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INITIAL ANALYSIS OF YOUTH APPRENTICESHIP PROGRAMS IN GEORGIA

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Abstract

Youth apprenticeship programs have been viewed by many educators and policy makers as a viable option for the preparation of youth for transition from school to work. These programs are designed to combine structured paid work and training on-the-job with related classroom instruction. As these programs evolve, evaluation and assessment become critical to informing the development process, assessing program impact, and maintaining support for innovation. The purpose of this study was to assess the implementation of the initial youth apprenticeship programs funded in the state of Georgia and to provide data relevant to the development of these program on a larger scale.

Spurred by changes in the United States and world economies and the educational environment there has been increased attention placed on the importance of preparing youth for the workforce of the future. Of major importance to educators and policy makers is how to promote the transition from education to high skilled employment for all students, and particularly those who are unlikely to attain a baccalaureate degree.

The need to prepare more workers with the skills and knowledge to sustain a high-wage economy has focused attention on youth apprenticeship as a policy strategy for improving the school-to-work transition for many youth in the United States. Youth apprenticeship has been defined as a "learning program for young people, age 16 and older, that integrates on-the-job learning with school-based instruction, that bridges high school and postsecondary school, and that results in both academic credentials and certification of mastery of work skills" (Jobs for the Future, 1993, p. 1).

Proponents point to European youth training systems as the source of many of the components underlying an American style youth apprenticeship, such as:

1. Significant coordination between employers, schools, labor, and government;
2. Integration of school- and work-based learning experiences;
3. Broadly recognized certification of academic and occupational skill mastery;
4. A coherent system that serves a significant number of youth; and
5. High-skill, high-wage career routes that do not require a bachelor's degree.

Jobs for the Future (1993) has identified the following key design elements of youth apprenticeships: (a) employers provide both paid work experience and structured work site learning; (b) schools integrate academic and vocational learning; (c) school and workplace learning are coordinated and integrated; (d) high school and postsecondary programs are articulated and last at least 2

years; (e) completers receive widely recognized credentials of both academic and occupational skills mastery; and (f) programs are governed by broad coalitions of institutional partners.

Georgia Legislation

In 1992 the Georgia General Assembly passed Georgia Code #20-2-161.2 establishing the legal basis for developing youth apprenticeship programs in the state. This law directed the Georgia Department of Education, in collaboration with the Departments of Labor and Technical and Adult Education, to develop policies, procedures, and standards necessary to implement youth apprenticeship programs for all state school systems by 1996.

This legislation specified the goals and distinct elements for youth apprenticeship programs as they were to be implemented in the state:

1. Any 11th- or 12th-grade student or student aged 16 or over may enroll in a youth apprenticeship program which is offered at a public school.
2. The student is to be granted release time from the school to work as an apprentice for any business enterprise which is approved by the Department of Education as a qualified employer.
3. The student will receive secondary credit for the youth apprenticeship program.

It was further stipulated that the youth apprenticeship program must include the following work-based and school-based components:

1. A detailed training plan between employer and apprentice that identifies specific work tasks that will develop workplace competency;
2. A minimum of 144 classroom hours of related academic instruction and training;
3. A minimum of 2,000 hours of on-the-job training;
4. A progressive wage schedule established by the participating employer;
5. On-site evaluation of the student's performance;
6. Training remediation as necessary at the school site;
7. A broad range of skills which focus on manufacturing and engineering technology, administration and office technology, and health care; and
8. Structural linkage between secondary and postsecondary components of the program leading to the awarding of a high school diploma and postsecondary certification of occupational skills.

In developing guidelines for youth apprenticeship programs in the state, the Department of Education expected all school systems to implement programs that have a well-defined occupational focus beginning in grade 11, but that are sufficiently broad so that students can, at the end of high school, choose from a variety of career options, including employment and postsecondary education. The programs would also have coordinated school- and work-based components and lead to both a high school diploma and an approved certificate of occupational skill mastery. In addition, school systems were expected to ensure that decisions about program design were made by a broad-based group of stakeholders including teachers, counselors, and administrators from secondary and postsecondary institutions, as well as representatives from the employer and labor communities. Systems were also to coordinate school and work-site learning through joint planning efforts of teachers and employers in developing the school-based curricula.

