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ABSTRACT

A project was conducted to determine whether a vocational student's version of the Affective Work Competencies Inventory could be prepared to measure the psychological constructs of values, habits, and attitudes. A revised inventory was developed and administered to 194 students in eight selected programs at Toledo vocational high schools (data processing, food service, retailing, animal care, horticulture, stenography, auto mechanics, and machinists). In addition, students' instructors provided evaluative data about each student. Student scores on the revised instrument were compared to teacher evaluations. Next, students were provided with feedback in the form of computer printouts on the levels of affective characteristics that both they and successful workers possessed. Finally, an evaluation instrument was administered to respondents to obtain information on the perceived usefulness and effectiveness of the instrument and feedback system. Data analysis revealed significant correlations for eight of the ten affective competency clusters investigated, and students believed that the inventory and feedback provided were helpful and informative. Recommendations called for research on the inventory as a placement tool and development of accompanying instructional materials. (Related studies on a work competencies guidance/instruction system: affective work competencies; and necessary work values, habits, and attitudes are available separately through ERIC--see note.) (MN)

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**MODIFICATION OF THE AFFECTIVE WORK
COMPETENCIES INVENTORY FOR USE WITH
VOCATIONAL STUDENTS**

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PREFACE

A primary interest of vocational educators has been the development of their student's psycho-motor skills in preparation for successful job performance. Much less emphasis has been placed on the acquisition of desirable work habits, values and attitudes. However, with advancing technology, there has been a shift from production orientation to service orientation in the world of work. Many workers are finding themselves in positions where appropriate habits and attitudes are important to job success. Wilson (1973) identified that most workers lose their jobs or fail to progress on their job because of their improper attitudes or habits rather than insufficient job skills.

Preliminary investigations have been conducted to determine the specific work habits, values and attitudes (Affective Work Competencies) that are considered important by industry and education (Kazannas and Beach, 1978). This research, funded by the Missouri State Department of Elementary and Secondary Education through the University of Missouri, identified, defined and investigated these competencies and then clustered them according to their common elements (See Tables I and II). An instrument to measure the Affective Work Competencies workers possessed was also prepared (Affective Work Competencies Inventory). A copy of the instrument is included as Appendix A.

Attempts to measure these competencies in vocational students have been limited; thus students and counselors have been without a measure of work attitudes that would indicate areas of desired improvement. In the Review of Research on Student Selection and the Prediction of Success in Occupational Education, Stock and Pratzner (1969) concluded that traditional predictors of success, including grades, interest inventories, and aptitude tests were inadequate. They suggested that more work be done in the area of identifying, measuring, and developing the non-intellectual variables of vocational behavior.

During the past decade, much attention has been given to career development and the world of work in education. Bailey and Stadt (1973) suggested that preparation for the world of work must become an integral component of the curriculum if we are to realize the potential of the total learning process. Accordingly, attention should be given to the identification and development of vocational students' affective competencies.

STATEMENT OF THE PROBLEM

The shift in occupational orientation, resulting from technological developments, is reflected in vocational high school training programs. At this level, as well as at other educational levels, programs need to be prepared to encompass the affective competencies related to work. Basic to this need for developmental programs is a need for an instrument that can be used to measure the degree of affective competency that each vocational student possesses. The information obtained with this instrument could help students identify their affective achievements or deficiencies and direct attention to the specific work attitudes, values, or habits that they need to improve.

To meet this need, the Affective Work Competencies Inventory that presently measures the work values, habits and attitudes possessed by workers was modified for use by vocational students.

TABLE I

**AFFECTIVE WORK COMPETENCIES (AWC)
LISTED BY INDUSTRY AND EDUCATORS***

1. Punctual	22. Careful	43. Creative
2. Cooperative	23. Cheerful	44. Considerate
3. Capable	24. Enthusiastic	45. Speedy
4. Follows directions	25. Independent	46. Influence
5. Responsible	26. Quality of work	47. Orderly
6. Emotionally stable	27. Intelligent	48. Patient
7. Initiative	28. Personal appearance	49. Poise
8. Honest	29. Alert	50. Interested
9. Dependable	30. Devoted	51. Curious
10. Helpful	31. Recognition	52. Forceful
11. Loyal	32. Leadership potential	53. Active
12. Adaptable	33. Courteous	54. Aware
13. Efficient	34. Pleasant	55. Resourceful
14. Ambitious	35. Responsive	56. Appreciative
15. Quality of work	36. Personality	57. Perceptive
16. Dedicated	37. Endurance	58. Achievement
17. Reliable	38. Tolerance	59. Compensation
18. Accurate	39. Shyness	60. Security
19. Persevering	40. Tender-mindedness	61. Variety
20. Judgement	41. Overall job performance	62. Working conditions
21. Concentrating	42. Healthy	63. Friendly

