PROMISING PRACTICES FOR

Successful High School Apprenticeships

JENNIFER R. CURRY, PH.D.

Dedicated to RCC and to all of the generations of Appalachian parents who dreamed of a pathway forward for their children to have futures with careers that led to hope and prosperity.

– JRC

The American School Counselor Association (ASCA) supports school counselors' efforts to help students focus on academic, career and social/emotional development so they achieve success in school and are prepared to lead fulfilling lives as responsible members of society. ASCA provides professional development, publications and other resources, research and advocacy to school counselors around the globe. For more information, visit *www.schoolcounselor.org*.

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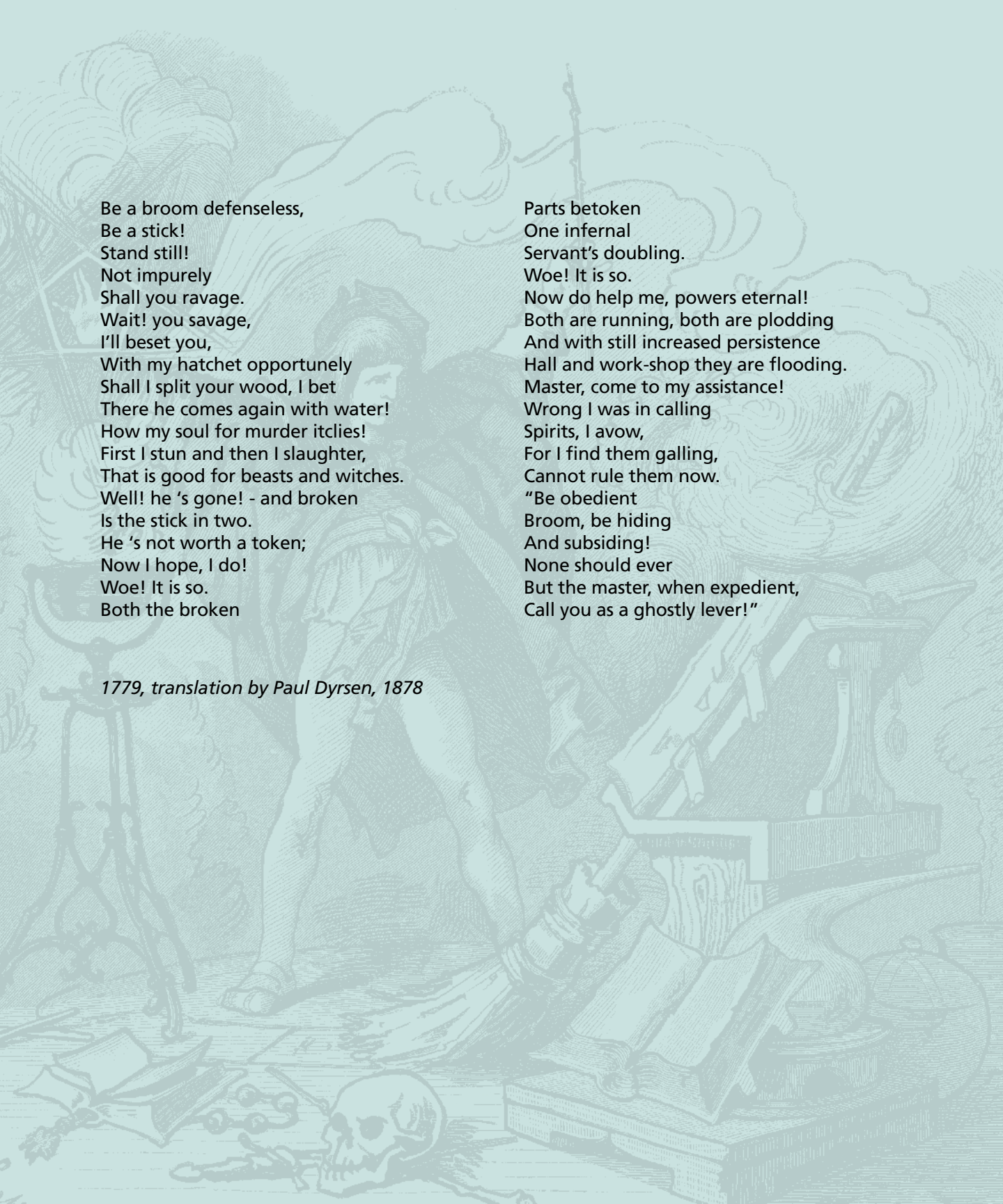
THE SORCERER'S APPRENTICE

Johann Wolfgang von Goethe

Gone's for once the old magician
With his countenance forbidding;
I'm now master,
I'm tactician,
All his ghosts must do my bidding.
Know his incantation,
Spell and gestures too;
By my mind's creation
Wonders shall I do.
Flood impassive
With persistence
From a distance
Want I rushing
And at last abundant, massive
Here into my basin gushing
Come, old broom!
For work get ready,
Dress yourself, put on your tatters
You're, I know, a servant steady
And proficient in such matters.
On two legs stand gravely,
Have a head, besides,
With your pail now bravely
Off, and do take strides!
Flood impassive
With persistence
From a distance
Want I rushing
And at last abundant, massive
Here into my basin gushing

Like a whirlwind he is going
To the stream, and then in
Like an engine he is throwing
Water for my use; with flurry
Do I watch the steady;
Not a drop is spilled,
Basin, bowls already
Are with water filled.
Fool unwitty,
Stop your going!
Overflowing
Are the dishes.
I forgot the charm; what pity!
Now my words are empty
For the magic charm undoing
What I did,
I have forgotten.
Be a broom!
Be not renewing
Now your efforts, spell-begotten!
Still his work abhorrent
Does the wretch resume;
Where I look a torrent
Threatens me with doom.
No, no longer
Shall I suffer
You to offer
Bold defiance.
I have brains,
I am the stronger
And I shall enforce compliance
You, hell's miscreate abortion,
Is this house doomed to perdition?
Signs I see in every portion
Of impending demolition.
Servant, cursed and senseless,
Do obey my will!



Be a broom defenseless,
Be a stick!
Stand still!
Not impurely
Shall you ravage.
Wait! you savage,
I'll beset you,
With my hatchet opportunely
Shall I split your wood, I bet
There he comes again with water!
How my soul for murder itclies!
First I stun and then I slaughter,
That is good for beasts and witches.
Well! he 's gone! - and broken
Is the stick in two.
He 's not worth a token;
Now I hope, I do!
Woe! It is so.
Both the broken
Parts betoken
One infernal
Servant's doubling.
Woe! It is so.
Now do help me, powers eternal!
Both are running, both are plodding
And with still increased persistence
Hall and work-shop they are flooding.
Master, come to my assistance!
Wrong I was in calling
Spirits, I avow,
For I find them galling,
Cannot rule them now.
"Be obedient
Broom, be hiding
And subsiding!
None should ever
But the master, when expedient,
Call you as a ghostly lever!"

1779, translation by Paul Dyrsen, 1878

HOW TO USE THIS BOOK

Maybe it won't work out. But maybe seeing
if it does will be the best adventure ever.
– Author Unknown

Learning is a process that may evoke both excitement and frustration for individuals. As with the famous poem "The Sorcerer's Apprentice" (von Goethe, 1779), students often want a balance of support from a mentor along with freedom to experiment, opportunities to try out new skills and a chance to test their own knowledge. On occasion, students need a more knowledgeable and practiced expert to guide them back to safety when they begin to feel they've reached the boundaries of their competence or that they've stretched beyond their own limits and need a helping hand to accomplish the goals or tasks assigned to them. Similar to the sorcerer's apprentice, many new learners have felt the range of emotions expressed in von Goethe's famous poem: curiosity, enthusiasm, frustration, fear, rebellion and relief.

Admittedly, sorcery generally isn't a college-bound, career or technical pathway in most high schools today. However, apprenticeships have re-emerged as a valued learning experience across many types of secondary and postsecondary education programs. To provide an effective apprenticeship experience, educators need to be aware of the promising practices that may help mitigate ethical issues and legal liabilities while also promoting the best possible academic and career outcomes for student apprentices.

Methods

This book was designed using a variety of research methods. Due to the exploratory nature of U.S. apprenticeships, mixed methods were employed including content analysis of documents, qualitative case study based on individual and focus-group data using semi-structured interview protocols and triangulation of interview data with various supporting documents. All participants were volunteers, and informed consent was based on Institutional Review Board ethical codes. Analysis included transcription, coding, establishment of themes for each question and triangulation of documents. This book was reviewed through a variety of methods including peer review, focus groups and a structured review process with a Southeastern Conference peer institution, the University of South Carolina.

However, in spite of the research foundations utilized, this book is written in a fundamental style with a focus on practicality. Whether your district and state are working with a third-party provider or if you are considering piloting apprenticeships with a small group of students in the future, this book is meant to help you navigate through some of the nuts and bolts of apprenticeship program design and implementation. The main goal of this text is how to create a smooth transition with industry partners, community and technical colleges, students and parents. A key function of this book is to reduce liabilities and promote success for your school on the journey to successful apprenticeship programming.

Book Layout

This book is meant to help your group (e.g., school, district, career center) think about how you will handle problems as they arise and to foster the best possible environment for student apprentices in your community. Preparation is always preferable to reactivity. The activities in this book provide an opportunity for your group to anticipate future dilemmas and formulate potential action plans. If you get to a section where you are unsure of how you might handle a particular problem, then this is a potential area where your group may want to pay extra close attention and think about details, have meaningful conversation and formulate useful solutions. Remember, there are no hard and fast rules. This book is meant to give you promising practice guidelines, so you will have to come up with the best possible solutions for the contexts in which you work.

The introduction will give you an overview of apprenticeships and the history of how contemporary apprenticeship programs have developed and evolved. The rest of the book is divided into sections. Each section will give you pertinent literature on a topic specific to secondary school apprenticeships, recommendations, case studies and reflection questions. The case studies are important and are based on true stories about real people. However, identifying information and details have been changed to mask students' locations, personal information and the organizations involved. The case studies are not meant to have easy or fast conclusions but rather to stimulate further discussion about possible concerns and solutions.

This book may be used for district-level planning, school-level planning, school counselor training or coordinated training between student support and third-party providers. This book's most essential function is to assist in the facilitation of conversations around these important topics. As your group gets closer to implementing apprenticeship programs, writing apprenticeship program policies or refining your current apprenticeship practices, it is my express hope this book will lead you to conversations with the depth and breadth necessary to make meaningful decisions for your schools, districts, industry partners, communities and, most of all, for the students you serve.

– Jen Curry

1 What is an Apprenticeship Program?

The landmark legislation that reauthorized the Elementary and Secondary Education Act (ESEA) (1965) that became known as (No Child Left Behind [NCLB], 2002) was meant to prepare every child in the United States for a four-year college degree. However, this legislation was passed without consideration for the diversity of student learning styles, interests and talents. Moreover, a lack of understanding about occupations, degrees needed to enter occupational fields and the payoff for college underscored the bipartisan plan for NCLB (Curry & Jackson, 2015). As a result, the core educational approach, which pushed a math and language arts curriculum but devalued art, music, and career and technical careers, left many students without a vested interested in postsecondary education.

"Students who struggled with the core fours or the four-year college pressure feel dumb; they feel they can't be successful," said Alicia Vanderlinden, Central High School, Mesa School District, Colo. "They often think they don't have skills or they can't do anything, and it isn't true. It's an issue that their skill sets are simply in an area that haven't been able to explore because of the academic options they were given, the options they were limited to so far."