Purpose and Objectives of the Study

The purpose of this study was to assess the implementation of the initial youth apprenticeship programs funded in the state of Georgia, including school- and work-based elements, and information relevant to the development of youth apprenticeship programs on a larger scale. Specific objectives required to fulfill this purpose were to:

1. Describe youth apprenticeship programs funded under Georgia legislation; and
2. Identify effective practices and strategies for overcoming commonly encountered barriers.

Methodology

To achieve the purpose and objectives of this study a youth apprenticeship program data reporting system was developed. This system documents the number of youth apprenticeship programs, their characteristics, the institutions involved in youth apprenticeship consortia, the extent to which the programs include the full array of ideal features, the populations they serve, and the approaches the local school districts use to measure the progress of program development. Additionally, the system identifies approaches taken by local school districts in implementing major components of the youth apprenticeship concept.

Population

Twenty-four school districts received initial implementation grants to establish youth apprenticeship programs. These pilot programs in youth apprenticeship were selected through a competitive grant process and were awarded implementation grants by

the Georgia Department of Education. Two school districts joined together and formed a School-to-Work Consortium, thus 23 school districts provided data for this study, but not all of these school districts provided complete data since they were in varying implementation phases.

Data Collection

Profile baseline data on youth apprenticeship programs in the state was collected from youth apprenticeship program administrators. Five initial data collection surveys were developed and provided to each youth apprenticeship administrator for completion. Data collection instruments were (a) Youth Apprenticeship Program Information Form, (b) Youth Apprenticeship Program and School Enrollment Information Form, (c) Initial Participant Survey and Consent Form, (d) Description of the Youth Apprenticeship Program Survey, and (e) Employer Identification Chart (Smith, Bouchell, Clark, & DeHart, 1995).

The primary objective of this initial data collection was twofold. First, to provide a clear factual documentation of the number, characteristics, and development of youth apprenticeship programs at the local level. Second, to serve as a basis for identifying effective practices in the implementation of youth apprenticeship programs that can be documented.

Two additional instruments and on-site visits were utilized in the data collection process. An interim survey form was used to update student files and to determine the degree of progress that each site had made in developing various aspects of the program. An end-of-the-year survey form and a student follow-up form for graduating high school seniors was administered for the purpose of maintaining a longitudinal data base to measure the progress of students as they move to the postsecondary level. On-site visits were conducted at 12 of the initial sites. Sites were chosen by a random selection method and a member of the project staff conducted focus group interviews with school administrators and teachers, students, and employers to determine their perceptions of the program.

Data were collected from individual program administrators reflecting their responses to the project staff during 1994-1995. Accuracy of the data rests with program administrators who reported the data. All attempts for accuracy of information were made by the project staff including verification of information with individual youth apprenticeship program administrators.

Data Analysis

The data presented in this study consists of descriptions and analyses of initial youth apprenticeship programs, rather than measurements of program impacts and outcomes since the programs are in the initial stages of development. Program impact and outcomes will not be available until a cohort of students has completed the entire cycle of the program and has entered into the full-time workforce in the next 3 to 4 years.

Results

Results from this study are organized to provide a description of youth apprenticeship programs at the local level, characteristics of students enrolled in the program, and implementation of key components of the program.

State Youth Apprenticeship Program Profile

Individual youth apprenticeship program development is at the discretion of each local school district and the youth apprenticeship program administrator. Each school district is responsible for the selection and hiring of a youth apprenticeship coordinator to carry out the procedures for implementing the program. These individuals were provided a one-week initial training session and participated in semi-monthly inservice meetings conducted by personnel from the Georgia Departments of Education and Technical and Adult Education with assistance from a faculty member from the Department of Occupational Studies at the University of Georgia. Youth apprenticeship coordinators also participated in special workshops conducted throughout the school year in which individuals implementing youth apprenticeship programs in other states provided their perspective.

