compute a mean of 35.00 and a standard deviation of 2.53. There are no unfavorable scores.

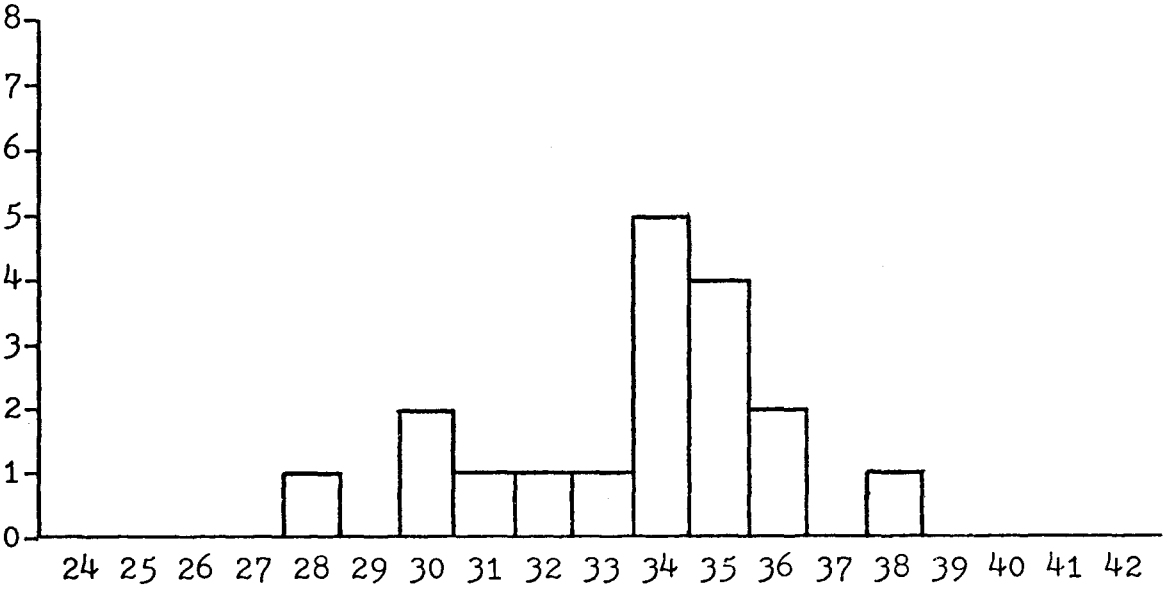

Figure 6 Scores of Portsmouth teachers' attitudes toward task catalogs

The scores of Portsmouth industrial arts teachers compute a mean of 33.56 and a standard deviation of 2.57. There is only one unfavorable score.