*AWC 1 through 31 were listed by both industry and educators (common)
 AWC 32 through 41 were listed only by industry and
 AWC 42 through 63 were listed only by educators

TABLE II
 CLUSTERED AFFECTIVE WORK COMPETENCIES

-
1. Ambitious
 2. Cooperative/Helpful
 3. Adaptable/Resourceful
 4. Considerate/Courteous
 5. Independent/Initiating
 6. Accurate/Quality of Work
 7. Careful/Alert/Perceptive
 8. Pleasant/Friendly/Cheerful
 9. Responsive/Follows Directions
 10. Emotionally Stable/Judgmental/Poised
 11. Persevering/Patient/Enduring/Tolerant
 12. Neat/Orderly/Personal Appearance/Manner
 13. Dependable/Punctual/Reliable/Responsible
 14. Efficient/Quality of Work/Achieving/Speedy
 15. Dedicated/Devoted/Honest/Loyal/Conscientious
-

PROCEDURES

An overall goal of the investigation was to determine whether or not a student's version of the Affective Work Competencies Inventory could be prepared to measure the psychological constructs of values, habits and attitudes.

In order to obtain this goal, requisite objectives were:

1. Modify the Affective Work Competencies Inventory for use with vocational students.
2. Administer the revised instrument to students enrolled in selected high school vocational programs.
3. Develop and administer to teachers, an individual student rating form as a criterion indicator for the modified inventory.
4. Develop and administer an instrument for the students to indicate their perceived usefulness of the inventory and feedback provided.
5. Analyze and evaluate the data collected and determine the effectiveness of the modified instrument in measuring the constructs of values, habits and attitudes.

Research Design

A single group experimental design was used in this study as identified procedures were completed. The first phase related to the content validity of the revised inventory. This was determined through item analysis, by a panel of experts including reading specialists, other professional educators and industry representatives.

The revised instrument was administered to the population sample, comprised of 194 students in eight selected programs at Toledo Vocational High Schools. These classes were representative of the major facets of Ohio's vocational program. The Director of Vocational Education for Toledo, in conjunction with program supervisors and other individuals involved with the research, identified the following classes: Data Processing, Food Service, Retailing, Animal Care, Horticulture, Stenography, Auto mechanics and Machinists. In addition, the students' instructors were requested to provide evaluative data about each student.

In an effort to compare the student's scores on the revised instrument with teacher evaluations, a teacher rating form was prepared. This form included sample statements from the revised inventory. One of these forms was completed for each student by his/her respective teacher, and the results were correlated with each of the respondent's scores on the revised inventory. It was hypothesized that a significant correlation would exist between this data, thus constituting the construct validity of the revised inventory.

After completing the inventory, students were provided with feedback in the form of a computer printout that indicated the levels of affective characteristics that they possessed, as well as the levels possessed by successful workers.

To examine a final research question, an evaluation instrument was prepared and administered to the respondents following the dissemination of the feedback information. Results of these evaluations provided information indicating the perceived usefulness and effectiveness of the instrument and feedback system implemented.

FINDINGS

The research procedures outlined in the preceding portions were completed and the following data were collected and analyzed. The procedures identified in this portion attempted to answer the research questions.

Analysis of Data

The three specific research questions investigated were:

1. Is the content of the revised instrument the same as that of the Affective Work Competencies Inventory?
2. Is the student's perception of his/her own affective behavior congruent with the teacher's?
3. Do the students believe the revised and instrument and feedback system will provide information beneficial to their career development?

Research Question 1

The first investigative concern was whether or not the modified version of the AWCI contained the same content at a level appropriate for vocational students. By reviewing and adjusting instrument items with a panel of experts, including educators and industry representatives, it was determined that the items contained in the revised instrument were congruent with the AWCI items, as well as representative of an appropriate experience and reading level.

Research Question 2

The second question, regarding construct validity of the student version of the AWCI, was to be determined by analyzing the correlation between the scores on the revised instrument and the teacher ratings of students' work habits and attitudes.

Table Number III
Correlation Coefficients Between Revised-AWCI Scores and Teacher Ratings
(N = 194)

<u>Revised-AWCI Clusters</u>	<u>Correlation Coefficients</u>
1. Ambitious	.330*
2. Cooperative/Helpful	.200*
3. Adaptable/Resourceful	.191*
4. Independent/Initiating	.363*
6. Pleasant/Friendly/Cheerful	.095
7. Responsive/Follows Directions	.158*
8. Careful/Alert/Perceptive	.084
12. Neat/Orderly/Personal Appearance/Manner	.177*
13. Dependable/Punctual/Reliable/Responsible	.237*
15. Dedicated/Devoted/Honest/Loyal/Conscientious	.255*

* Significant at .01 level ($p \leq .01$)

As indicated in Table III, substantial correlations exist between the respondents' inventory scores and a teacher evaluation of the respondent in eight of the ten clusters investigated. These correlations were significant at the .01 level.