The latest ESEA reauthorization, known as the Every Student Succeeds Act, signed into law in 2015, has allowed for a broader and more diverse curriculum with a focus on many postsecondary paths including certificate programs, career and technical degrees, associate degrees, four-year college and beyond. This revised understanding of postsecondary education, with a value on the college payoff for many types of training and credentialing, has led to a renewed understanding that students may benefit from diverse educational programs more inclusive of various career pathways.

Today, schools are being pushed to consider how to integrate career and college readiness in the form of career and technical education, rigorous college preparatory offerings and employability skills training throughout the K–12 experience (Curry & Milsom, 2017).

Some of the push for this more comprehensive view has come from U.S. industries. Many companies indicate they have high-paying positions that have gone unfilled due to a lack of qualified applicants to hire. The lack of suitable applicants stems from the apparent absence or limit of competent, credentialed individuals to fill these positions or the lack of individuals with employable skills. One way to prepare a workforce suitable for hire is to consider how to implement credentialing and employability skills training in U.S. secondary schools. A viable solution to both of these issues is to allow students to have workplace experiences in high school, such as high school apprenticeships.

Although there is more than one way to design and define an apprenticeship program, a registered apprenticeship program, according to the U.S. Department of Labor (n.d.), must have key components in place. These components include:

- business involvement
- structured, on-the-job training
- related instruction
- rewards for skill gains
- national occupational credentialing

Specifically, business involvement is essential at every level of the program, including program design. Businesses help designate and establish the competencies necessary for apprentices to acquire to demonstrate skill attainment. They also provide venues in which apprentices procure initial employment, and businesses connect apprentices to the workplace mentors that will train and support them.

Structured, on-the-job training involves purposeful, productive hands-on learning. By working alongside a mentor and practicing the daily skills and knowledge needed to master the competencies for a specific occupation apprentices are given an opportunity to learn in a real-world setting.

Related instruction is curriculum that complements the on-the-job training. This curriculum provides the apprentice with the academic knowledge necessary to be proficient in the chosen work. The curriculum may be delivered in a variety of education venues such as community college, high school, technical school or at the worksite.

Rewards for skill gains underscores the value of continual growth. As the apprentice gains skills, knowledge and experience throughout the program, the apprentice's responsibilities increase. The apprentice's wage also increases.

The national occupational credential ensures apprentices leave the registered apprenticeship program fully proficient in knowledge and skills to enter a given occupation. If students have mastered these skills and knowledge, they are given a credential that vouches for this mastery and their readiness to enter the workforce in a given occupation. This credential has standard recognition across the industry in which the apprentice is employed (U.S. Department of Labor, n.d.). Throughout this book, the term apprenticeship program is used interchangeably with registered apprenticeship program, meaning a program that contains the aforementioned elements.

There are myriad benefits to both student apprentices and employers for participation in a registered apprenticeship program. For the apprentice, the following benefits are well-documented and supported in data and literature:

- career training
- education including credit toward an associate or bachelor's degree
- a competitive salary
- a nationally portable credential
- The benefits to industry include:
- creation of a stable and reliable pipeline of workers
- increased knowledge transfer
- improved employee retention up to 91 percent
- a systematic method of training that is also customizable
- a safer workplace (U.S. Dept. of Labor, n.d.)

Figure 1. Elements of a U.S. Bureau of Labor Registered Apprentice Program

Career and Technical Education

Before discussing promising practices of modern-day apprenticeships, it is important to understand the history and development of apprenticeship programs in context. Often, people assume apprenticeships are part of an effort to bring back vocational education to secondary schools. There are misconceptions about which students might qualify for apprenticeships and how apprenticeships might fit in the school's larger curriculum.

Students in in various secondary pathways can benefit from apprenticeships, but we'll start by reviewing career and technical education (CTE). According to the National Center for Education Statistics (NCES), there are myriad differences between the vocational education and training (vo-tech) programs launched in the United States in the 1960s and today's CTE programs. The main areas of educational focus for students in vocational education programs were:

- agriculture
- business and office
- marketing and distribution
- health
- home economics
- technical education
- trade and industry

At the time vo-tech programs hit their peak, in 1992, about 8 percent of high school students were primarily enrolled in vo-tech program tracks (U.S. DOE, 1992). However, according to NCES, some of the vo-tech programs did not train students for a specific trade; rather, students were given training in general labor market skills. These skills included word processing, career education, industrial arts and basic academic skills (general writing and communication skills) (U.S. DOE, n.d.).

Aside from the vo-tech programs with a general labor market approach, other vo-tech programs did focus on specific trade skills. Vo-tech programs often had curriculum designed to train students in a particular trade but did not necessarily align these curricula to nationally recognized industry standards or local and regional workforce needs. Therefore, students going through vo-tech programs in the 1970s, 1980s and 1990s, may have ended up with trade-specific skills that did not actually lead to credentialing. Furthermore, the skills obtained weren't always in areas where there was true workforce demand. Further, without qualifying work experience, students weren't able to develop the mindsets and employability skills that come with theory application.

Today, CTE differs from vo-tech training in previous decades because schools align curriculum with industry-recognized credentials (IRCs), allowing students to earn credit toward, and in some cases full credentialing for, a specific trade while in high school. Examples of these careers include certified nurse assistants, welding and drafting. These credentials allow students options in their postsecondary transitions, and many are portable from state to state (Wilcox, 2006). Some of the postsecondary options afforded through obtaining IRCs include:

- continue to postsecondary education for further credentialing such as technical school and community college
- seek gainful employment
- apply for professional apprenticeships and continue education in fields requiring more advanced training, such as electricians

Although the scope of students participating in CTE varies, in 2013–2014, 7,502,727 U.S. secondary students received at least one high school credit in a CTE course (ACTE, 2018). Students participating in three or more CTE courses while in high school may be labeled CTE concentrators if the student had a specific occupational

track that all of the CTE credits were listed in (e.g., computer and information systems). Students earning three or more CTE credits that were not in a specific occupational track are called CTE nonconcentrators. CTE concentrators are more likely to graduate from high school (93 percent) than the average high school population (80 percent).

According to the National Center for Education Statistics (2018), as of 2012, high school CTE concentrators enrolled in postsecondary education at a lower rate than did all graduates (82 percent and 89 percent, respectively). On further analysis, when the data on concentrators is disaggregated, concentrators most likely to enroll in postsecondary education were in the following occupations:

- computer and information sciences (93 percent)
- health sciences (90 percent)
- marketing (89 percent)
- communication and design (88 percent)
- business (87 percent), engineering technologies (83 percent)
- consumer and culinary services (81 percent)

Conversely, concentrators in construction, manufacturing, repair and transportation were less likely to enroll in postsecondary education (U.S. Department of Education, 2018). It is possible the reason for this disparity is that concentrators in some occupations are more prepared to enter the workforce with credentials for employment immediately upon high school graduation. Thus, even within the CTE fields there is diversity in the types of work experiences students need while still in high school.

For the CTE nonconcentrators, a majority (91 percent) enroll in postsecondary education (ACTE, 2018). Some students will choose to enter community college seeking certificates or associate degrees specific to careers requiring specialized training. However, some students may be wise to seek out certificates or degrees offered in their area due to worker shortages or high demand for skilled labor if they find it matches with their personal interests and aptitudes. These careers, through alignment with workforce demand within a geographical area, are given high priority through special program offerings at local community and technical colleges.

"Here in Grand Junction, we have an adult apprenticeship program through the Workforce Center in our Chamber of Commerce," said Dennis Bailey-Fougnier, Ph.D., chief operating officer & vice president of community college affairs, Western Colorado Community College (WCCC). "There was a huge need for machinists. There are probably openings at any given time for 50–90 machinists just in our valley. We met with the industries, asked what competencies they needed and what they were looking for. We took the competencies and developed four classes. We then showed the curriculum of these classes to the industries to be sure the curriculum we designed met the competencies; they verified that it did. So now, the industries have an agreement that if students take those four classes, then they are moved to the top of the hiring list. We had 12 people enroll the first semester, and they will earn a certificate with those four classes."

Through the program at WCCC, machinists can get an entry-level certificate within one semester. To incentivize employees to obtain further certifications, industries in

Grand Junction agree to pay their employees' tuition to continue to earn stackable certifications. According to Bailey-Fougnier, these certifications lead the machinists to an eventual associate degree as well as an IRC.

To accomplish the task of creating such certificate programs at community colleges, a curriculum breakdown and alignment to work-related competencies must occur. Bailey-Fougnier noted that he had overseen a process called curriculum "chunking." This process involved taking associate degrees and breaking them into certificates. There is great value in this method of education and training. Specifically, students are employable with less time in postsecondary training because they have gained industry-agreed-upon competencies. Moreover, for students with external obligations to family or who have the need to be financially self-supporting a modesuch as the one described by Bailey-Fougnier allows for greater independence where the student may work full time while taking courses part time with employer support. By further chunking components of the degree into certificates, students may be retained and have incentive to continue to degree completion because with each certificate completed, there should be a pay increase as students' competencies increase (Dins, 2005).

Similarly, Dins (2005), conducted a case study of three community colleges' faculty, staff and administrators' perceptions of the impact of chunking. For one of the colleges, Phoenix College (PC), she gave examples of chunking in the CTE fields. One example given by Dins (2005) was in the associate's of applied science degree in health information technology where the degree was chunked into four certificates: (1) hospital-based medical coding, (2) physician-based medical coding, (3) health information and (4) medical billing. Dins explained that PC also had an articulation agreement with Arizona State University so students earning the associate's of applied science degree could then move on to a bachelor's of applied science degree if they chose to do so. For those participants in Dins' (2005) study, one of the benefits of the chunking method was that it made marketing and explaining certificates and degree programs to students easier. Additionally, participants identified higher community college student retention and completion rates, and employers were able to easily recognize the agreed-upon competencies when demonstrated by students (Dins, 2005).

Bailey-Fougnier also described a unique articulation agreement WCCC has that encourages students in CTE fields, who may want to be self-employed, to continue toward a bachelor of applied science degree. "If you get an associate degree in welding here our four-year university will take the whole degree and build on top of it," Bailey-Fougnier said. "So you can still be a welder, but if you want to own your own shop or you want to move up into management you need more than welding skills. You need those business skills. The bachelor of applied sciences honors that technical degree where many universities would tell the student 'you have to start over.' In my experience, most people who get a CTE degree love their profession, but they may need the skills to start their own business. Well this bachelor of applied science gives them the business background so they know how to write a business plan, how to do payroll, how to deal with supervisory issues. Now they can get the business classes but because they are a welder, or whatever, they don't have to take the four years to do all that."

Bailey-Fougnier's example of the bachelor of applied science degree is one demonstration of how CTE and four-year traditional liberal arts degrees might need to merge in the future to create a more sustainable and viable option for students. Rather than making students choose one limited, narrow path, universities and community colleges may want to consider how to broaden articulation agreements to allow students greater flexibility and degree mobility. These types of degree offerings, coupled with workplace opportunities like apprenticeships, are giving secondary students more options to think about.

For CTE students apprenticeships may be appealing for a variety of reasons. For those students seeking initial IRCs and a desire for full-time employment immediately out of high school, an apprenticeship may offer an opportunity to network, build skills and develop knowledge. Additionally, student apprentices may establish employer relationships that evolve into full-time employment offers upon program completion. For those students desiring more credentials or a degree, the apprenticeship offers skills, knowledge, credentialing and, in many cases, tuition remuneration as a condition of the student apprenticeship agreement.

It's important to note that not every CTE student will participate in an apprenticeship, and not every apprentice will be in a CTE track in high school. For example, some students may seek apprenticeships in technology fields with the intent of pursuing bachelor's degrees in computer programming. These students are four-year-degree-bound students who may have taken honors and AP coursework and wish to seek apprenticeships to develop technical skills related to their chosen industry. Indeed, in Colorado's CareerWise program, there is a deliberate focus on non-labor fields, specifically advanced manufacturing and information technology, as these are the areas of high demand from industry.