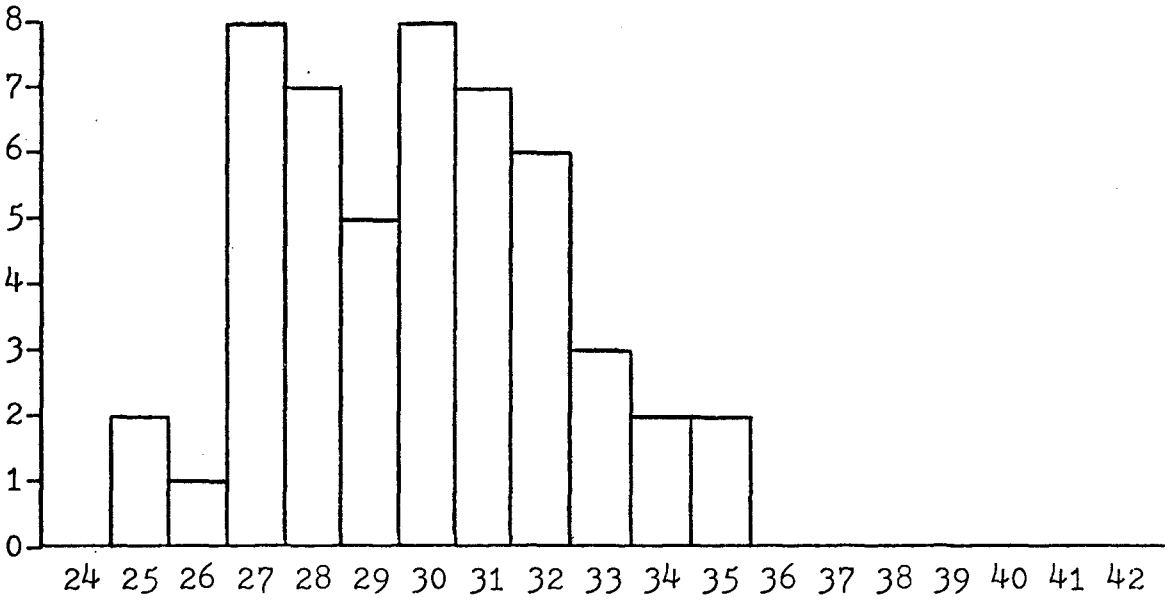

Figure 7 Scores of Norfolk teachers' attitudes toward task catalogs

The scores of Norfolk industrial arts teachers compute a mean of 29.59 and a standard deviation of 2.34. There are twenty-three unfavorable scores and eighteen favorable scores.

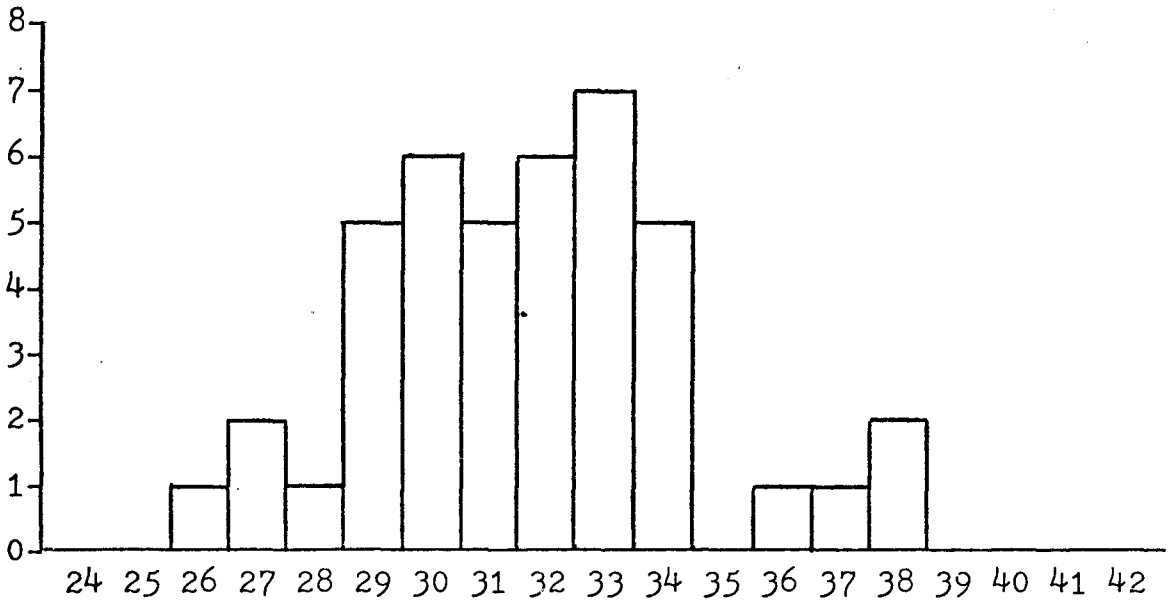

Figure 8 Scores of Virginia Beach teachers' attitudes toward task catalogs

The scores of Virginia Beach industrial arts teachers compute a mean of 31.67 and a standard deviation of 2.77. There are nine unfavorable scores and twenty-seven favorable scores.

The data reveals that there does exist a very slight favorable attitude among industrial arts teachers in the school systems of Chesapeake, Portsmouth, and Virginia Beach. The industrial arts teachers in Norfolk have a more neutral attitude.

In answer to question three, how does the attitudes of these teachers differ among the school systems surveyed, Table 1 and Table 2 readily displays only a slight variation in the attitudes toward each issue at hand.

Table 1 Comparison of measures of central tendency and standard deviations among school systems' teachers' attitudes toward competency-based education

School System	Median	Mode	Mean	Standard Deviation
Chesapeake	37.20	38	36.14	2.64
Portsmouth	38.63	38	37.17	1.93
Norfolk	32.63	31,32	32.24	2.59
Va. Beach	35.54	35	34.07	3.63

The school systems of Chesapeake and Portsmouth have industrial arts teachers that have a more favorable attitude toward competency-based education than those of Virginia Beach. Industrial arts teachers in Norfolk have a more neutral position on the issue.

