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ABSTRACT

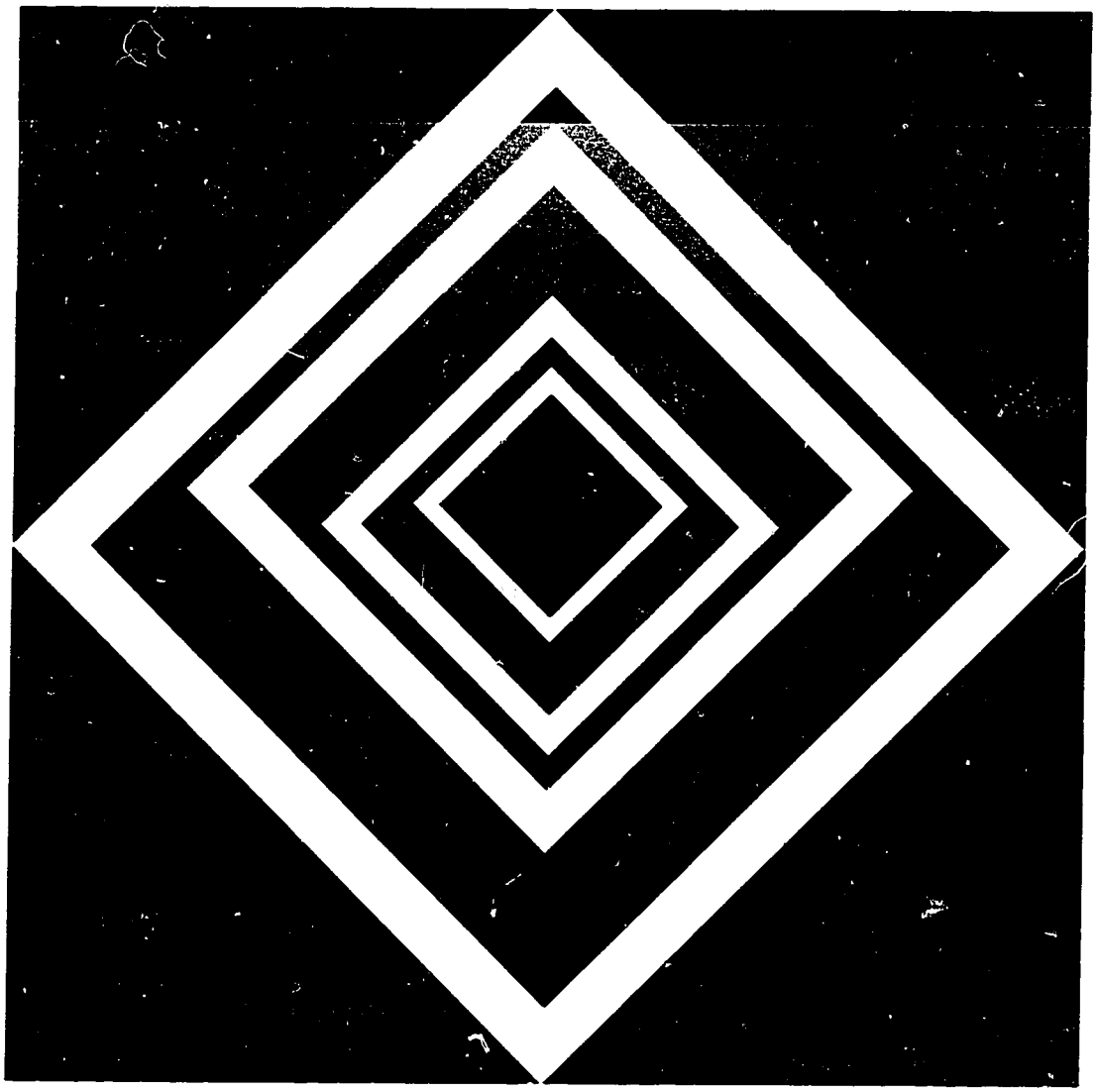
A statewide survey determined perceptions of the state staff and vocational administrators and teachers regarding time given to categories of vocational education outcomes and the educational level at which outcomes are appropriate. Differences existed between the secondary and postsecondary level regarding classroom time spent on identified outcomes. Almost two-thirds of postsecondary programs were devoted to development of technical skills compared to just over one-third of secondary programs. Educators at both levels indicated technical skills should receive less time, thus allowing more time to be spent on all other outcomes. Respondents felt that approximately 20 percent of the time should be spent on basic skills at both levels. At the secondary level, the remaining 50 percent of time would be distributed among affective, occupational survival, job search, and entrepreneurial skills. At the postsecondary level, 30 percent of the time would be spent on these outcomes. Respondents thought area vocational center programs should be similar to community college programs concerning the amount of time spent on outcomes. All outcomes appeared to be appropriate at secondary and postsecondary levels. At the secondary level a more even distribution of time across all outcomes was indicated. At the postsecondary level, focus would be on technical skills. (YLB)