Research Question 3

The final research question was concerned with the perceived worth of the instrument and feedback system as identified by the students. A rating form was used to determine the students' reactions to the inventory and feedback provided. This instrument, which included a five-point Likert scale, with "5" representing strong agreement, and "1" strong disagreement, was administered to the students. Results of the evaluation indicate that student reactions were positive concerning the usefulness and effectiveness of the inventory and feedback. Several students indicated that the printouts provided them with information about their attitudes that they had not previously given much thought. Others inquired about methods for improving or adjusting their work attitudes.

SUMMARY AND DISCUSSION

Summary

An analysis of the data indicated the significant correlations existed for eight of the ten affective competencies clusters investigated. Several factors could help explain the low correlations identified for the other clusters. In the development of the teacher rating form, sample statements from the revised inventory were used as criterion indicators. It was necessary to develop a condensed version of the instrument for teacher ratings, since every teacher completed one of these forms for all of their students. As a result, statements chosen for cluster 6 and 8 may not have been totally representative, causing low correlations to exist.

For student reactions concerning the effectiveness and usefulness of the inventory, descriptive information was gathered. These data indicated that students believed the inventory and feedback provided was helpful and informative.

Conclusions

Presuming that the sample population represents the target population, and that the findings are valid and reliable, the following conclusion may be drawn:

The Student Version of the Affective Work Competencies Inventory provides a reasonable measure for attainment of specific competencies related to work habits, values and attitudes. Also, students perceived that the information regarding the affective characteristics they possess is useful for identifying areas that need further development. It provides supplemental information helpful in their career development process. Identification and internalization of present attitudes are necessary if behavior is to be adjusted.

Implication For Further Research

Suggestions for further research pertaining to this study include:

1. Ascertain the effectiveness of the revised AWCI as a predictor of success in specific occupations.
2. Investigate the feasibility and effectiveness of the revised instrument as a

placement tool for use by guidance personnel in vocational schools who are constantly faced with determining appropriate placements for students.

3. Develop instructional materials to help students acquire competencies, as indicated by results on the revised AWCI. Learning modules relating to the 15 clusters could be of benefit to both vocational and non-vocational students.

During this study, the revised version of the Affective Work Competencies Inventory was proven to be a valid instrument for measuring constructs of students habits, values and attitudes that are related to work. Full implications for this inventory, in the areas of career development and decision making can only be realized through further research involving practical applications in the school.

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APPENDIX A

AFFECTIVE WORK COMPETENCIES INVENTORY

by H. C. Kazanas and D. P. Beach

The purpose of this inventory is to obtain information about the behavior and characteristics of working individuals. Your responses are strictly confidential (your name is *not* required on this inventory). please answer as truthfully and completely as possible each item in the inventory.

Directions: Circle the number that most nearly represents your work behavior. There are five choices that may be made for each statement:

1. Never 2. Seldom 3. Sometimes 4. Usually 5. Always

THERE ARE NO RIGHT OR WRONG ANSWERS. There is no time limit, but you should work as rapidly as possible. Please respond to every item in the inventory.