Student Apprenticeships and Work-Based Experiences

Many people may be confused by what an apprenticeship is. Jonathon Ohrt, an associate professor at University of South Carolina, described how the term apprenticeship was used for a work experience during his tenure as a school counselor. For years, many high schools would allow seniors who had elective hours in their schedule to leave campus early during the day for an "apprenticeship." This wasn't a structured apprenticeship through the U.S. Bureau of Labor; rather, the students just had to secure any job off campus (e.g., fast food, retail). The students' work wasn't monitored for competence, and students didn't receive class credit based on performance evaluation.

Because the term apprenticeship has been used to define a variety of work experiences, such as the one Ohrt described, it's difficult for families and students to know what is meant by apprenticeship. Before discussing apprenticeship programs and how to develop, implement and refine them using promising practices, let's review some other types of work-based experiences used in schools and research and phases of transition from school to workplace experiences.

Rus, Yasin, Yunus, Rahim and Ismail (2015) used a grounded theory approach to study the transitions of student apprentices entering industrial training institutes (ITI).

The researchers reported that in Malaysia, where this study was conducted, there is a high demand for skilled labor in manufacturing and construction. The lack of a skilled labor force has caused Malaysian industries to hire from other countries, and this, in turn, is problematic for bringing new industries into the country. Therefore, the need to create a skilled labor force is paramount to Malaysia's economic growth and success. Through convenience sampling and interviews, the researchers identified phases through which ITI apprentices progressed.

The following phases describe the student apprentice progression (Rus et al., 2015). The first phase was entering. During this phase students described entering ITI for numerous reasons, such as personal choice, peer persuasion or parental coercion. In the second phase, accepting, student apprentices understood that learning was different in the ITI and that to be successful, they had to not only listen but also apply what they learned. Specifically, they had to use listening skills, pay attention, focus on their work, accept feedback and study in new ways. Adapting was the third phase and signaled student apprentices were becoming more independent and making their own adjustments in learning in the environment, rather than waiting for instruction. Student apprentices in this phase realize that adaptation is part of being in the workplace and a constant part of work life. The fourth phase, changing, is one of the most important transitions because this is the phase where the student apprentices watch work being done and apply new skills on their own. Apprentices also begin to self-correct mistakes without external feedback about what is or isn't correct. The final phase, termed skilling for job, was used to describe the mindset gained by student apprentices, which is that they will use all they've learned at the ITI in the real world but that learning will be a continuous part of the workplace and of the work future and, thus, would not stop. It is this progression beyond knowledge – the development of skills and mindsets – that distinguishes apprenticeship training from vocational education of past years. Indeed, apprenticeships are different from many secondary career-training opportunities.

Internship: Another type of educational program or experience meant to assist students in learning more about a career and the workplace is the internship. Internships tend to be shorter term than apprenticeships and in secondary settings may only be a few weeks or one semester. In high school settings, students in an internship usually do not receive pay for the internship. Although internships are shorter and not remunerated, this does not mean they cannot have a substantial impact on student learning. For example, in a phenomenological study conducted by Hsu and Roth (2010), high school students were given an opportunity to participate in science internships in a university setting. Students were given a variety of experiences related to a specific science project they were assigned, such as reading scientific journals articles, collecting data and samples, running experiments and recording field notes and observations. The students then presented the findings from their projects to a group of about 50 scientists, teachers, classmates, and parents. Hsu and Roth found that at the completion of the internship, which involved about 16 hours of actual lab time, five major themes emerged. First, students had a more authentic view of university science and the daily work of science and a less stereotypical view of scientists. Second, students gained an understanding of the science community

including the expense of the work and the value of colleagues. Third, high school interns began to realize how cumbersome university science is (i.e., following protocols and policy related to research). Fourth, students began to self-reflect and explore their own future career possibilities. And finally, participants gained depth and breadth in their understanding of science.

Similarly, Burgstahler and Bellman (2009) found that when students with disabilities were afforded 6- to 12-week internships in computing, biology, engineering, research, administration and health science they had several gains. These gains included: (1) motivation for the career field the internship placement was focused on, (2) career knowledge, (3) employment skills and (4) collaborative skills with co-workers.

Another benefit of the internship experience is that students with disabilities learned about the type of accommodations they might need to be successful long term in the workplace; this information is critical for self-advocacy when seeking future employment. Although this study had limitations, including a small sample size and lack of a control group, the researchers' findings are critical because they point to the importance of early work experiences for students with disabilities. A further interesting finding is that the students who gained the most in the areas of foci for this study were females, Caucasians and students with hearing impairment.

Hybrid career programming: Another successful educational and career training program for college-bound underrepresented minorities involved a hybrid program developed at Emory University in Atlanta. Students in the program began in the summer of their sophomore year of high school working in a college biomedical laboratory. Each summer thereafter, they worked in a lab, received SAT preparation, were mentored by graduate students and post-doctoral students and received college-level biology instruction. Success included 61 percent of participants majoring in a science field, and 38 out of 39 pursuing a bachelor of science degree (Rohrbaugh & Corces, 2011). Hsu and Roth (2009) found that high school students participating in two-month summer science internships in university settings developed a realistic understanding of the work of a university scientist. This understanding included the dedication and passion to scientific work in terms of time and effort. This realistic understanding may have facilitated students' long-term commitment to science careers as they were more aware of their own personal interest, abilities and the day-to-day realities of the work.

P-TECH: Another excellent example of a career-training opportunity is the Pathways in Technology Early College High School (P-TECH) programs emerging to address the critical shortage of qualified technology industry workers. This model, extending from ninth grade to year 14, is meant to connect high school cohesively to a postsecondary associate of applied science (Deen, 2015). These programs were designed by Sam Palmisano, IBM's president and chief executive officer, along with the former chancellor of New York City Department of Education. The program, designed to enhance success in low-achieving, low-income public schools, is also meant to provide future leadership and diversity in the technology industry.

Programs for at-risk youth: Some programs have been specially designed to create workplace transition opportunities for youth who have already dropped out of school or are at high-risk of not completing school. These include programs such

as the National Guard's Youth ChalleNGe Program for youth who are drug free but have had little school success (some who have dropped out) and many who have been expelled from school. Some have had involvement with the criminal justice system. Phase one of the program includes an intense two-week introduction where youth are introduced to the program's rules and must participate consistently in physically demanding assessments and psychological evaluations. Once this phase is complete, participants enroll in a 22-week residential program focusing on the development of life skills, leadership, teamwork, employability training, service and academics (Lerman, 2013). Nearly four out of five individuals who enroll in the residential program successfully complete it. Of those, 57 percent completed a GED diploma, and 30 percent received a high school diploma, compared with the control group where 35 percent received a GED diploma, and 27 percent received a high school diploma. Results also included statistically significant gains in overall attitude improvement such as leadership skills, time management and anger management. Program participants had sustained, statistically significant earnings and unsubsidized jobs during a three-year follow up when unemployment was rising compared with a control group.

Interest-based experiences: McPhail, Pierson, Goodman and Noffke (2004) reported findings from a study of 10 middle school students with identified disabilities (i.e., learning disabilities, dyslexia, Attention Deficit Disorder) in a year-long interest-based inquiry setting (IBIS) apprenticeship. For the purpose of their study, McPhail et al. focused on the students participating in the sculpting apprenticeship program. Within this curriculum, students were placed in the role of human-form sculptors and given the opportunity to work in a studio alongside a professional sculptor. Students were taught: (1) material aspects of sculpting (i.e., how to use sculpting tools, mathematical and physiological properties of sculpting, materials used in the sculpting process), (2) the importance of mentorship within the arts, time management when creating a sculpture, using positive self-talk and (3) the trial and error learning aspects of sculpture. Within the sculpting apprenticeship, students' personal stories about art as well as the sculptures themselves became mediums for learning. Thus, students became a group of professional co-learning artists who provided critiques, feedback and positive support to one another; this shared communication promoted active listening, attentiveness and openness. McPhail et al. noted that the apprentices became more persistent in their sculpting and were able to work through their frustrations (p. 487), a key to success in any career field.

Steve Schneider, school counselor, Sheboygan South High School, Sheboygan, Wis., has a cooperative program at his school that was initially run through the school and is now run through the district. Participating students earn a wage ($10 per hour) and high school credit but do not receive a credential related to the work experience. The co-op experience in Sheboygan is a pass/fail experience in terms of grading and is mainly an observation opportunity (i.e., job shadowing). Students apply for the co-op experience and, if chosen by an employer, spend 75-90 hours during the semester with an employer exploring various career options. Because co-op students are considered student learners, some exceptions are allowed for minors in manufacturing settings. However, student learner status does not override the employment of minors laws; rather the student learner exception limits the minor to performing some hazardous

tasks to an incidental (less than 5 percent of their work time) and occasional (not a regular part of their job) basis. (See Wis. Admin. Code DWD 270.14(3)(f)).

Career-focused programs: Lerman noted that many schools offer CTE with field-based components such as job shadowing, mentorship and volunteering with local employment and industry partners. There does appear to be benefit to students through such employer partnerships with schools, particularly as students get to see the real-world aspects of a career, and the employer is invested in the educational aspects of developing the future workforce. Lerman also contended that the link between employer partnerships and schools has provided evidence of increasing students' interest in taking more rigorous coursework, more coursework in their field of interest and increased interest in pursuing postsecondary education. Therefore, even a short-term workplace exposure experience can be beneficial.

However, Lerman also found apprenticeships offer something unique compared with other workplace learning experiences. Apprenticeships are the most in-depth workplace learning that can be provided because students receive a unique insider look, through the perspectives of the students and their mentors, at the workplace culture and the skills it takes to be successful in the work environment. Apprentices learn to navigate the work landscape. They learn what it takes to be successful; how to overcome challenges; the history of the institution; how office politics play out in everyday decision making; and how to deal with personalities, social issues, conflicts and concerns in a workspace. These demands and challenges on the apprentice make for a learning opportunity that is beyond what a textbook can offer. Lerman advocated that this process actually speeds the maturation of apprentices and catapults their development by increasing their investment in their employer, advancing their understanding of the importance of their own education and skills and improving their efficacy to affect change in their own progress. In sum, compared with their non-apprentice peers, apprentices become highly devoted to the success of the industry they are working in and to their own career growth.

Other types of programs that have been used in schools include job shadowing, which can be done one time or for a designated period of time. To prepare job-shadowing programs schools might consider contacting the local chamber of commerce (Cease-Cook, Fowler, & Test, 2015). Another work-exposure program includes work sampling. Work sampling, sometimes called job sampling, does not meaningfully benefit the employer but does allow the youth participating to gain exposure to work activities. Cease-Cook et al. give an example of some work sampling activities that may be done in a school setting such as campus beautification (planting trees, gardens) for a horticulture sampling, typing and entering non-sensitive data for clerical work sampling and creating visual displays in the hallways for marketing sampling. Of course, work sampling could also be done in the community if the school has the means to provide transportation. Finally, service learning may also give work exposure to students. The added benefit of service learning is that students give something to the community while learning about a careeand are able to have meaningful reflection about what they are learning. Some ideas may include food drives, making plastic blankets for the homeless, having a sock drive, campus restoration, etc.

A Review of Current, Successful Apprenticeship Models

One apprenticeship model that has heralded international attention is the Swiss model. Switzerland is a unique case in the world of occupations. In 2002, the Swiss Confederatioin passed landmark legislation, the Swiss Vocational Training Act. This act catapulted vocational education and training (VET) in secondary schools as the primary educational medium with nearly two-thirds of the Swiss population enrolling in VET programs upon the completion of compulsory education (Kammerman, 2010). The VET program is apprenticeship-based with a dual approach (i.e., classroom instruction in schools and practical application in work-based learning). Noteworthy, the Switzerland VET system is employer-driven, and much of the responsibility for developing credentials and providing paid apprenticeship opportunities is placed on employers.