Identification of Vocational Education Outcomes in Illinois

Illinois State Board of Education

Adult, Vocational and Technical Education

IDENTIFICATION AND ASSESSMENT OF VOCATIONAL EDUCATION OUTCOMES



Identification of Vocational Education Outcomes

Identification and Assessment of Vocational Education Outcomes

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INTRODUCTION

The National Commission on Excellence in Education has declared that our nation's education system has slipped into mediocrity at a time when the pace of international competition demands stronger schools and colleges than ever before. The commission stated that a change in this trend will require a commitment to excellence, with learners performing on the boundary of individual ability and with schools that set high expectations and goals for all learners. Although the commission recommended an increased emphasis on basic skills, including computer science, they also addressed the need for curriculum which provides programs that require rigorous effort in subjects that advance students' personal, educational and occupational goals. Curriculum such as vocational education is expected to complement the New Basics and demand the same level of performance.

Reports on the mediocrity of education clearly substantiate the need to re-examine the quality, standards and outcomes of vocational education. Shrinking resources for education have increased the need to assess which programs and services provide a reasonable return on the investment of federal, state, and local dollars allocated for

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vocational education purposes. Changing technology in the workplace has also increased the need for identifying appropriate vocational education outcomes and for assessing these outcomes to determine if programs are preparing students with the necessary skills to enter the labor market. Vocational education outcomes, which have been identified or used in the past, may no longer be appropriate or feasible. Outcomes must be identified which meet not only present needs but are adaptable to future directions. The identification of outcomes must also take into consideration the goals of individual programs, the influence of geographic regions and the grade level and specific population of students.

Utilizing educational outcomes as the focus of evaluation has commanded increased attention in recent years as the emphasis of evaluation has shifted from processes to products and impacts. Public Law 94-482, Education Amendments of 1976, mandated states to evaluate program effectiveness on the basis of two specific outcome criteria: employment in training-related occupations and employer assessment of the training and preparation for employment received by students. In addition, policy makers, educators and the general public are asking questions concerning the accountability of vocational education. Outcome evaluation, as part of the broader field of educational evaluation, is one means to answer such questions.

Vocational education outcomes may be broadly defined as the consequences of vocational education programs. Darcy (1979) suggests that all outputs, products, consequences, effects, results, and the impact of vocational programs are recognized as outcomes whether they

are intended or unintended, positive or negative, short-term or long-term, economic or non-economic, direct or indirect. Darcy further states that outcomes are generally multidimensional. For example, an outcome may be a mixture of affective and cognitive or education and economic consequences. While such outcomes may be easily observable or quantifiable, others may be perceived more subjectively.

This is a distinction between expected or proposed outcomes and actual Outcomes. Farley (1979) calls the former "outcome statements" or "outcome questions" and the latter "outcomes." To evaluate vocational education outcomes, one must first identify and verify appropriate outcome statements. Numerous lists of outcome statements for vocational education are available. For example, in a study conducted by Darcy, Holland and Farley (1979), 252 outcome statements were compiled from the literature and meetings held with national, state and local leaders in vocational education. Since this list encompasses all possible outcomes, the task becomes one of limiting and verifying the most appropriate outcomes.

Models for the process of limiting and verifying outcome statements are also available in the literature. For example, in the Vocational Education Study (NIE, 1981), the outcomes of participating in vocational education were identified from the goals that are stated directly or are implicit in Federal legislation since 1963 or in reports of the special bodies that influenced the legislation of 1963 and 1968. Six outcomes were selected and examined through students' reports of their curriculum and occupational specialty.

Another verification approach was utilized at a conference on "Outcomes for Vocational Education," sponsored by the National Center

for Research in Vocational Education, August, 1982. At this conference, a pre-selected group of outcomes were examined from a sociological, philosophical, economical, historical, psychological and futuristic viewpoint. Papers on these viewpoints were presented and discussed resulting in the verification of five key vocational education outcomes.