Youth Apprenticeship Program Partners

Youth apprenticeship programs require partnerships among secondary schools, employers, and postsecondary institutions (2-year institutions such as community colleges and technical institutes, as well as 4-year colleges and universities). High schools or school districts are instrumental in initiating and implementing youth apprenticeship programs. These secondary schools, in most cases, have been primarily involved in developing the school-based curricula for the youth apprenticeship programs and in recruiting and teaching students, after a program is operational. A total of 61 secondary comprehensive high schools are participating in the state's youth apprenticeship programs.

A majority of sites have developed or are in the process of developing programs with postsecondary education components that are formalized through articulation agreements between the high schools and postsecondary education institutions. The predominant educational partners identified by youth apprenticeship program coordinators are the state's technical institutes. This relationship is due to the need for increasing a student's opportunity to pursue technical education and a 2-year degree or certificate.

Career Focus

In establishing a local youth apprenticeship program, appropriate career clusters should be developed based on secondary and primary data on employment opportunities within local businesses and industries. The occupational career clusters designed for programs of study in Georgia include (a) Business, Marketing and Information Management (i.e., administrative services, finance, retailing, information management, entrepreneurial); (b) Environmental and Agricultural Sciences (i.e., biotechnology, environmental restoration, aquacultural); (c) Health and Medical (i.e., nursing, radiation therapy, occupational safety/health); (d) Human Services (i.e., child/elder care, education, parenting, law enforcement); and (e) Technical and Engineering (i.e., manufacturing, telecommunications, transportation).

The majority ($n = 14$) of the implemented youth apprenticeship programs did not target one particular industry or occupational cluster, but rather opted to provide preparation for students for a variety of occupations (referred to as multi-occupational). Of those targeting a specific career cluster, Technical and Engineering ($n = 7$) was the most prominent.

Student Participation in Youth Apprenticeship Programs

Most of the youth apprenticeship programs that have been implemented so far have been small in terms of numbers of students enrolled. Although sites may be expected to increase the number of students served, there may not be a large influx in student enrollment due to the difficulty of obtaining and maintaining employer commitments to provide jobs and work-based learning opportunities.

Student Eligibility Criteria

Even though each youth apprenticeship program is open for all students to apply for the program, not all students who actually applied to participate in the local youth apprenticeship programs were accepted. Reasons for not accepting potential students included the unavailability of training sites/slots within local businesses or industries within a student's selected career focus area or potential students did not meet eligibility criteria for the program.

Eligibility requirements, in general, result in relatively higher-achieving students who have been successful in school and who are likely to be seen as desirable workers by employers being enrolled in the youth apprenticeship program. A majority of the youth apprenticeship coordinators have developed specific eligibility criteria based on input from local business and education program partners. The most common eligibility criteria cited were an accumulative grade point average (2.50 on a 4.00 scale or a "C" average on all course work), attendance record, recommendations from local teachers, and a stated career interest.

Student Enrollment

Initial enrollment in the 23 programs was 359 students, but as with any program, some students were likely to drop out. A total of 56 students who were initially enrolled in September left the program prior to the February enrollment verification period as reported by the youth apprenticeship coordinators. The predominant reasons cited were student difficulty in keeping up academically or poor attendance in school. Thus student enrollment in youth apprenticeship programs as of the February enrollment verification date totaled 303 students.

The student population was composed of 130 males (43%) and 173 females (57%). Ethnicity of the student population was 233 Caucasians (77%), 58 African-Americans (19%), 5 Asian-Americans (2%), 5 Hispanic (2%), and 2 unspecified. Three (1%) of the students were classified as sophomores (10th grade), 110 (36%) as juniors (11th grade), and 190 (63%) were seniors (12th grade). No freshmen (9th grade) students were reported as enrolled in the youth apprenticeship programs.