Although the program is still in its early stages, proponents point to increased gains in postsecondary certifications, employment and apprenticeships as evidence of early success associated with this model. Further, a significant proportion of the Swiss secondary population participates in this model. The breakdown of Swiss high school students at the secondary level follows: 20 percent attend university-bound high schools, 7 percent attend high schools with a specialized concentration or full-time vocational focus, 49 percent enter apprenticeships in the Swiss VET system, 20 percent complete one year of academic school between middle and high school, and 4 percent leave school with no high school diploma (Neuenschwander & Garett, 2008). These tracks are fairly solidified by eighth grade without much flexibility or mobility for switching in between.

Similar to the Swiss model, Germany has also boasted the success of youth apprenticeships. Clark and Fahr (2001) found that even among non-college-bound students the German approach was heralding great promise. Clark and Fahr focused on two aspects of apprenticeship training they believed were key to long-term success in the workplace: intensive and extensive training components. Intensive training refers to the training received specific to the type of occupational work done by an individual. Conversely, extensive training refers to training broadening the individual's overall workplace skills and makes intensive training more transferrable to a larger array of settings (these may be considered as broader employability skills).

The researchers used a model developed to analyze costs of intensive and extensive training scenarios for displaced workers (e.g., plant closures), along with a choice of rejecting or accepting job offers in the same occupation or a different occupation. Clark and Fahr found that the apprenticeship programs in Germany had sufficiently broad enough intensive and extensive training curricula to enable students to transfer to both the same occupational field in cases where work ended or to other occupational fields where they might utilize broader employability skills learned in the apprenticeship training. This research, nearly 20 years old, left Clark and Fahr curious as to why the U.S. education system was not utilizing similar strategies to train the U.S. future workforce.

One example of success in the United States, based on a report by Grobe, Rosenblum and Weissman (2010), is Year Up, an intensive yearlong program combining education and training. Students complete a one-year internships with

groups such as J.P. Morgan Chase or American Express. Of the nearly 2,100 students participating, 90 percent completed the program, and around 75 percent were offered full-time employment at the completion of the internship, indicating an impressive success rate. However, this model works off of a 13th-year process, meaning students entering the program have a GED diploma or have already completed high school and work for an additional year to complete the paid internship. The way the 13th year operates is to have students earn credit through dual enrollment (articulation agreements) through credit-bearing courses that have both content and communications skills required for employment in the industries partnering with Year Up (primarily financial services and technology fields). Students must first pass this intensive coursework to matriculate to the internship component of the program.

Employability skills: Beyond the credentials and experience that come with an apprenticeship, there is an increased focus on helping students gain employability skills. According to Yorke (2006), employability may be defined as "a set of achievements-skills, understandings and personal attributes that makes graduates more likely to gain employment and be successful in their chosen occupations, which benefits themselves, the workforce, the community and the economy. (p.8)

Students working in apprenticeships have the opportunity to apply workplace skills and knowledge. For example, in a study conducted by Martin, Tummons, Ball and Bird (2014), students in an agriculture program interned in the area of animal care (clinic, veterinary offices, animal retail, laboratory). Qualitative research findings indicated the students demonstrated responsibility and hard work (e.g., cleaning cages and habitats), adjusted coping skills to meet work demands (e.g., learning to cope with the varied temperaments of animals), better understanding of timeliness and had a greater motivation to come to school. Moreover, Lerman noted that students in internships learn from the stories, advice, suggestions and observations of professionals in their field, something they cannot learn from books. They then can apply what they learn through imitation, trial and error, and under guided supervision where mistakes are corrected by constructive feedback and support.

Emotional maturity and growth: Students working in apprenticeships receive opportunities to grow emotionally and socially. Al-Mamun (2012) elaborated on numerous soft skills desirable for student apprentices to acquire to become highly employable. His list included motivating others, being a team leader, making informed decisions, social skills, creativity and being an effective communicator. Al-Mamun points out that, unlike trade-specific skills, soft skills are transferrable. Learning them in one context and in one field does not limit a person from using them in many other spaces and fields. He also noted that these skills may be difficult to teach and even harder to assess (e.g., loyalty, self-motivation).

Yet, outcomes for student apprentices are likely linked to these soft skills. For example, agriculture students working with animals in internships reported having greater feelings of calmness, trust, acceptance and appropriate emotional responses (Martin, et al., 2014). Conversely, a negative workplace experience may have devastating consequences for students as they may be unable to separate the quality of the worksite, the supervisor or supervisor's style and the career path chosen. In sum, negative apprenticeship exposure could cause students to reflect negatively on

their career choice (Gamboa, Paixao, & de Jesus, 2013). Thus, considering the quality of apprenticeships is another variable of concern for school districts interested in this process.

Better But Not Perfect

Polesel (2010) justly criticized the Australian VET model because of the lack of emphasis on traineeships and apprenticeships and that the predominant program composition was students from a low socioeconomic status (SES). Polesel postulated that the Australian VET system was propagating two separate class systems: one group of students from middle to high SES that were university-bound where they were going to be prepared to enter high-income careers and a second group of students from low SES who were going to learn only the minimal basic labor trades while in secondary school and remain in low-income occupations and, thus, lower SES. Polesel proposed that for VET to be successful it should be integrated across diverse social statuses, and it should offer a clear pathway to postsecondary training and gainful employment.

Converse to Polesel, Lawy (2010) studied VET education policies in England and Scotland. Lawy conducted a large case study including a research seminar, focus groups sessions, telephone interviews and in-depth individual interviews with youth in England. Lawy argued that although VET training may be a seemingly effective policy approach to making students competitive with skills for high-wage positions in a global economy and that this will equalize economic conditions for marginalized groups, it may not work due to students' culture and context. Specifically, Lawy understood how the policy was crafted to promote equity but also found that students wanted to be near their homes, with the idea of moving or leaving their families for work a seemingly intolerable option. Lawy cautioned that policy narratives that insist students simply need skills and knowledge to be successful may be missing a key cultural component and might fail to produce outcomes if students are asked to pursue education or training (career and educational aspirations) beyond cultural expectations or familiarity without time to develop family and cultural support.

In regard to the Swiss VET model, Masdonati, Lamamra and Jordan (2010) conducted content analysis and an exploratory study of reasons why student apprentices are not always successful in VET. Masdonati et al. interviewed 46 apprentices who dropped out of programs to determine why attrition occurs. Through their analysis, Masdonati and colleagues concluded that transitions from school to work often cause greater stress and difficulty for students for two main reasons: (1) diachronic problems, defined as issues related to transitioning from vocational school to the workplace and (2) synchronic problems, defined as issues related to transitioning in the workplace due to relationships with co-workers, poor training at the worksite or problems in the work environment (e.g. financial stress faced by the company). Masdonati et al. concluded that apprentices need support before making the school-to-work transition and that structures of support should be in place throughout apprenticeships, including if there is a termination needed. These structures should support the apprentice, employer, trainers and educators.

Promising Practices for Successful Apprenticeships

In the counseling field, best practices and promising practices are evidence-based approaches using data to promote client outcomes and to standardize how services are delivered to ensure quality. In P–12 schools, best practices have been developed for career and college assessment; the enhancement of academic rigor; and postsecondary entrance, retention and matriculation. Recently, the Every Student Succeeds Act (2015) replaced NCLB (2002), and now more districts are considering CTE opportunities for students. Within these curricula, students have the opportunity to earn IRCs but also need employability skills. Flexible pathways, including college preparation, career and technical skill development and workplace training, are being creatively forged and produce more options and opportunity for students. Some districts are also creating partnerships to develop apprenticeships; however, no best-practice model exists for how to do this and mitigate standard liability concerns. The purpose of this book is to highlight promising practices for implementing secondary school apprenticeships. This project is not only timely, it could literally change the opportunities and lives of thousands of U.S. high school students by increasing their post-graduation employment opportunities.

According to Child and Family Services (n.d.), a promising practice: (1) incorporates the philosophy, values, characteristics and indicators of other positive/effective public [education] interventions; (2) is based on guidelines, protocols, standards or preferred practice patterns that have been proven to lead to effective public [education] outcomes; and (3) incorporates a process of continual quality improvement. That process of improvement:

- Accumulates and applies knowledge about what is working and not working in different situations and contexts
- Continually incorporates lessons learned, feedback and analysis to lead toward improvement or positive outcomes
- Has an evaluation plan in place to measure program outcomes but doesn't yet have evaluation data available to demonstrate the effectiveness of positive outcomes
- Has strong quantitative and qualitative data showing positive outcomes but doesn't yet have enough research or replication to support generalizable positive public [education] outcomes (p. 24 & 25)

Promising practices are guidelines for success, but all districts and schools starting or refinging apprenticeships programs will have to carefully consider how they review these recommended promising practices in crafting their own policies and procedures. Further, although this book is an attempt to introduce promising practices for apprenticeship success in secondary schools, the importance of the business relationships on which apprenticeships are built cannot be underscored enough.

"Apprenticeships are not philanthropy," said Bradley Revare, director of business partnerships with CareerWise in Colorado, a statewide intermediary for apprenticeships. "Companies that want apprentices are those that (1) have difficulty filling entry-level positions or (2) have difficulty maintaining staff. Philanthropy won't likely last more than a year or two given the time and investment involved in an apprenticeship program. There has to be a real need in an organization that

validates the reason for participating in this type of program. And when there is and the company is successful in finding future workers and developing them, then we can have a mutually beneficial program."

In school systems, our focus is inherently on students. In apprenticeship programs, the nature of the relationship is symbiotic and must be mutually beneficial to be sustainable over time. Industry partners and worksites have to see a positive outcome of student apprenticeship employment to continue investing in the program. This return on investment may take many forms including work productivity, having employees to hire and creating a successful hiring pipeline for the industry. But there must be mutuality, and this is a core principle of the design.

Section Summary

In this chapter, the concepts of CTE, concentrators, nonconcentrators, work-based experiences and apprenticeships were explored. Further, literature on education systems where apprenticeships have been successful was also examined. Finally, promising practices and the role of industry partners was discussed. In the next section, we move on to the establishment of memorandums of understanding, the contractual basis for successful apprenticeship programs.

2

Memorandums of Understanding and Student Placements

Memorandums of understanding (MOUs) are agreements between organizations designating the expectations and roles of various individuals involved in a collaborative effort. Although the American School Counselor Association (ASCA) doesn't provide specific guidance on MOU development, a close entity, the American Psychological Association (APA), does. Regarding apprenticeships, MOUs are critical to the success of students and all parties involved in the program. According to APA, the following elements should be considered in MOU development:

- Details about the type of work or projects to be completed and a time frame for completing work
- Information about expected costs of the work and how expenses will be paid, including by whom and a process or protocol for remuneration
- Guidelines for the use of each organization's marketing materials, such as logos or branding or products
- Media and publicity guidelines for work produced by the collaborative partnership, such as who has permission to speak with the media and when
- Duration of the contract
- Points of contact for the organizations listed in the MOU
- Signatures of key parties

Confirmation that all of these components are critical for educational MOUs came in a study by Frana and Rice (2017). The researchers reviewed best practices in articulation agreement MOUs between two-year and four-year honors transfer students. Although approximately 58 percent of the two-year institutions in the study and nearly 30 percent of four-year universities in the study had honors student

articulation agreements, significantly few honors students matriculated from the two-year institutions to the four-year institutions. Frana and Rice accredited this problem to the MOUs between institutions, namely the poor marketing strategies about the agreements, a lack of strong professional relationships and communication between honors program directors at the institutions that would facilitate students' transfers and nonalignment of programs or difficulty transferring credit hours. It is likely these problems may have been prevented or resolved had the MOUs been revisited or refined to meet these challenges.