In the study, "Statewide Perceptions of Vocational Education Outcomes," (Wentling and Barnard, 1984) a survey approach was used as one component in the process of identifying appropriate student outcomes of education for employment programs in Illinois. This study was designed with broad input from across the state to determine what outcomes are currently emphasized and what outcomes should be emphasized. A questionnaire was sent to approximately 1500 representatives of the following groups: vocational administrators; teachers; and students in comprehensive high schools, area vocational centers, and community colleges; state-level vocational education staff; vocational teacher educators; state advisory council for vocational education; career education and guidance center staff; and business and industry. Respondents were asked their perception of the emphasis "that is" and "that should be" given to 45 outcomes identified from the literature.

A factor analysis revealed that 36 outcomes were grouped into six factors for "current emphasis" and 32 outcomes were grouped into five factors for "should be emphasis." Factor means were then calculated to determine the perceived emphasis on each factor. Table 1 contains the factors and factor means of all respondents for current and should be emphasis. Respondents indicated their

TABLE 1

FACTOR MEANS

Factor	Current x	Should Be
Affective Job Skills	3.502	4.400
Technical Skills	3.497	4.199
Occupational Survival Skills	3.466	4.397
Job Search Skills	3.266	4.260
Basic Skills	3.114	4.250
Entrepreneurial Skills	3.026	Not identified as a factor

perception of the emphasis on each outcome on a scale of 1 (no emphasis) to 5 (much emphasis). For current emphasis, respondents felt that Affective Job Skills, Technical Skills and Occupational Survival Skills receive the most emphasis, followed by Job Search Skills, Basic Skills, and Entrepreneurial Skills. In general, responses indicated that a moderate emphasis is currently placed on all factors. Affective Job Skills and Occupational Survival Skills were identified as those factors which should receive the most emphasis, followed by Job Search Skills, Basic Skills and Technical skills. Overall, respondents indicated that a fairly high emphasis should be given to all factors.

A comparison of the rank order of factors between "current" and "should be" emphasis indicated a similar order of all factors except Technical Skills. In addition, Entrepreneurial Skills was not identified as a factor for "should be" emphasis and, therefore, was

not ranked. Technical Skills were ranked second under "current" emphasis, indicating that more emphasis is placed on the development of Technical Skills than Survival Skills, Job Search Skills, Basic Skills, and Entrepreneurial Skills. Technical Skills were ranked fifth for "should be" emphasis, which indicated that respondents felt Technical Skills should receive less emphasis than other factors. Yet, the higher mean scores of all factors for "should be" emphasis suggests that respondents feel that all factors, except Entrepreneurial Skills, should receive more emphasis than is currently given.

The present survey is another component in the process of identifying appropriate vocational education outcomes in Illinois. The purposes of this study were to determine the percentage of classroom time "that is" and "that should be" given to each factor identified in the previous study and to determine the educational level at which the outcomes are important. Identifying the differences between "what is" and "what should be," as well as the differences between perceived emphasis on outcomes and the percentage of time given to outcomes will provide a means for determining in-service needs and possible curriculum needs.

Method

Sample

Since the intent of this survey was to gain information on classroom practices, it was desirable to receive input from persons most involved with classroom teaching and policymaking. Therefore, the population for this study consisted of state-level vocational education staff and vocational administrators and teachers in

comprehensive high schools, area vocational centers, and community colleges. The sample consisted of those state-level staff, administrators and teachers who responded to the outcomes survey conducted as part of the study, "Statewide Perceptions of Vocational Education Outcomes," from which the factors were identified. Table 2 contains a summary of the return rate by group.

Instrument

The six categories of outcomes identified in the previous study formed the basis of the survey instrument. The following categories were identified and described: Technical Skills, Job Search Skills, Affective Job Skills, Occupational Survival Skills, Entrepreneurial Skills, and Basic Skills. The survey instrument for teachers and administrators was a postcard questionnaire. Respondents were asked to indicate the approximate percentage of time "that is" and "that should be" given to each category of outcomes in their program. An option was given to include other outcomes.

The survey instrument for the state-level staff differed in that respondents were asked to indicate the percentage of time "that is" and "that should be" given to each category of outcomes in a secondary level program and in a post secondary level program. The categories of outcomes were described twice on a one page questionnaire so that state-level staff respondents could indicate the percentages for the two educational levels.