WHILE I'M AT WORK, I:	NEVER	ALWAYS	WHILE I'M AT WORK, I:	NEVER	ALWAYS
1. Acquire new skills in order to advance on the job.	1 2 3 4 5		33. Regulate activities in terms of available time.	1 2 3 4 5	
2. Help group members work together.	1 2 3 4 5		34. Make decisions without help.	1 2 3 4 5	
3. Make adjustments to avoid mistakes.	1 2 3 4 5		35. Try to eliminate errors.	1 2 3 4 5	
4. Make decisions without help.	1 2 3 4 5		36. Complain.	1 2 3 4 5	
5. Check my work for accuracy.	1 2 3 4 5		37. Follow regulations.	1 2 3 4 5	
6. Greet others.	1 2 3 4 5		38. Ignore an unsafe workplace.	1 2 3 4 5	
7. Follow step-by-step procedures as required.	1 2 3 4 5		39. Disturb others who try to work.	1 2 3 4 5	
8. Follow safety rules.	1 2 3 4 5		40. Maintain an even temperament.	1 2 3 4 5	
9. Leave workplace and equipment in good condition for others.	1 2 3 4 5		41. Complete work I start.	1 2 3 4 5	
10. Control my temper.	1 2 3 4 5		42. Plan my activities for the day.	1 2 3 4 5	
11. Stay with boring tasks until completion.	1 2 3 4 5		43. Begin work on time.	1 2 3 4 5	
12. Arrange equipment and materials.	1 2 3 4 5		44. Make suggestions about how to save time.	1 2 3 4 5	
13. Complete my work on time.	1 2 3 4 5		45. Lose interest in my work.	1 2 3 4 5	
14. Systematically plan work activities.	1 2 3 4 5		46. Set goals for self-improvement.	1 2 3 4 5	
15. Accept work assignments.	1 2 3 4 5		47. Involve new members into the workplace.	1 2 3 4 5	
16. Push my work on to other workers.	1 2 3 4 5		48. Adjust to various work situations.	1 2 3 4 5	
17. Help others when there is a need.	1 2 3 4 5		49. Work without close supervision.	1 2 3 4 5	
18. Adapt to new circumstances.	1 2 3 4 5		50. Maintain adequate and precise records.	1 2 3 4 5	
19. Am reminded by others to begin work.	1 2 3 4 5		51. Speak favorably about others.	1 2 3 4 5	
20. Recheck work after changes, corrections or additions.	1 2 3 4 5		52. Follow directions.	1 2 3 4 5	
21. Complain about my job.	1 2 3 4 5		53. Utilize personal protective equipment/clothing.	1 2 3 4 5	
22. Deviate from instructions.	1 2 3 4 5		54. Damage the property of others.	1 2 3 4 5	
23. Am inattentive on the job.	1 2 3 4 5		55. Get angry.	1 2 3 4 5	
24. Interrupt others.	1 2 3 4 5		56. Make corrections without complaining.	1 2 3 4 5	
25. Face problems objectively.	1 2 3 4 5		57. Keep my work area clean.	1 2 3 4 5	
26. Am impatient with co-workers who work slower than me.	1 2 3 4 5		58. Say that I will do something and then do not do it.	1 2 3 4 5	
27. Follow a daily schedule.	1 2 3 4 5		59. Make suggestions about how to save effort.	1 2 3 4 5	
28. Carry out instructions.	1 2 3 4 5		60. Caze out the window or at the clock.	1 2 3 4 5	
29. Increase my rate of work to meet job requirements.	1 2 3 4 5		61. Accept new training.	1 2 3 4 5	
30. Avoid work.	1 2 3 4 5		62. Work well as a group member.	1 2 3 4 5	
31. Set personal work/job goals.	1 2 3 4 5		63. Adjust to new workers and supervisors.	1 2 3 4 5	
32. Participate in group activities.	1 2 3 4 5		64. Take steps to complete work without constant supervision.	1 2 3 4 5	

Please continue on the back page

Grade or Occupation _____ Date _____

School or Firm _____ Address _____

APPENDIX B
Portion of the Revised-AWCI

DIRECTIONS: Circle the number that most clearly represents how you work in the lab.

SAMPLE: WHILE I'M WORKING IN THE LAB, I: Follow directions. 1 2 3 4 5 6 7

If you never follow directions, you would circle 1. If you follow directions only half the time, you would circle 4.

THERE ARE NO RIGHT OR WRONG ANSWERS. Please answer the questions as honestly as you can. As you read each sentence, think about how you act when you're in the lab, and circle the number that best fits.

WHILE I'M WORKING IN THE LAB, I:	NEVER	ALWAYS
1. Develop new skills to do better on the job.	1 2 3 4 5 6 7	
2. Help others work together.	1 2 3 4 5 6 7	
3. Make changes so I don't make mistakes.	1 2 3 4 5 6 7	
4. Make decisions without help.	1 2 3 4 5 6 7	
5. Check my work to be sure it's right.	1 2 3 4 5 6 7	
6. Work cheerfully.	1 2 3 4 5 6 7	
7. Follow all directions step by step.	1 2 3 4 5 6 7	
8. Follow safety rules.	1 2 3 4 5 6 7	
9. Take care of equipment & leave workplace neat.	1 2 3 4 5 6 7	
10. Control my temper.	1 2 3 4 5 6 7	
11. Finish my work even if it's boring.	1 2 3 4 5 6 7	
12. Keep equipment & materials in order.	1 2 3 4 5 6 7	
13. Finish my work on time.	1 2 3 4 5 6 7	
14. Plan my work for the day.	1 2 3 4 5 6 7	
15. Do what I am assigned.	1 2 3 4 5 6 7	
16. Leave my work for others to do.	1 2 3 4 5 6 7	
17. Help others when they need it.	1 2 3 4 5 6 7	
18. Adjust to changes.	1 2 3 4 5 6 7	
19. Have to be reminded to begin work.	1 2 3 4 5 6 7	
20. Check my work after corrections.	1 2 3 4 5 6 7	
21. Complain about my job.	1 2 3 4 5 6 7	
22. Do not follow directions.	1 2 3 4 5 6 7	
23. Do not pay attention to what I'm doing.	1 2 3 4 5 6 7	
24. Interrupt others.	1 2 3 4 5 6 7	
25. Look at all sides of a problem.	1 2 3 4 5 6 7	