Career Focus

Students ($N = 303$) enrolled in the youth apprenticeship programs were identified by their occupational specialization in the five career areas identified by the state of Georgia: Business, Marketing and Information Management ($n = 72$), Environmental and Agriculture ($n = 1$), Health and Medical ($n = 84$), Human Services ($n = 28$), and Technical and Engineering ($n = 118$). Male students were predominantly enrolled and employed in the Technical and Engineering career cluster ($n = 96$), while females were primarily enrolled and employed in the Health and Medical ($n = 76$) and Business, Marketing and Information Management ($n = 56$) career clusters.

Student Transcript Analysis

A detailed analysis of courses taken by the initial participants in the youth apprenticeship programs was conducted utilizing student transcripts. Course taking in the transcript data is counted in Carnegie units, each of which is equivalent to a one-hour course that meets daily for a full school year and is referred to as a course credit. This analysis was used to determine the number of credits and types of courses taken during the secondary school (9-12) experience by students enrolled in the youth apprenticeship program.

Initial transcript analysis (transcripts were provided for 277 of the 303 youth apprenticeship students) indicated that youth

apprentices had earned the following average course credit prior to enrolling in the program: English (\bar{M} = 2.23 units), Math (\bar{M} = 2.36 units), Science (\bar{M} = 2.30 units), Social Studies (\bar{M} = 2.46 units), Physical Education/Health (\bar{M} = 1.13 units), Computer Literacy (\bar{M} = .69 unit), Fine Arts (\bar{M} = .36 unit), Foreign Language (\bar{M} = 1.04 units), Vocational Education (\bar{M} = 1.66 units), Other (\bar{M} = .65 unit). An analysis of course credits earned by youth apprentices by career cluster is provided in Table 1.

Insert Table 1 about here

Students participating in the Business, Marketing and Information Management cluster have completed more math, science, social studies, and computer literacy units than students in the other three clusters. These students also have completed less vocational education courses than students in the other three clusters. This may suggest that students who are enrolling in the program for experience in business related occupational areas are more academically inclined than students in the other career clusters.

Participants in the Technical and Engineering cluster have significantly more units in vocational education subjects than students participating in the other three clusters. This may indicate that students interested in this occupational cluster have a stronger foundation in technical skills than their counter parts in the other career clusters and be better prepared for the technological aspects required for careers in this field.

Students participating in the Health and Medical cluster have fewer units in English, math, science, and social studies than students in the other three clusters. Additionally, these students also are below the total enrollment credit average in the subjects of English, math, science, social studies, PE/health, computer literacy, and vocational education. With the nature of the employment in this field, it would be expected that students with an interest in this career cluster would have attempted and completed more math and science courses.

School- and Work-Based Learning Components

The youth apprenticeship program is characterized by complementary learning experiences in the school (referred to as school-based learning) and in the local business (referred to as work-based learning). The success of the learning experiences rests with the structure of the program at each of these individual sites, as well as the linkages between them (School-to-Work Opportunities Act, 1994).

School-Based Learning

The school-based learning component of the youth apprenticeship program should be designed to integrate academic disciplines, academic and vocational subjects, as well as the work-based learning component. As youth apprenticeship students experience these forms of integration, they should better understand how their learning has application and relevance to the workplace. The extent that the pilot youth apprenticeship programs have had on these forms of integration varies significantly and for the most part remains relatively far from reaching the objective.

School schedule. Youth apprenticeship programs require new ways of organizing the school day and scheduling students to allow time for the work-based learning component. Each youth apprenticeship program has had varying degrees of success in this area. The majority of the youth apprenticeship programs schedule each youth apprentice individually to allow for work-based learning. Scheduling usually involves adjusting a student's schedule to allow for regular course enrollment and release from the school for two to three periods daily for the work-based portion of the program. An option for either attending school in the morning or afternoon is usually provided with the work-based portion taking place in the opposite time slot. The school scheduling of youth apprentices is very similar as that incorporated into cooperative vocational education programs, but without the related vocational class that is associated with the school-based portion of the program (i.e., marketing education, business education, trade and industrial education).