If school counselors, parents or students are listed in MOUs, as they likely will be in for secondary apprenticeship programs, then it is essential for them to be at the MOU meeting. This meeting, held before the MOU is signed, is critical as it allows all parties to ask questions, clarify information in the document, make edits if necessary and ensure everyone listed in the document has been given correct and identical information. Signatures on the MOU indicate each participating party's willingness to comply with the parameters outlined in the MOU document.

But how successful are MOUs in producing compliant behavior? There are some key factors that seem to play a role. For example, a study of schools participating in the California Healthy Schools Program (HSP) demonstrated that even when MOUs are signed some parties may not be fully compliant (Madsen, Cotterman, Crawford, Stevelos, & Archibald, 2015). The researchers reported that of the 281 schools chosen to participate in a program meant to reduce body mass index and obesity, no significant effect was found within a five-year cycle compared with schools not chosen to participate. The researchers credited the lack of effect to variability in how individual schools implemented the programs and activities. Moreover, they noted that schools and individuals had no motivation or incentive to participate.

Conversely, there is much incentive for students to participate in apprenticeship programs. Most apprenticeships are paid, many lead to paid tuition for college or technical programs, and students gain desirable work experience. Thus, students are motivated to participate in apprenticeships. Yet, beyond participation, there are still issues that may arise between the school, student and community partner.

In an article about research partnership MOUs between academic and community partners, Ross et al. (2010) suggested several ethical negotiation practices that may help alleviate confusion and ensure each party included in the MOU has its needs and concerns addressed during the expectation-setting meeting. The authors noted the importance of trust and transparency in building sustainable partnerships that rely on relationships with a foundation of mutual respect. This transparency element includes the honest disclosure of any risks to the parties involved. Regarding apprenticeships, honesty in the expectation setting meeting might include opportunities that a student might miss out on by participating in the apprenticeship experience. One school counselor, Tanya Pearce, Mesa County Schools, gave examples such as foreign language, art, and marching band.

Ross and colleagues do bring up a particularly crucial point to underscore; it is important that students and parents understand the MOU. We suggest using the following strategies to increase the likelihood that all parties will understand the

MOU: (1) refrain from using technical language or jargon when discussing the MOU, (2) give each person plenty of time to ask questions, and (3) provide a glossary of terms and acronyms that all parties may refer to throughout the meeting.

Apprenticeship Program MOUs

Kathleen Brenk, a CareerWise human resource strategist, noted that although MOUs need to have structure and definition, they also have to allow for flexibility. She observed that business partners and students both need to have a way out of a relationship that is not working "with the best of intentions." In other words, as Brenk cautioned, even with the most well-designed MOUs, there may be a situation where a student apprentice and an organization are simply not a match for one reason or another, whether the reason is that the student apprentice doesn't end up liking the industry he or she is working in or there are issues regarding student apprentice performance or some other combination of reasons. In essence, Brenk posited that writing the MOU is both an art and a science where the authors want to find a balance. Parties need to feel that by following the MOU guidelines "with the best of intentions," they are likely to have success but should not feel trapped in a situation that is not bringing mutual satisfaction and success.

Mesa County's Pearce, echoes Brenk's sentiment. Pearce stated that students in her school, Monument High School, are asked for a three-year commitment to a particular industry partner. Pearce indicated that this is both a terrific opportunity and also a tremendous commitment, which some students may or may not be fully prepared to make. One thing school counselors and other school faculty can do to help students prepare for this commitment is extensive career exploration in K–8 before high school (see Chapter 7). Because the MOUs are flexible through the partnership with CareerWise, students are not penalized for leaving an apprenticeship if they determine the career choice is not suited for them.

CareerWise uses two MOUs per site. One MOU is for the industry partner, and one is for the student apprentice. The MOU for the industry partner lists the following categories: overview of the partnership, benefits to the company, benefits to the student, responsibilities of CareerWise, expectations of supervisor and coaches, human resource support, ongoing program support, federal support, requirements of the business, evaluation, expect site visits and partnership norms (e.g., how long it might take to get a response from CareerWise). The student MOUs include expectations specific to the students including: attendance, work performance, building competencies, background checks, insurance, description of the work environment (loud, hot/cold, industrial), photo/video release, nondisclosure, supervisor's credentials, school district release from liability, supervisor's role, coach's role, student support specialist's role (school district), CareerWise relationship manager's role (connecting). Both the parents and student apprentice sign this MOU.

Developing apprenticeship sites and considering the long-term relationships between schools, third-party providers, industries and students takes thought and attention to detail. For example, Revare explained some of the parameters he looks

for that would set up success for both the industry and the student. He explained that when determining the number of apprentices a company will hire, CareerWise performs its assessment based on, headcount, capacity and needs. CareerWise will suggest a number of apprentices, but ultimately, the company determines the number of apprentices hired. He underscored the importance of not forcing companies to hire a particular number of students or forcing certain students into the apprenticeship program. The program has to work in a positive way for the companies to continue to support it. He also pointed out there may be instances where a company wants to hire a lot of apprentices, but there are not enough students prepared to go into the job market, and the company has to hire fewer than desired.

Another major issue Revare discussed was student transportation. "We try to make sure that when a business has multiple branches that we have students and schools within a reasonable driving distance of the various branches," he said. "A 20-25 minute drive for the student is our maximum threshold." Revare also noted that for each student apprentice there are detailed plans and specific information contained in the MOUs regarding what types of training courses the company will pay for, the agreed-upon schedule the apprentice will work and details about the type of insurance the company carries. Revare said that for the current MOUs, the school district has liability waivers written in so the schools are not liable for anything that may occur in the work setting. The MOUs only cover the cohort of apprentices that are hired in one year for the entire three-year apprenticeship program. In other words, if a company agrees to hire three apprentices, the MOU will be written for the company and CareerWise for the cohort of three apprentices for the three years the apprentices are hired (11th grade, 12th grade and one year after high school). If an additional three apprentices are hired for three years in a subsequent year, a new MOU is written. This process allows us to make improvements to our process and to change our programs as needed and as we learn more each year Revare said.

Provisions for apprenticeships in industries with hazardous occupations: There may be some concern by school districts, administrators, school counselors and parents about what types of apprenticeships are truly suitable for youth. Specifically, in some career fields, there are real occupational hazards related to the types of equipment or materials an individual is exposed to on a daily basis. A combination of the student apprentice's personal maturity and the supervisor's ability to provide clear instruction that is consecutive and sequential, as well as close supervision when imminent danger is involved in work duties, are important factors to consider. Guidance on hazardous occupations and apprenticeships is provided in some industries. For example, although minor employees might not be able to work in certain hazardous conditions, the U.S. Department of Labor specifies exemptions for youth apprentices as student-learners (ages 16 and 17 years old). These exemptions only apply if the student apprentice meets the following criteria:

- the apprentice is employed in a craft recognized as an apprenticeable trade
- the work of the apprentice in the occupations declared particularly hazardous is incidental to his or her training

- such work is intermittent and for short periods of time and is under the direct and close supervision of a journeyman as a necessary part of such apprentice training
- the apprentice is registered by the Bureau of Apprenticeship and Training of the U.S. Department of Labor as employed in accordance with the standards established by that bureau or is registered by a state agency as employed in accordance with the standards of the state apprenticeship agency recognized by the Bureau of Apprenticeship and Training or is employed under a written apprenticeship agreement and conditions which are found by the secretary of labor to conform substantially with such federal or state standards

Brenk suggested school counselors and districts seek to understand any restrictions on student labor provided in guidelines by their respective states as well. Further, CareerWise, as a third-party vendor, provides students and families with applicable information about the worksite environment (e.g. industrial environment, business environment, atmospheric conditions). For instance, students exposed to elements for long spans of time may need additional safety training on hyper/hypothermia and dehydration. Any potential hazards a student apprentice might be exposed to are also provided in the MOU contract. "For example, if an apprentice were going to be exposed to 85 decibel level noise frequently, equivalent to the sound of a bulldozer idling, the apprentice would be expected to wear ear plugs in the environment."

There are many resources available. Depending on the type of work student apprentices partake in, safety training may need to be part of the overall program. Ensuring that workplace supervisors and industry partners have developed a plan for introducing student apprentices to all levels of safety, even seemingly basic safety, is essential.

MOU Recommendations

MOUs are the foundation for successful partnerships. Beyond setting expectations, MOUs give each party context for how the relationship will be managed in the future. Because apprenticeships are a partnership between an educational institution, a student and a company, having common and clear language and goals known to everyone in the relationship is vital to the partnership's success. In this section, we highlight recommendations for promising practices when constructing MOUs for secondary school apprenticeships.

Articulation of expectations of all parties is essential (Mooney & Scholl, 2004). Further, it is important that all parties are present at the MOU meeting and that each person is given the opportunity to ask questions and request changes or edits as might be necessary. Read the following case study and discuss.

MOU Recommendation One:

Ensure all parties are present at the MOU meeting and each person has the opportunity to ask questions and request changes.

1

CASE STUDY 2.1

Katrina's Parents

Katrina is an 11th-grade student at Hampton High School. She has been working toward an industry-based certificate in welding. Katrina has just received notice she was selected for an apprenticeship with a local industry partner: Sampson Metals and Fabrication. Katrina is excited about this opportunity. The district's third-party apprenticeship provider has set up a meeting with Katrina's supervisor, job coach, Katrina, her school counselor and her parents. However, Katrina's parents, own a small barbershop where they are the sole workers. Her father is the barber, and her mother takes care of scheduling, bookkeeping and cleaning the shop. Her parents work from 9 a.m.–6 p.m. daily. When asked to attend the MOU meeting, they say it is simply not possible because there would be no one to run their barbershop. Her father wants his daughter to have this opportunity, and he is grateful. He states, "Just send the papers home, and we will sign them."

Discuss in a small group:

1. Is it essential that the parents attend the MOU meeting? Why or why not?
2. What might be some creative solutions to this issue?
3. How would you express to the parents your concern about their attendance?

MOU Recommendation Two:

Ensure all parties understand the MOU terms and conditions and the benefits and risks in common language.

2

Regarding the apprenticeship program, it is important that individuals really understand the commitments they are being asked to make and the duration and frequency of these commitments. Also, if there are risks to safety or any other risks (e.g., academic, social), this is also important information to convey at the MOU meeting. All parties should also know the anticipated benefits of program participation (e.g., compensation, course credit). Review the following case study and discuss.

CASE STUDY 2.2

Ha-Joon's Father

Ha-Joon, a Korean student, lives with his father. Ha-Joon has been offered an apprenticeship with the city government in the recordkeeping and digital archives department. Ha-Joon is excited about this opportunity, and he and his father attend the apprenticeship meeting. The school counselor mentions that Ha-Joon's apprenticeship hours (8 a.m.-11 a.m.) will conflict with symphony, and he currently plays trombone. The band teacher has expressed that Ha-Joon has enough talent for a college scholarship in symphony. During the MOU expectations meeting it is explained to Ha-Joon and his father that if he accepts the apprenticeship, he will no longer be able to participate in school symphony. Ha-Joon seems disappointed but says okay. His father just smiles and nods and does not say anything; he does not seem to understand English very well. When asked if he understands he says, "Yes, yes, uh trombone."

Discuss in your group:

1. What concerns do you have about Ha-Joon and his apprenticeship placement?
2. What concerns do you have about Ha-Joon and his father signing the MOU?
3. What cultural issues might be occurring in this meeting?
4. How might you assess whether or not Ha-Joon understands the costs and benefits of this apprenticeship and whether or not he fully agrees to this arrangement?
5. What creative solutions might you be able to brainstorm with the city government supervisor?