Procedure

The questionnaires were mailed with a cover letter signed by the Project Director. Included with the state-level staff questionnaires was a self-addressed stamped envelope for its return. Postcards were

TABLE 2

RETURN OF QUESTIONNAIRE

Group	Number Sent	Number Returned	% Returned
Comprehensive High Schools			
Administrators	90	47	52.22
Teachers	85	44	51.76
Area Vocational Centers			
Administrators	25	20	80.00
Teachers	48	15	50.00
Community Colleges			
Administrators	27	23	85.19
Teachers	48	18	37.50
State-Level Staff	46	27	58.70
Total	351	194	59.34

also self-addressed and stamped. Questionnaire data were collected during October, 1984.

Data Analysis

Factor means were calculated for each major group of respondents. T-tests were conducted to determine if there were significant differences in the factor means between groups.

Findings

Analysis of Differences Between Secondary and Post Secondary Level

The traditional delivery systems for public vocational education at the secondary level and post secondary level have been comprehensive high schools and community colleges, respectively. Therefore, an examination of the responses of representatives of these agencies can provide information on the educational level at

which the identified outcome categories are appropriate. In order to analyze differences between the two educational levels, factor means were calculated for the percentage of time "that is" and "that should be" given to each category of outcomes. T-tests were then conducted to determine if there were significant differences between secondary and post secondary level. T-scores were tested at the .05 level of significance.

High school and community college means, standard deviations, and T-values for current percentage of time given to each factor are presented in Table 3.

The percentage of time currently spent on Technical Skills was significantly greater in community college programs than in comprehensive high school programs. It appears that just over a third of classroom time is devoted to the development of Technical Skills within high school programs while almost two-thirds of the time is spent on Technical Skills within community college programs. In contrast, a significantly greater percentage of high school program time is currently given to the development of Job Search Skills, Affective Job Skills, and Occupational Survival Skills, than in community college programs. There was no significant difference between high schools and community colleges in the percentage of time spent on Entrepreneurial Skills and Basic Skills.

The rank order of outcomes from greatest to least percentage is very similar for both high school and community college programs. At both educational levels, the greatest percentage of time is currently spent on Technical Skills, followed by Basic Skills, Affective Job Skills, and Occupational Survival Skills. At the high school level,

TABLE 3

MEANS, STANDARD DEVIATIONS, AND T-VALUES FOR CURRENT TIME IN HIGH SCHOOL AND COMMUNITY COLLEGE PROGRAMS

	High School		Community College		T-Value
Factor	$\bar{x}$	Sd	$\bar{x}$	Sd	
Technical Skills	36.56	25.89	61.48	19.94	-5.96*
Job Search Skills	9.80	8.51	3.93	3.46	4.66*
Affective Job Skills	13.52	9.54	7.34	6.28	4.16*
Occupational Survival Skills	12.06	7.83	6.98	5.63	4.10*
Entrepreneurial Skills	6.89	5.73	4.61	5.96	2.28
Basic Skills	18.00	15.38	15.90	11.42	0.85

*(p .05)

slightly more time is spent on Job Search Skills than Entrepreneurial Skills, while the reverse is true at the community college level. Overall, there appears to be more time spent on all outcomes except Technical Skills at the high school level than at the community college level.

The means, standard deviations and T-values for the percentage of time that "should be" spent on each outcome in high schools and community colleges are presented in Table 4. Significant differences existed for both Technical Skills and Affective Job Skills. Respondents from community colleges indicated a significantly greater percentage of time should be spent on Technical Skills (53%) than did respondents of high schools (32%). High school respondents indicated a significantly greater percentage of time should be given to Affective Job Skills than did community college respondents. The percentage of time which should be given to all other factors were similar for both educational levels.

The rank order of outcomes from most to least percentage remained the same for "should be" as it was for "current" for both high school and community college programs. The primary difference was that respondents indicated that less time should be spent on Technical Skills at both educational levels, thus allowing more time to be spent on all other outcomes.