In a small number of youth apprenticeship programs, students are grouped scheduled together, but usually for a related vocational class (i.e., health occupations, drafting). Very few youth apprenticeship programs make allowances for all youth apprentices to meet together as a group as part of the academic schedule. In two programs, students meet in either the home room period or outside the regular school schedule, while in three other programs youth apprentices take a common class together. Three programs are developing a *Work Place Readiness* course that youth apprenticeship students will enroll in as part of the program.

Curriculum content. The curriculum is the most important part of the school-based component of the youth apprenticeship program. Both content and pedagogy are key factors in the type of learning and outcomes that are to be expected from the program. Each youth apprenticeship site varies significantly in the curriculum, in terms of integrating vocational and academic subjects, as well as linking school and work.

In the majority of youth apprenticeship programs, students are not enrolled in either a curriculum or a course designed for the program's career cluster. Students may or may not be enrolled in any type of vocational course related to the work-based learning position and there may be little linkage between the vocational course enrollment and the activities of the workplace.

The youth apprenticeship programs in this study indicate there has been very little alteration of academic courses to make learning more meaningful for students in the programs. Only the tech-prep approach utilized by a majority of the programs place any

emphasis on changing the curriculum and instructional methods. The applications-based learning approach of linking school-based instruction and work-based learning appears to be only meeting with limited success and is usually completed in a related technical or vocational course and not in academic courses.

Instructional methods. Curriculum and instruction must be modified to promote the acquisition of basic and higher-order skills by students enrolled in the youth apprenticeship programs. As reported by the youth apprenticeship program administrators and verified during on-site visits, very little change has occurred in the courses that youth apprenticeship students are enrolled in as part of the school-based portion of the program. Innovative instructional techniques such as team teaching, problem-solving activities, and cooperative learning have not been implemented in courses.

Career guidance and counseling. Career guidance and counseling are an important aspect of students developing their interest in particular careers or occupations. Youth apprenticeship programs should be integrating career awareness activities and counseling methods into the school-based component. Yet youth apprenticeship programs have initiated very limited career guidance and counseling activities. The most common form of career awareness has been job shadowing opportunities and tours for youth apprenticeship students at local businesses and industries. In a small number of youth apprenticeship programs, each student has prepared an individualized career/education plan that reflects educational interests and accomplishments and a range of postsecondary and career options. Overall, career guidance and counseling seem to be an inefficient part of the youth apprenticeship programs.

Articulation with postsecondary institutions. Articulation agreements enable youth apprenticeship students to earn postsecondary credits for technical and academic subjects based on courses completed in the secondary school. Developing these agreements requires the youth apprenticeship coordinator and local administration to work with the postsecondary institution(s) to examine both school-based and work-based learning components to assess how content matches up to vertically and horizontally align the curriculum. Additional articulation components, such as pre-admission preparation, should be in place to allow the youth apprenticeship student to make a smooth transition to the postsecondary institution.

Linkages to postsecondary institutions through articulation agreements are in place for most youth apprenticeship programs, but for the majority these agreements were developed as part of the tech-prep consortium efforts. Little consideration has been given by the youth apprenticeship program administrators for articulation of credit from the secondary school to the postsecondary institution for work-based learning. An additional concern expressed by administrators and youth apprenticeship coordinators during on-site visits was how to monitor student progress once the student leaves the secondary school and enters into a postsecondary institution. The question becomes who is responsible for the youth apprenticeship students, especially in regard to the work-based learning component of the program. Does the secondary school youth apprenticeship coordinator still maintain contact with the mentor and conduct evaluations of the youth apprenticeship student's performance or should the records be passed on to an individual identified at the postsecondary institution who will monitor student performance? This is a pressing question that needs to be resolved, especially if the number of youth apprenticeship students increases in the upcoming years and should be considered into the development of articulation agreements.