MOU Recommendation Three: 3

Revisit or refine the MOU as needed.

The ultimate goal of an apprenticeship is students' career and postsecondary success and the development of a reliable, employable workforce for community partners. It is important to recognize students' developmental nature and to have flexibility where necessary but firm parameters where necessary as well. Reivew and discuss the following case study

CASE STUDY 2.3

Case Study 2.3: Jarius

Jarius is in his second year of an apprenticeship and is a high school senior. His apprenticeship is in the afternoon at a local manufacturing plant where he does data management. Jarius has a long-term goal of being a programmer, and he likes the idea of working in data analytics. This year, for the first time, his school is having a robotics competition, and his science teacher has asked him to consider participating on the team. To do so, he would need to be back at school at the end of the day. Jarius believes this would help him with his long-term goal because he could be the programmer on the school's team. Jarius has been successful in his apprenticeship so far and met all of his competencies last year. His supervisor at his worksite is supportive and understanding, but if he switches his work hours, he would need to be reassigned to a different supervisor because his supervisor works in a different office in the afternoon.

Discuss with your group:

1. Does Jarius have a compelling reason to change his apprenticeship schedule? How might the robotics team benefit him? How might changing his schedule have a negative impact?
2. Is this an acceptable reason to change the MOU?
3. Who must agree to the new terms and conditions before the MOU can be altered?

Ensure all parties know what information will be shared from the outset, keeping in mind that educational entities function under strict regulation of the Family Educational Rights and Privacy Act and employers must protect employees' files under regulations set forth by the Equal Employment Opportunities Commission (1992). Therefore, determining what information is necessary to share, and how it will be shared among all parties, is an important part of this process.

For example, if a student apprentice will be earning math credit for an apprenticeship while working at an information systems company, then information about competencies the student apprentice has acquired at the worksite that align to math skills will be important for the school to assign the student apprentice a grade and, ultimately, course credit. Similarly, a business may have an agreement to keep an apprentice for two years while in high school and potentially for a third year once that student apprentice has earned six hours of concurrent, or dual, enrollment hours in an industry-based certificate through a local community college. In order to share transcripts or information regarding the student apprentice's certificate progress, the student apprentice's school counselor will need express permission to do so based on FERPA guidelines. If this type of information is going to be shared, all parties need to have documentation about the information sharing agreement. See Appendix A for sample documentation. The MOU expectation meeting is a good time to determine what types of information will be shared and to develop documentation for information sharing agreements.

Finally, when working with industry partners, Revare mentioned that it is important to align industry-generated competencies to the expectations for the apprentices hired. However, each company should be given flexibility to train student apprentices on additional skills specific to the company. This layer of nuance, additional company specific training, is important to assist student apprentices in acculturating to the individual company and to solidify the company's investment in the individual apprentice.

Section Summary

MOUs are a critical component of the apprenticeship program. A well-written MOU allows all parties to understand fully each person's expectations and roles, the scope of the partnership and the apprenticeship timeline. The MOU establishes a foundation for the relationship, how the relationship will be managed, how progress will be monitored and, ultimately, how the relationship will end or evolve. The importance of MOUs cannot be emphasized enough. They are more than a formality; a MOU is an opportunity for all parties to feel understood, to gain clarity and to begin to develop earnest trust and rapport.

MOU Section Review

1. What key elements of a MOU do you think are most important for apprenticeship placements in your school/district?
2. What terms or acronyms would you include in a MOU glossary? Create a list.
3. What are some acceptable reasons to renegotiate a MOU? What might be some unacceptable reasons?
4. MOUs need to give all parties a way out of the partnership, "with the best of intentions." What types of behaviors and mindsets will supervisors, students and parents display at the beginning of the partnership that demonstrate they are starting the apprenticeship program with the best of intentions?

3

504 Accommodations

Compared with K–12 schools, workplaces have differing levels of support they are legally required to provide in regard to disabilities. As noted by Severance and Star (2011), although most K–12 faculty know how to implement classroom accommodations for students, knowing how to design and implement accommodations for experiential learning may present practical challenges for educators. Teaching students to navigate employment, their disabilities and to enjoy workplace success is an achievable goal but one requiring knowledge and skills. In this section, we address how to help prepare students and parents for the workplace transition and how to empower students to be self-advocates. We begin with a literature review and move on to specific recommendations for promoting promising practices for students with 504 plans who are seeking apprenticeships.

Any discussion of 504 rights is remiss without defining a few terms. The term 504 generally refers to section 504 of the Rehabilitation Act of 1973, the law governing the protection of students with disabilities specifically in programs and activities receiving federal funding. To qualify for 504, a student must have documentation of a physical or mental impairment that substantially limits a major life activity. Because every impairment will not substantially limit a major life activity, the U.S. Department of Education provides the following guidance:

> The determination of whether a student has a physical or mental impairment that substantially limits a major life activity must be made on the basis of an individual inquiry. The Section 504 regulatory provision at 34 C.F.R. 104.3(j)(2)(i) defines a physical or mental impairment as any physiological disorder or condition, cosmetic

disfigurement or anatomical loss affecting one or more of the following body systems: neurological; musculoskeletal; special sense organs; respiratory, including speech organs; cardiovascular; reproductive; digestive; genito-urinary; hemic and lymphatic; skin; and endocrine; or any mental or psychological disorder, such as mental retardation, organic brain syndrome, emotional or mental illness and specific learning disabilities. The regulatory provision does not set forth an exhaustive list of specific diseases and conditions that may constitute physical or mental impairments because of the difficulty of ensuring the comprehensiveness of such a list.

Public schools are required to provide students with an identified, qualifying disability a free appropriate public education (FAPE). This FAPE means students with disabilities in K–12 public schools are to receive aids, services or programs such that their educational needs are met as adequately as students without disabilities. However, for postsecondary education, students with disabilities must meet the same academic and technical requirements for admission as students without disabilities. Once admitted to the postsecondary level, educational institutions are required to provide academic adjustments and auxiliary aids that are sufficient enough to allow individuals with disabilities an equal opportunity to participate in educational programs. Noteworthy, at the postsecondary level, accommodations do not have to be made at a level that fundamentally alters a program or imposes an undue burden.

ADA and EEOC Protections

Upon entering the workforce, individuals with disabilities are protected under the Americans With Disabilities Act of 1990. The protections provided by this law are overseen by the U.S. Equal Employment Opportunity Commission (EEOC) and include nondiscrimination in the following areas: hiring, termination of employment, pay, promotions, layoff, fringe benefits and job assignments. Reasonable accommodations should be made in the application process for employment, the work environment and to equal benefits and privileges nondisabled employees enjoy.

Employers are required to make reasonable accommodations for otherwise qualified employees unless it causes the employer undue financial hardship, and it is generally the employee's responsibility to request any necessary accommodations. However, undue financial hardship for each company is context-based. Brenk gave the example that an accommodation costing $10,000 may not be a hardship to a mega corporation employing thousands of employees, but to a small-business owner with fewer than 10 employees, $10,000 may constitute a financial hardship. Therefore, flexibility is built into the law because the requirements are exacted differentially based on these types of company metrics. Following is a list of possible reasonable accommodations employers may need to provide: making existing facilities accessible; job restructuring; part-time or modified work schedules; acquiring or modifying equipment; changing tests, training materials or policies; providing qualified readers or interpreters; and reassignment to a vacant position. Of importance to apprenticeships, the Americans with Disabilities Act (ADA) pertains to both full and part-time employees.

Despite protection through 504 and ADA, legislation concerning students with disabilities has increased over the last four decades to create a pathway for successful school-to-work transitions for students (i.e., Carl D. Perkins Vocational and Technology Educational Act, 2006; Individuals with Disabilities Education Act, 1997; Section 504 of the Americans with Disabilities Act, 1973; Workforce Investment Act, 1998). The need for these legislative changes is evidenced by critical employment data; in particular, unemployment and employment inequalities for individuals with disabilities persist in spite of legal protections.

For example, the average U.S. unemployment rate for individuals ages 16–64 is 4.7 percent, while the unemployment rate for individuals age 16–64 with a disability is 11.5 percent (U.S. Bureau of Labor Statistics, 2017). However, individuals can be unemployed for a variety of reasons; therefore, employment rates are a stronger example of variance between groups. In August 2014, for individuals ages 20–24 with an identified disability, the employment rate was 31.6 percent. Comparatively, in the same time period, individuals ages 20–24 without an identified disability, had an employment rate of 65 percent (Office of Disability Employment Policy, n.d.). Further, the median monthly income for employed individuals with a disability was $1,961, while employed individuals without a disability reported a median income of $2,724 (U.S. Census Bureau, 2013).

As part of the Workforce Innovation and Opportunity Act (2014) school-to-workforce transition is required for all students with a disability through pre-employment transition. However, how this transition occurs for each student is highly variant, and there is flexibility depending on the individual's disability and needs. Further, there has been research suggesting schools may not adequately prepare students with disabilities for workplace transitions through employability skills education. For example, Guy, Sitlington, Larsen and Frank (2009) conducted a statewide study of patterns of employment preparation courses and found that career and technical education was the primary source of employment preparation. Indeed, career and technical education superseded an integrated approach in the whole curriculum, and technical skills were the main focus of instruction rather than general employability. More disconcerting, combined methods of instruction and workplace experiences, the ideal approach to gaining workplace and employability skills, was the least-used approach to employment preparation found in the study.

An apprenticeship may be one ideal type of program suitable for the transition experience in regard to building the skills, workplace knowledge and employment dispositions students with disabilities will need upon entering the workforce. Indeed, in an analysis of National Longitudinal Transition Study-2 data over a 10-year period, Carter, Austin and Trainor (2011) found that youth with disabilities that had vocational goals written in their individualized education programs (IEPs) had six times the likelihood of obtaining paid work while in high school. Unfortunately, as noted by Samuels (2015), many of the apprenticeship placements and workplace experience opportunities that have historically been afforded to students with disabilities have been established and coordinated by special education teachers, teaching assistants and family members. This is problematic for a number of reasons such as: a) the inordinate amount of time allotted by staff to calling and meeting with employers;

b) teachers and teachers aides often lack expertise in student career preparation and workplace transition education, staffing and employment; and c) teachers and teachers aides may not have much success getting companies to equitably pay students with disabilities for apprenticeship work.

Student Apprentices With Disabilities

Despite some flaws in coordinating placements, the outcomes for students with disabilities who participate in apprenticeships demonstrate significant results. For example, Scholl and Mooney (2004) studied Wisconsin's two-year high school apprenticeship program. Students participated in an industry-recognized curriculum (e.g., manufacturing, drafting, graphic arts, information technology, animal science) and 10-15 hours per week of paid apprenticeship work at an approved site under mentor supervision during their junior and senior year of high school. At the program's conclusion, the students received their regular high school diploma, an industry-recognized certificate of occupational proficiency and were eligible for advanced standing credit at a technical college. Scholl and Mooney conducted 19 qualitative case study interviews with former apprenticeship program participants who had identified disabilities during the years they participated in the Wisconsin apprenticeship program. The researchers asked the former participants about their reasons for participating in the program, challenges they faced in the workplace because of their disabilities, what supports or accommodations they received, how those supports or accommodations were identified and coordinated, employment or training after high school and the extent to which the participants discussed their disabilities at their worksites. Scholl and Mooney also identified 15 parents, teachers and apprenticeship coordinators of the participants to interview. Further, the researchers reviewed cumulative files for the participants and focused their findings on supports and accommodations.