Analysis of Differences Between State Staff and Local Educators

The state level vocational education staff has the opportunity to provide guidance to local programs and to provide input into curriculum and policy making decisions. Therefore, it was important to determine if differences existed between state-level staff and

TABLE 4

MEANS, STANDARD DEVIATIONS, AND T-VALUES FOR "SHOULD BE"

TIME IN HIGH SCHOOL AND COMMUNITY COLLEGE PROGRAMS

	High School		Community College		T-Value
Factor	$\bar{x}$	Sd	$\bar{x}$	Sd	
Technical Skills	31.58	21.84	53.37	16.64	-6.19*
Job Search Skills	10.33	6.72	6.73	8.39	2.86
Affective Job Skills	14.70	7.63	11.73	11.73	3.39*
Occupational Survival Skills	14.14	6.89	9.34	11.28	3.24*
Entrepreneurial Skills	8.84	6.26	8.20	11.47	0.44*
Basic Skills	20.44	15.48	19.15	12.89	0.51

*(p .05)

local educators concerning their perception of appropriate outcomes at the secondary and post secondary level. When responding to the survey, state-level staff provided their perception of the percentage of time which should be given to outcome categories at both the secondary and post secondary level. T-tests were conducted to determine if there were differences in their perceptions of local educators at both educational levels.

Table 5 contains the means, standard deviations and T-values of state and local educators' responses concerning the percentage of time which should be given to outcomes at the secondary level. There were no significant differences between the two groups, indicating that state and local educators are in agreement on the amount of time which should be given to the identified outcomes at the secondary level.

The means, standard deviations, and T-values for state and local educators' responses for the post secondary level are presented in Table 6. Once again, there were no significant differences between the two groups, indicating agreement between state staff and local educators' perception of the percentage of time that should be spent on identified outcomes at the post secondary level.

Analysis of Differences Between Area Vocational Centers and Secondary/Post Secondary Level

The area vocational center is a specialized form of secondary education. Although it is considered to be a part of the secondary level education, its mission may be more closely aligned with that of the community college. Therefore, T-tests were conducted to determine if there were differences between perceptions of area

TABLE 5

MEANS, STANDARD DEVIATIONS, AND T-VALUES OF STATE AND LOCAL EDUCATORS FOR "SHOULD BE" TIME AT SECONDARY LEVEL

	High School		State-level		T-Value
Factor	$\bar{x}$	Sd	$\bar{x}$	Sd	
Technical Skills	31.58	21.84	38.44	17.75	-1.47
Job Search Skills	10.33	6.72	8.11	5.32	1.54
Affective Job Skills	14.70	7.63	13.59	9.39	0.60
Occupational Survival Skills	14.14	6.89	13.41	8.77	0.44
Entrepreneurial Skills	8.84	6.26	7.63	4.62	0.92
Basic Skills	20.44	15.48	19.74	12.82	0.21

TABLE 6

MEANS, STANDARD DEVIATIONS, AND T-VALUES OF STATE AND LOCAL EDUCATORS FOR "SHOULD BE" TIME AT POST SECONDARY LEVEL

	Community College		State-level		T-Value
Factor	$\bar{x}$	Sd	$\bar{x}$	Sd	
Technical Skills	53.57	16.64	55.78	18.39	-0.57
Job Search Skills	6.73	8.39	6.22	3.75	0.30
Affective Job Skills	11.73	11.73	8.00	4.14	1.60
Occupational Survival Skills	9.34	11.28	8.00	4.17	0.60
Entrepreneurial Skills	8.20	11.47	10.85	7.00	-1.09
Basic Skills	19.15	12.89	10.15	7.75	3.30

vocational center representatives and the perceptions of high school and community college representatives. Table 7 contains the means, standard deviations and T-values for area vocational center, high school, and community college representatives' responses for the percentage of time which is currently spent on the outcomes. There was a significant difference in the amount of time spent on Technical Skills between area vocational centers and high schools. It appears that a greater percentage of time is spent on Technical Skills in area vocational center programs than in high school programs. There were no significant differences in the amount of time spent on the outcomes between area vocational centers and community colleges.

The means, standard deviations and T-values for area vocational center, high school and community college representatives' responses for the percentage of time which should be given to each outcome are presented in Table 8. Area vocational center respondents indicated that a greater percentage of time should be spent on Technical Skills, than did high school respondents. There were no significant differences between area vocational center and community college respondents concerning their perception of the amount of time that should be spent on the identified outcomes. It is apparent that area vocational center and community college programs are similar regarding time devoted to identified outcomes and that respondents of these programs felt that this similarity should remain. Respondents also indicated that area vocational center programs should continue to focus more on Technical Skills than high school programs.