Work-Based Learning

Work-based learning is a planned job-training experience that utilizes business and industrial sites for training as part of the youth apprenticeship program. The work-based learning portion of the program is ideally designed so that students are provided paid work experience under the supervision of a mentor and includes a formalized sequence of training that leads to progressively higher skills and wages.

Paid work. Local youth apprenticeship program personnel and employers should determine the appropriate number of hours of work-based learning based on the requirements of the career focus of the program. The amount and intensity of workplace learning opportunities that students receive in the youth apprenticeship programs vary greatly. Experiences range from short-term, unpaid job shadowing to paid part-time employment. Students average as little as 10 hours per week at the work-based learning site to 30 hours per week.

The employer must agree to remunerate youth apprenticeship students at the state minimum wage or higher wage as agreed upon by the employer and the youth apprenticeship coordinator. A progressive wage scale is encouraged and should be based on the student's performance and evaluations. Wages, where offered, range from the federal minimum wage (\$4.25 per hour) to \$6.50 per hour for students.

Youth apprenticeship coordinators expressed a concern during on-site visits about obtaining commitments from employers for development of long-term employment and progressive wage scales for youth apprenticeship students. A differential in wage scales of youth apprenticeship students within the same business or industry was also noted by the research staff in interviews with students. Students within the same firm are started at different wage levels depending upon the tasks they are performing for the employer. This differential has caused some internal strife and envy among students. This differential in wages has also caused some students to question the career field they have chosen or been placed, and several had asked for a change in positions so that a higher wage could be obtained.

Even though the state legislation calls for a paid experience with a progressive wage scale for youth apprenticeship students, many programs (especially those serving students in the Health and Medical cluster) were having difficulty obtaining paid employment situations. Students in the Health and Medical cluster were more likely to be placed in a non-paid clinical experience, but did receive a rotation through various units in medical facilities as part of the work-based component of the program.

Skill development and training plans. A well-structured and coherent training plan is critical to maximizing the educational experience at work and in helping to reinforce school-based learning. A training plan details the major concepts to be learned on the job and in the school-based curriculum and outlines: (a) learning objectives for the youth apprenticeship placement, (b) activities and work tasks the youth apprenticeship student will engage in to achieve the objectives, and (c) methods to document and assess mastery of learning objectives.

Few of the youth apprenticeship sites have structured training plans for work-based learning, but many are in the process of trying to implement them. Since many of the youth apprenticeship programs are classified as *multi-occupational* and are serving students in a variety of occupational areas, the identification of specific skills for each work-based learning experience is a time-consuming and involved process. Most youth apprenticeship coordinators expressed in the on-site visits that this was the most difficult aspect of trying to coordinate the program. Those youth apprenticeship programs that were identified with a specific occupational area and business and industry seem to be more successful in designing a progressive training plan with documented mastery of skills. Those youth apprenticeship programs utilizing a multi-occupational approach seem to emphasize the work experience rather than the structured and progressive skill development integrated into school-based learning.

Work-based mentors. An integral part of the work-based learning component is a supportive adult, referred to as a mentor, who is linked to the youth apprenticeship student. Youth apprenticeship students' success at the work site is determined in large part by the support they receive from mentors and work-place supervisors. To assist the work-based mentor in providing quality educational experiences to a youth apprenticeship student, a mentor orientation and training session are usually conducted.

As reported by a majority of the youth apprenticeship coordinators, each student has a designated individual at the work site responsible for them. In most instances, the employer selects the individual in the business or industry to serve as the mentor. Each employer, with assistance from the youth apprenticeship coordinator, develops the criteria for the selection of an individual to serve as a mentor.

Mentors in several of the youth apprenticeship programs have received a minimum of a 4-hour training session to assist them in their role. A few youth apprenticeship coordinators have developed handbooks describing the role of the mentor and expectations. In a majority of youth apprenticeship programs, there is very little formal training provided for mentors or work-place supervisors, and the extent that a youth apprenticeship student interacts with their assigned mentor varies.