Scholl and Mooney noted that 68 percent of the apprentices participating in their study did not need any workplace accommodations. Of those that did need accommodations or modifications, there were not many utilized, including: a modified schedule (16 percent), special education teacher visiting the worksite (16 percent), special education teacher observing the student on the job (16 percent), in-house academic skills (11 percent), periodic evaluation of soft skills (11 percent), special education teacher speaking with mentor (11 percent), student provided books/manual for home study (5 percent). For Scholl and Mooney's sample, two-thirds of their participants did not disclose their disability because they did not think it would interfere with their work. Of the one-third that did disclose, they perceived their employers to be receptive to the disclosure about their disability. However, for those that did disclose they had a disability, they were not generally informed about what accommodations could be provided. Scholl and Mooney hypothesized that students may not have been informed about potential accommodations because the supervisors were not 504/ADA experts and simply did not know what accommodations to provide. Finally, Scholl and Mooney also found that for participants enrolled in the technical college, the instructors at the technical college did not appear to have pedagogical strategies specifically for teaching high school students.

Similar to Scholl and Mooney's finding that supervisors were receptive to students with disabilities but did not inform the students of possible accommodations, other researchers have also found barriers that exist for students with disabilities who wish to participate in a workplace apprenticeship. Many of these potential barriers to quality apprenticeships for youth with disabilities likely stem from perceptions of what the experience will require from community partners. For example, Carter et al. (2009) studied 135 chambers of commerce and similar employer networks. The researchers asked about the extent to which it was feasible for these organizations to be involved in 18 youth career development activities (i.e., job shadowing, offering mock interviews) and the influence of disability on the participant's responses. Overwhelmingly, these organizations stated that supporting youth career development was part of their mission and that the majority of the activities were feasible. However, once students' disability was introduced as a potential factor, employers were significantly less likely to find engaging in career development activity as feasible.

Moreover, some disabilities may be more misunderstood than others. These misunderstandings may lead to a greater likelihood of discrimination. Roessler, Hawley and McMahon (2012) illuminated how employers' misinterpretations of youths' disabilities may lead to inequities. Roessler et al. conducted a comparative analysis of EEOC complaints filed by youth with epilepsy (N=555) and a group of youth with general disabilities (N=12,663) who had also filed complaints with the EEOC. For both groups, there were five primary reasons for the complaints filed: 1) discharge, 2) reasonable accommodation, 3) hiring, 4) harassment and 5) terms and conditions of employment. However, significant differences occurred in that youth with epilepsy were statistically significantly more likely to file a complaint due to discharge (more than half of all complaints were due to discharge). The second area of significance is that youth with epilepsy had significantly higher levels of complaints resulting in merit resolutions (33.2 percent) compared with youth in the general disabilities group (27.9 percent). Roessler et al. gave specific suggestions for more workplace disability awareness training, accommodation planning and the need to understand the impact on an individual who has seizures in the workplace.

Teaching self-advocacy skills: Samantha Haviland, Ed.D., director of support services, Denver Public Schools, explained that preparation for students with disabilities for transitions to work and college begins with understanding their disability and how the disability accommodations may look different in postsecondary educational settings and work. "In ninth grade, the 504 coordinator talks with the student and family about what the expectation in higher education is on the modification side and what reasonable accommodations higher education institutions are likely to make," Haviland said. "Then we work with that student and family to prepare them. When I was a school counselor I might have a student who had 35 different modifications. I had to help students understand the difference between accommodations and modifications and what might not be reasonable in a higher education setting that the student might have received in middle school or high school. I would teach them how to advocate for themselves but also how to work at the level of reasonable accommodations a university or employer will realistically provide for them."

Self-advocacy skills and career-transition knowledge are a critical part of the 504 plan according to Bolton. She noted that self-advocacy for both postsecondary and the workplace is a goal she regularly writes into 504 plans. Similarly, career-transition information should consist of how disabilities and career fit might need to be considered if the disability inhibits the individual from performing a necessary function of a particular type of work. Instead, a student may have to consider a related career if he or she would not be able to perform necessary functions of the job with reasonable modifications. Explaining this to parents and students early and often is important, and giving examples is key. Severance and Star (2011) provide the following questions for helping students and parents consider if an apprenticeship site might be an appropriate placement for the student.

- Is the placement accessible?
- What are the functional requirements of the apprenticeship? Can the student meet these requirements?
- How much time is needed to implement certain accommodations?
- Is there an outside vocational agency involved (e.g., Board of Educational Services for the Blind)? (p. 203)

Assisting students hesitant to disclose a disability: Students and parents also need to understand the importance of accurate disclosure about a disability, and students need opportunities to develop self-advocacy skills. "In high school, students don't want to be singled out," Pearce said. "They don't want to look different, they don't want to ask for help, because that makes them embarrassed, so they might not disclose things they actually need." Piaget (1977) wrote that adolescents do develop a form of egocentrism that lends to self-consciousness and viewing oneself from a third-party perspective. This can create a sense that one is exposed, increase feelings of vulnerability and instill a high need to conform to social norms or fit into culturally acceptable standards of behavior and physical appearance. Therefore, being seen as having a disability may make students feel particularly self-conscious; thus, hiding the disability or denying it is not unusual, but in terms of securing work and being successful, it may prove to be problematic.

Tricia Burns, a school counselor at Central High School in Grand Junction, Colo., shared that in a case where an apprentice did have a disability that may make a placement unfeasible, such as a student who wanted to operate heavy machinery but suffers from long-term vertigo, she would assist the student in considering other options. "That may not be a job they can have," she said. "They may need to instead explore something in that field of interest. Instead of operating heavy machinery, maybe they are working in a machine factory doing machine design. So they are still involved in the industry. But there may be some things they can't do, and that's the way it is for all of us; everyone has things they can and can't do, things they excel at and things they are more limited in. There are always things we can't do, but that doesn't mean we can't be strong in some other capacity.

Burns gave another great example. Consider a student who has autism spectrum disorder and tends not to be able to pick up on social cues easily. If that student applied for a service-industry position, there may or may not be reasonable accommodations in terms of heavy customer service, but there may be other suitible work in the field such as working in the office and learning about the business aspects

of that particular service industry. Severance and Starr (2011) suggested faculty, such as school counselors and CTE or apprenticeship coordinators, should discuss with students with a diagnosed disability whether or not the worksite is a realistic placement (i.e., a good match for the student's specific abilities) and whether or not disclosure is necessary.

The U.S. Department of Labor, Office of Disability Employment Policy, has a helpful resource with guidelines for assisting students in considering when and how to disclose their disability to a potential employer. This resource, "Youth, Disclosure and the Workplace: Why, When, What and How" (*www.dol.gov*), is a useful tool for beginning a conversation with students and covers the following:

- Why a person would want to disclose a disability (i.e., protection from discrimination in the workplace, disclosure is required to obtain reasonable accommodations)
- When a student might choose to disclose a disability to a potential employer and advice about weighing the pros and cons of each venue of disclosure (i.e., disclosing during at application, disclosing during the interview, disclosing after the job offer)
- How to disclose a disability
- What to disclose about the disability (e.g., key information about the disability, how it may affect performance, accommodations that have been effective in the past)
- To whom the disability should be disclosed
- Disclosure protections and responsibilities

School counselors may wish to cover this information in one-on-one meetings with students who have 504 plans and are considering applying for apprenticeships. Information might also be useful as a link on the school counselor's website. A free, downloadable resource is "The 411 on Disability Disclosure: A Workbook for Youth with Disabilities" available from the National Collaborative on Workforce and Disability for Youth. Alternatively, school counselors may wish to have an evening workshop for students with disabilities applying for apprenticeships and their parents to facilitate some of the activities in the workbook.

504 Apprenticeship Recommendations

Because secondary school apprenticeships are new territory for many schools and districts, it is important to remember students are accustomed to receiving support provided under 504, and that in the workplace, they will be receiving support under the ADA. For school personnel, it is impossible to know with certainty that students rights will be protected in the workplace as apprentices, but the recommendations set out below are meant to help school counselors create the best transitions possible for students with disabilities.

504 Recommendation One:

Provide career-transition information, for both parents and students, during eighth-, ninth- and 10th-grade years (pre-apprenticeship) that comprehensively addresses issues specific to students with disabilities.

1

Not every opportunity is right for every student. Mesa Valley's Vanderlinden informs parents and students that although all students are welcome to apply for apprenticeships, not every student is chosen for the program because many factors are weighed in the decision: interests, abilities, students' level of commitment, attendance, grade point average, adequate progress in school and personal fit for the worksite. This information is essential as it prepares students and parents for the expectations of the program. By receiving this information early (eighth and ninth grade), students and parents are knowledgeable of the criteria and how to prepare if the apprenticeship program is something students want to pursue.

504 Recommendation Two:

Disability training should be provided for all site supervisors.

2

Disability training should be provided for all site supervisors. Although not every site supervisor will have a student with a disability or a student with a disability that requiring accommodations, it is important for all apprenticeship supervisors to have this training and development. One critical reason is that a student may develop a disability at any time, but there are other potential issues. In another study conducted by Mooney and Scholl (2004) of Wisconsin's Youth Apprenticeship program, nearly 70 percent of coordinators and instructors working with youth with disabilities in the apprenticeship program felt inadequately prepared to work successfully with students with disabilities. Indeed, respondents in Mooney and Scholl's study believed making accommodations was an important part of their job (60 percent–80 percent of respondents) but less than half of them actually did (24 percent–50 percent of respondents). Mooney and Scholl attributed the low performance of accommodation to coordinators not knowing expectations for how to work with students with disabilities. Read and discuss the following case study.

CASE STUDY 3.1

Leo's Disorganization

Leo, a high school junior, was hired as an apprentice at Lenbrock Industries, a manufacturer of bicycle parts. Leo's job was to assemble spokes for wheels, and he enjoyed this work as he was an avid BMX rider and competed in BMX off-road racing. Although Leo did a fine job assembling parts, Callie, Leo's apprenticeship supervisor, had noticed his workspace was constantly in disarray. She decided to give him feedback on this during an informal mentorship meeting. Leo listened to the feedback, and then told Callie he thought he might do better if he received accommodations because he was diagnosed with ADHD, and one of the accommodations he used to have was for organization. He explained that in ninth grade he was given help organizing folders for each of his classes by color and that at home his mom organized his school materials into colored baskets for each class. He told Callie it also helped when his ninth-grade teachers gave him extra time in class to get organized. Callie thanked Leo for sharing this information.

A few weeks later, when Leo's school counselor, Mr. Thompkins, called Callie to check on Leo's progress, Callie shared that she had helped Leo improve his performance in the workplace by providing the accommodation of helping him get organized. She explained she had given him colored bins with labels and extra clean-up time at the end of the day to organize his materials and even provided him a clean-up checklist each day. Mr. Thompkins, although grateful for Callie's kindness, was concerned because none of these accommodations were agreed upon. Further, Leo had made progress during his freshman and sophomore year and currently didn't need organizational assistance at school.

Discuss the following in a small group:

1. What skills did Leo display that are positive in this scenario? What concerns do you have about how the accommodations were implemented?
2. Did Leo really need the accommodation, or did he just need the opportunity to learn to get organized and follow the daily protocol?
3. Could Leo have taken the steps to organize himself and his own bins?
4. If you were Mr. Thompkins, how would you move forward at this point?

To avoid situations such as Leo's, a better approach is to have all supervisors introduced to 504 through training. This training may be provided through the school district or a third-party provider. The primary reason for this approach is that any student, at any time might develop a disability. Additionally, it is best that everyone has a basic understanding of 504. Things to include in the disability training might be: (a) an explanation of the differences between 504 and ADA, (b) definition of an accommodation and definition of a reasonable modification, (c) what a 504 plan is and (d) when to provide accommodations.

504 Recommendation Three:

504 paperwork should be amended to note agreed-upon accommodations for the workplace.