TABLE 7

MEANS, STANDARD DEVIATIONS, AND T-VALUES FOR CURRENT TIME

IN AREA VOCATIONAL CENTERS, HIGH SCHOOLS AND COMMUNITY COLLEGES

	AVC		High School		Community College		T-value HS/AVC	T-value CC/AVC
Factor	$\bar{x}$	Sd	$\bar{x}$	Sd	$\bar{x}$	Sd		
Technical Skills	56.26	22.19	36.56	25.89	61.48	19.94	-3.96*	1.11
Job Search Skills	6.22	5.08	9.80	8.51	3.93	3.46	2.32	-2.41
Affective Job Skills	10.10	6.85	13.52	9.54	7.34	6.28	0.95	-1.89
Occupational Survival Skills	11.84	10.03	12.06	7.83	6.98	5.63	0.13	-2.75
Entrepreneurial Skills	4.19	3.55	6.89	5.73	4.61	5.96	2.60	0.38
Basic Skills	10.71	6.63	18.00	15.38	15.90	11.42	2.70	2.43

*(p .05)

TABLE 8

MEANS, STANDARD DEVIATIONS, AND T-VALUES FOR "SHOULD BE" TIME

IN AREA VOCATIONAL CENTERS, HIGH SCHOOLS, AND COMMUNITY COLLEGES

	AVC		High School		Community College		T-value HS/AVC	T-value CC/AVC
Factor	$\bar{x}$	Sd	$\bar{x}$	Sd	$\bar{x}$	Sd		
Technical Skills	49.15	18.86	31.58	21.84	53.37	16.64	-4.17*	1.07
Job Search Skills	7.40	4.09	10.33	6.72	6.73	8.39	2.40	-0.44
Affective Job Skills	12.25	7.51	14.70	7.63	11.73	11.73	1.61	-0.52
Occupational Survival Skills	12.90	9.81	14.14	6.89	9.34	11.28	0.79	-1.50
Entrepreneurial Skills	5.25	2.83	8.84	6.26	8.20	11.47	3.26	1.51
Basic Skills	12.82	6.49	20.44	15.48	19.15	12.89	2.81	2.69

*(p .01)

Summary and Conclusions

When examining the perceptions of local educators concerning classroom time currently spent on identified outcomes, it is evident that differences exist between the secondary and post secondary level. The main difference appears to be related to the amount of time spent on Technical Skills. Almost two-thirds of post secondary programs appear to be devoted to the development of Technical Skills, compared to just over a third of secondary programs. This allows more time to be spent on other outcomes within secondary programs.

When asked the amount of time that should be spent on the outcomes, educators at both the secondary and post secondary level indicated that Technical Skills should receive less time than is currently given and more time should be spent on all other outcomes. Although respondents thought that less time should be given to Technical Skills, they still felt that the greatest percentage of program time should be devoted to Technical Skills. Overall, respondents indicated that community college programs should continue to spend more time on Technical Skills than high school programs, but should also increase the time spent on other outcomes. Respondents also felt that approximately 20 percent of the time should be spent on Basic Skills at both educational levels. At the secondary level, the remaining 50 percent of time would be distributed among Affective Job Skills, Occupational Survival Skills, Job Search Skills and Entrepreneurial Skills. At the post secondary level, 30 percent of the time would be spent on these outcomes.

When comparing area vocational center programs to comprehensive high school and community college programs, it is apparent that

respondents thought that area vocational center programs should be similar to community college programs concerning the amount of time spent on the outcomes. Again, this means that more time should be spent on the development of Technical Skills than in high school programs.

Overall, it appears that all of the identified outcomes are appropriate at both the secondary and post secondary level. A more even distribution of time across all outcomes at the secondary level would indicate that students should receive a background in all of these skills. At the post secondary level, the focus should be on Technical Skills, supplemented by information related to the other outcomes.

It is of interest to note that there is a discrepancy between the results of this survey and the first survey of this study. When respondents were asked the amount of emphasis that should be placed on outcomes, they indicated that Technical Skills should receive less emphasis than the other outcomes identified. Yet, when asked the percentage of time that should be spent on the outcomes, they indicated that Technical Skills should receive the greatest percentage of time. It is likely that while vocational educators believe there should be less emphasis on Technical skills, when forced to make a time commitment, they have gone with a more traditional mode of delivery. This may be due, in part, to a lack of educators' experience and/or curriculum materials for teaching in the areas such as Affective Job Skills or Survival Skills. It appears there is a willingness to change the emphasis in vocational education

programs, yet perhaps not the knowledge of how to implement this change.

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