Recommendations

The implementation of a youth apprenticeship concept into local schools is still in the early stages of development. Most programs have had to *hit the ground running* and have not had enough time to develop the necessary quality components required to implement the true vision of a youth apprenticeship program as specified in the state legislation. All youth apprenticeship programs are in varying stages of development in the school-based, work-based, and connecting activities that define the program. As these programs enter into their second year and the youth apprenticeship coordinators have gained on the job training, it should be expected that program quality and adherence to program structure will improve. As the state of Georgia implements additional programs of youth apprenticeship into other school districts, the lessons learned from these initial pilot programs should be reviewed to avoid some of the *pitfalls* that have been experienced.

Considering data collected from both surveys and on-site visitation of these initial pilot sites, the following observations about the implementation of the youth apprenticeship concept into Georgia public schools are provided.

1. Career guidance and exploration needs to be expanded to assist students in developing an appropriate career focus and understanding of the youth apprenticeship program.

Many students enrolled in youth apprenticeship programs did not have an understanding of the objectives of the program and the commitment required. Students who enroll in a youth apprenticeship program should be interested in preparing for full-time employment within a chosen career field and be prepared for the additional postsecondary education requirements needed for advancement. Administrators, teachers, employers, and students need to understand that an objective of the youth apprenticeship program is for career preparation and not *part-time employment* or *release from school*.

Additionally, students need to be introduced to the *academic* requirements needed for success in a career cluster served by a youth apprenticeship program early in their secondary school experiences. As noted in the initial transcript analysis of students enrolled in various career clusters, many may have certain deficiencies in core-skill requirements for success in the occupational field and postsecondary education.

As youth apprenticeship programs continue to develop in the next years and the research personnel are able to fully assess data and experiences of youth apprenticeship students, the impact of the program on wages, employment, labor force

participation, and postsecondary education will be able to be measured.

2. An integrated and occupational valid curriculum (school- and work-based) for each youth apprenticeship program that is cooperatively developed between business and industry and the educational institutions is critical.

Integration of school-based and work-based learning is considered a key feature of the youth apprenticeship model. Careful coordination of work site activities and school curricula, both at the secondary and postsecondary levels, is expected to demonstrate to youth apprenticeship students that competencies learned in school are useful at work, and vice versa, and to reinforce the acquisition of basic and technical skills. Integrated learning can take a variety of forms, all which require collaboration among all educators and business and industry representatives. Those youth apprenticeship programs that focus on a specific industry or career cluster seem to be having a higher degree of success in integration than those that are multi-occupational.

The grouping of a career cluster of students into academic and vocational courses allows for the teaching and application of work-based skills. Those programs in which participating students are not grouped and are individually scheduled into courses at the secondary school may not gain the application of academic concepts to their occupational positions. Youth apprenticeship programs utilizing the multi-occupational approach seem to have the greatest difficulty of integrating academic and vocational instruction toward an occupational focus.

The grouping of students becomes more difficult in school districts where students are recruited from more than one high school to draw enough interested students to meet program enrollment requirements. In order to cluster students from multiple high schools in a curriculum that has an applied and contextual emphasis toward a career focus is difficult for large school districts unless students are willing to attend a common site for the school-based portion.

Postsecondary institutions must become more involved with secondary institutions and business and industry in the development of the integrated and occupational curriculum for youth apprenticeship programs. As noted earlier, most youth apprenticeship programs have articulation agreements with postsecondary institutions, but provisions for a structural linkage between the two that leads to the student receiving a postsecondary diploma or certification credentials are limited. Provisions need to be developed that provide a student a clear educational plan that stipulates the exact number of courses and credits that a student earns for the school- and work-based portions of the program. The status of a youth apprenticeship student at various exit points of the program should also be identified in the articulation agreements, as well as responsibilities of personnel in coordinating the experiences of the youth apprenticeship student at the different educational levels.

3. The recruitment and participation of employers to provide quality paid training and experiences for students is a critical element that needs to be given additional emphasis by all individuals associated with the youth apprenticeship program.