Table 2 Comparison of measures of central tendency and standard deviations among school systems' teachers' attitudes toward the use of task catalogs

School System	Median	Mode	Mean	Standard Deviation
Chesapeake	35.50	36	35.00	2.53
Portsmouth	34.65	34	33.56	2.57
Norfolk	30.13	27,30	29.59	2.34
Va. Beach	31.25	33	31.67	2.77

The school systems of Chesapeake and Portsmouth have only a slightly more favorable attitude toward the use of task catalogs than the school systems of Virginia Beach and Norfolk.

Chapter 5

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

The purpose of this research study was to survey the attitudes of a distinct group of educators, industrial arts teachers in the Tidewater area of Virginia, toward two issues. First, how do they feel about competency-based education? Second, how to they feel about the possible use of catalogs of tasks to be used with existing industrial arts programs. Reviewing related literature leads one to believe that the two issues are accepted by the majority as being of great value to education in all areas. This study has not contradicted this idea, but the statistics have shown that the issues are not overwhelmingly accepted.

It is evident that the majority of industrial arts teachers surveyed are slighting in favor of competency-based education. They are also slighty in favor of the possible use of catalogs of tasks. But, there are also a number of these teachers who are undecided or slighty not in favor of both issues.

New ideas and innovations in education need to be favorably accepted by classroom teachers if their true value is to be seen. Either a course or well planned in-service would be needed to produce a more favorable attitude toward these issues among the industrial arts teachers, who are

undecided or not in favor of these ideas.

If a course or in-service program were developed and another study ran after teachers had participated, the data presented in this study could be used to evaluate the success of the program or course in changing the attitudes of the teachers.

Also, any school system in the surveyed area that might introduce the use of catalogs of tasks or competency-based education in industrial arts programs might find the results of this study valuable in implementing and administering their use.

Appendix A

1412 Kempsville Road
Chesapeake, Virginia
December 13, 1978

Dear _____:

I am conducting a survey of Industrial Arts teachers in the Tidewater area to determine their attitudes toward competency-based education and the possible use of catalogs of tasks for competency-based curriculums. Competency-based education requires students to master competencies in a subject area. Often catalogs of tasks are developed to help define what skills will need to be mastered and how, using criterion-referenced measures, students can be evaluated.

I sincerely hope you will be able to take five minutes to complete the survey and return it to me by _____.

Thank you again,

John E. Jones

Please check one response to each statement:

	Strongly agree	Agree	Undecided	Disagree	Strongly disagree
1. Students should be required to show competencies in all subject areas.	____	____	____	____	____
2. Competency-based education will require more effort and time from the teacher.	____	____	____	____	____
3. Students will know exactly what they must accomplish in a competency-based curriculum.	____	____	____	____	____
4. Students can work at their own pace in a competency-based curriculum.	____	____	____	____	____
5. Students will learn only what is necessary to accomplish a task.	____	____	____	____	____
6. Parents can be better informed of a student's progress.	____	____	____	____	____
7. Slow learners can be more readily identified in competency-based curriculums.	____	____	____	____	____
8. Teachers may be evaluated by the number of students that complete competencies.	____	____	____	____	____
9. Teachers may teach only the material necessary to meet competencies.	____	____	____	____	____
10. Competency-based curriculum may lead to segregation of fast and slow students.	____	____	____	____	____
11. Catalogs of tasks could be helpful in planning instruction.	____	____	____	____	____
12. Catalogs of tasks could be helpful in planning evaluation.	____	____	____	____	____
13. Teachers may use the catalogs of tasks as curriculum guides.	____	____	____	____	____
14. Teachers should decide what tasks and competencies are needed for a particular subject.	____	____	____	____	____

	Strongly agree	Agree	Undecided	Disagree	Strongly disagree
15. Teachers may be requested to use the catalogs.	____	____	____	____	____
16. Catalogs of tasks could be helpful in evaluating one's owm program.	____	____	____	____	____
17. Teachers always know what is needed by their students.	____	____	____	____	____
18. Industrial Arts teachers have been using competency-based education in class for many years.	____	____	____	____	____
19. Teachers do not like being told what should be taught and how to teach it.	____	____	____	____	____
20. Ideas obtained from other educators is always helpful.	____	____	____	____	____

School Division _____

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