Youth apprenticeship programs require employers to play a significant role in designing and providing work and learning opportunities for youth apprenticeship students. In addition, a youth apprenticeship program requires employers to commit time, staff, and money. This is a major challenge facing the youth apprenticeship programs. Obtaining firm commitments from employers for work-site positions and training has presented a major barrier for the success of the pilot youth apprenticeship program. This lack of commitment may hamper the growth of youth apprenticeship programs in terms of the number of students that can be served.

Employers must view the youth apprenticeship program in a much larger context than just providing work-experience for a student and hiring another part-time employee who must contribute to the productivity of the business. Several employers commented during on-site visits that they had participated in school employment programs for years (i.e., cooperative education programs) and they viewed that as part of their community responsibility. They further commented that a student would be taught a set of skills required of their position in the business. The development of a wide range of skills and experiences (such is called for in all aspects of the industry approach) seems to be limited in many businesses providing paid employment to students verses some business providing non-paid job rotations. Placement of students with employers needs to be structured so that it provides learning experiences, adequate supervision, and instruction.

Strategies need to be developed for forming partnerships of educators, employers, postsecondary institutions, students, parents, government, labor, and community organizations (i.e., chambers of commerce, civic clubs) for the purpose of obtaining and cultivating quality placements for students. Placements must be viewed in the larger context of providing educational opportunities and growth rather than just employment or makes work.

4. School-based personnel involved with the youth apprenticeship program, especially the youth apprenticeship coordinator, should have appropriate educational and occupational experiences prior to implementing the program.

The success of the youth apprenticeship program, as in other types of educational programs, is usually related to the background and dedication of the individual charged with the responsibility of implementing the program. Youth apprenticeship coordinators are expected to demonstrate competence in career guidance and counseling, management of

curricula for the purposes of integration, supervision of work-based learning experiences, program development, and meeting the needs of business and industry as well as students and their employing educational institution.

In the selection of a youth apprenticeship coordinator, school districts need to consider selecting individuals who have had the appropriate educational and occupational experiences to implement the program. Since no specific professional standards or certification requirements are specified for the position of youth apprenticeship coordinator, school districts should select individuals who have professional preparation in conducting school- or industry-based education programs. Once selected this individual should receive additional educational or inservice experiences on the mission and objectives of the youth apprenticeship program including systematic implementation practices. These experiences should be coordinated between teacher education units of state universities and colleges and the Departments of Education and Technical and Adult Education.

5. Strategic planning for the youth apprenticeship program, that involves all pertinent stakeholders, should begin at least one year prior to the implementation of the program.

Adequate planning and lead time are essential in the implementation of a youth apprenticeship program. Many of the problems and deficiencies addressed by individuals during the on-site visitations could have been addressed during a planning phase for the program. Issues such as the occupational area for the program, recruitment of employers, curricula design, training of educators and workplace mentors, recruitment of students, and postsecondary linkages should be addressed during the planning stage and not while the program is being implemented. If youth apprenticeship programs are to achieve the results that are expected, it requires changes in both educational institutions and business and industry. To make changes requires planning and time and cannot be done in isolation by school personnel. Stakeholders such as parents, students, educators, business and industry representatives, and community agencies should form a collaborative planning structure and this collaboration should continue through the implementation phase.

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Table 1
Course credits earned by career cluster participation

Career Cluster	English	Math	Science	Social Studies	PE/Health	Computer Literacy	Fine Arts	Foreign Language	Vocational Education	Other
Business, Marketing and Information Management (n = 68)	2.44	2.57	2.60	2.65	1.08	.77	.31	1.36	1.25	.84
Health and Medical (n = 81)	1.92	2.12	2.09	2.31	1.06	.66	.53	1.07	1.28	.57
Human Services (n = 20)	2.55	2.50	2.50	2.58	.95	.63	.10	1.53	1.25	.95
Technical and Engineering (n = 108)	2.28	2.38	2.23	2.43	1.24	.68	.32	.72	2.29	.55

Total	2.23	2.36	2.30	2.46	1.13	.69	.36	1.04	1.66	.65
(N = 277)										

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