3

504 paperwork should be amended to note agreed upon modifications for the workplace or learning accommodations that will be made in the workplace (Guy et al., 2009). Steve Schneider, school counselor, Sheboygan South High School, Sheboygan, Wis., said one way to accomplish this would be through calling the parents and saying: "Your son or daughter is about to undertake an apprenticeship at a place of employment. It's clear that the 504 and accommodations that have been necessary here at school aren't going to translate to work. Your son or daughter may need accommodations at work as well. We need to reconvene this meeting and have the employer there."

Schneider further noted that this meeting might occur out of the normally scheduled meeting time. "You do the 504 amendment meeting when you need it," he said. In other words, if a school counselor generally does 504 meetings in the fall but the student is starting an apprenticeship in the summer, then the meeting needs to coincide with the apprenticeship. As Burns says, 504 plans are fluid, dynamic documents that are meant to be flexible to meet students' needs, so amending the plan as needed for apprenticeships is optimal. She also pointed out that having an apprenticeship supervisor present for the discussion of accommodations would be ideal as long as the invitation for the supervisor to attend is extended by the student and parent or with their permission. Brenk with CareerWise also pointed out that human resource managers, as well as supervisors, may want to be invited. EEOC has strict compliance regulations about disability in the workplace, and HR managers and supervisors are often the only individuals in the workplace with any knowledge about the agreed-upon accommodations.

Brenk cautioned that these regulatory measures are highly prescriptive and that HR managers will not be able to share information about employees without employee and parental consent. Therefore, Brenk suggested having a form that allows the supervisor or HR manager to share information with the school about accommodations and vice versa. School districts deciding to use such a form may also consider utilizing the form to document invitations from the school to the HR manager and supervisor to attend 504 meetings at the school (see Appendix B for a sample form). School counselors should encourage students to disclose the disability and advocate for their own needs. Review and discuss the following case study.

CASE STUDY 3.2

Rachel's Migraines

Rachel has had severe migraines since she was in middle school. The migraines occur on average about one time per month. Her symptoms include seeing spots, acute throbbing pain particularly behind the eyes, light and sound sensitivity and extreme nausea. She is currently on Topamax to help prevent the migraines. Once a migraine begins, she is under medical advice to go home, lie down in darkness and silence, take Thorazine for the nausea and take Zomig for the migraine.

Rachel is a hard worker and a good student. She applied for an apprenticeship in computer programming and was hired for the following school year. Her school counselor, Ms. Johnson met with Rachel and Rachel's father. Ms. Johnson encouraged Rachel to disclose the information about the migraines to the apprenticeship site supervisor so accommodations could be made in the event Rachel has a migraine during work hours or at the job site. Rachel and her father agree this is in Rachel's best interest so Ms. Johnson asks if Rachel would invite her supervisor to the meeting. Two weeks later, Rachel, her father, Ms. Johnson and Rachel's supervisor meet to discuss Rachel's health concerns and to amend the 504 plan to include Rachel's apprenticeship site accommodations.

Discuss the following in a small group:

1. What are some reasons why students might not want to disclose a disability to a future employer?
2. Why might parents discourage their children from disclosing a disability to a future employer?
3. What should school counselors do if they believe a student's rights have been violated due to a disability? For example, if a student who is otherwise qualified does not get hired, what recourse might the student have?

504 Recommendation Four:

Assist students and families in understanding the importance of accurate disclosure and how to discern if and when a disclosure should be made. Explain the language of reasonable accommodation.

4

Students with disabilities need to understand their rights regarding disclosure of disabilities if the need to disclose should arise. In a few rare cases, a student might not want to disclose a disability for fear of not being hired. However, if not disclosing places the student, or others, at risk of serious harm, school counselors and other educators should consider the limits of FERPA and ethical obligations for safety. Although this may be a rare occurrence, it is worth considering how your district

might handle a situation like this if it were to arise. One potential way to approach a situation where students and parents are worried about infringement of 504 rights is to prepare the student for interview questions that are both legal and illegal. Helping students understand boundaries of legal and ethical questioning in the interview process can help students recognize when disclosure may be helpful. For instance, Severance and Starr (2011) give lists of actual illegal and legal questions students may practice answering that might lower their angst regarding appropriate disclosure. It is important to remind students that companies are not required to provide accommodations if disabilities have not been disclosed, and not disclosing may lead to more harm than good in some cases. Review and discuss the following case study.

CASE STUDY 3.3

Dylan Won't Disclose

Dylan and his parents have a meeting with the school counselor and district apprenticeship coordinator to discuss Dylan's apprenticeship offer. Dylan has been offered an apprenticeship with a large building contractor. The district apprenticeship coordinator brings the job offer in and lets Dylan and his parents know that the work he will be doing is mainly carpentry, which does involve heavy lifting, climbing ladders, working on scaffolds and other dangers. Dylan is excited, and his parents agree to the apprenticeship. Dylan's school counselor, Ms. Davenport, asks if she might speak with the family privately. The apprenticeship coordinator leaves the room.

Ms. Davenport encourages Dylan and his parents to disclose that Dylan has a seizure disorder as some of this work may be dangerous for dealing with heavy machinery. Dylan has had two seizures at school in the last month, both requiring medical attention. Dylan says he does not want to disclose because if he does, he won't get the job. Ms. Davenport explains that there may be things that can be done to modify, such as having him work with a harness on. Dylan's mother asks if the school can guarantee the contractor will still hire Dylan. Ms. Davenport explains that if he can do the job with reasonable accommodations he may be eligible for consideration for hire and that they will have to meet with the company's HR manager to see if Dylan can meet the requirements of the job with reasonable accommodations. Dylan and his parents say that if he is not guaranteed the job, they won't disclose. Ms. Davenport explains that if Dylan doesn't disclose, he may be putting his own life in jeopardy. She implores his parents to consider what might happen if he has a seizure while up on a ladder and he falls. His dad says they will leave the decisions to Dylan.

Discuss the following in a small group:

1. What should a school counselor do if a student refuses to disclose a disability the school counselor believes might put a student at harm?
2. In Dylan's situation, would the school counselor be breaking FERPA to explain the situation to the district apprenticeship coordinator?

3. Review the ASCA Ethical Standards for School Counselors, particularly A.2. Confidentiality. What parts of this standard apply to this scenario? How might the school counselor in this scenario explain parameters of confidentiality and serious and foreseeable harm? With whom should the school counselor consult before breaking confidentiality?

Section Summary

Students with disabilities have specific rights that should be observed during academic and career advisement as well as in the transition to workplace. Apprenticeship programs conflate all of these experiences for students with disabilities; therefore, it is important that school counselors are prepared to assist students in developing self-advocacy skills, understanding their rights and navigating the natural changes that occur as students move from school to the workforce. Fortunately, school counselors have time to be proactive,

Topics covered in this section included key terms and definitions, pertinent literature, and best practice recommendations for 504 and secondary apprenticeship programs.

504: Group Activities

Activity One: In your group discuss: Before reading this section, what concerns did you have about 504 and apprenticeship programs? After going through this section, what concerns do you now have? As a group, discuss who you will contact as issues arise regarding 504 and apprenticeships. Who will you consult at the school level? District level? State level?

Activity Two: In your group, discuss each of the following. Determine if the request is an example of a reasonable accommodation or not.

1. Tyrone has been hired at a local software development company for his apprenticeship. Tyrone has degenerative disc disease. Although he can walk, he has chronic back pain when sitting for long periods of time, particularly in certain types of chairs. Tyrone has requested an ergonomic chair for his work to reduce his pain and discomfort. Is this a reasonable accommodation? Why or why not?
2. Dayna has multiple sclerosis and, at times, has muscle weakness, spasms in her legs and numbness in her feet. She also feels dizzy from time to time. She is applying for an apprenticeship position at a local hotel and would like to request, if offered, that when working at the front desk in the hotel lobby where she will be registering guests, she be allowed to sit on a stool when she feels it is necessary. Is this a reasonable accommodation? Why or why not?

3. Parker is an apprentice at a manufacturing plant. He has a substantial hearing impairment for which he is already receiving accommodations at his worksite. He approaches his supervisor and says that the afternoon traffic is irritating, and he would like to adjust his schedule to come in one hour earlier in the morning and leave one hour earlier in the afternoon. Is this a reasonable accommodation? Why or why not?

Activity Three: In your group, take turns role playing. One individual should play a parent, one a student, one a school counselor. Explain to the student and parent what an apprenticeship is and how workplace accommodations differ from educational accommodations. Answer questions the parent and student might have. Switch roles and role play again. Repeat until each person has had a turn playing the school counselor.

4

Identifying and Training Supervisors: The Role of Feedback and Evaluations in Apprenticeship Programs

An apprenticeship can be a wonderful opportunity for both the student and the employer. One way to ensure apprenticeship experiences are the best they can possibly be is to recruit the right worksite supervisors. Supervisor selection is critical to the program's success because the relationship between supervisor and supervisee is based on more than just the development of the student apprentice's skills and competencies. The characteristics of the apprentice-supervisor personal relationship (i.e., rapport, mentoring, trust, goodwill) are also necessary for student apprentice development and growth. Thus, the selection of worksite supervisors is an integral component of the process. Indeed, the apprenticeship supervisor is selected to supervise apprentices for specific reasons. Lauren Trent from CareerWise describes the ideal supervisor as someone who is strong from a management perspective and may only be a few years older than the student. "Maybe they have had a few years of experience. They are kind of a rock star, and they are looking for some management experience."

Working with an apprentice may be the individual's first supervisory experience and an opportunity to develop as a leader within the organization. Supervising an apprentice gives the supervisor a chance to see what it is like to mentor, provide feedback and help another person develop positive, professional work habits and learn to acclimate to the expectations of the worksite.

However, this transition to supervisory leadership may not be smooth or easy. For example, Hsu, Roth and Mazumder (2009) pointed out that even when a scientist is particularly skilled at conducting the work of science (e.g., performing and documenting experiments in a lab), it does not mean he or she understands how to facilitate learning science in a lab setting with students who are there for authentic

work and learning experiences. In other words, a supervisor may be able to do an excellent job but may not necessarily be an excellent teacher of that job to a younger, less-experienced colleague. Thus, the vetting process is important.

Mesa Valley's Bolton suggests it may be beneficial to interview potential supervisors on meanings they attribute to the supervision and mentoring role. "I would see first who displays an interest in being a supervisor," she said. "I would want to know about their leadership both inside and outside of the workplace, their leadership or teaching philosophy, how they imagine working with kids. I would hope for some experience with youth in some capacity. Perhaps someone who has hosted a student for an internship or has had students come in to job shadow. Even a person who has been a prior career fair participant or contact. I would also want to consider their communication style and how they work with others. It's also important to have more than one supervisor as this would help with flexibility."

Bolton's comments underscore both the professional ambitions of the supervisor and the skills and dispositions that lend to being a supportive supervisor for a youth apprentice.

Vetting Workplace Supervisors

When developing an apprenticeship program, districts and schools should consider what criteria will be used to select worksite supervisors. If a third-party entity is selecting supervisors, establish how the criteria for selection will be communicated to parents and students. As with all aspects of education, student safety is a primary concern for school counselors and other educators. Secondary school apprenticeships are an opportunity for student growth and development, and schools need to be able to demonstrate that reasonable measures have been taken to ensure students are being mentored by properly vetted supervisors. When developing and implementing apprenticeship programs, districts need to determine: (1) the degree to which individuals with supervision capacity are vetted (2) who is responsible for ensuring vetting is completed and (3) the level of information about the vetting process disclosed to families and students. "Tthe policy for background checking defaults to the district, so districts are allowed to determine the level of background check required of supervisors," Trent said. "For example in [one district], the requirement is that if a company has not done a background check, then the district requires a background check before an apprentice can be placed at that company. However, for most of our districts, what they require is a disclosure of what the level of background check is that the company does upon hire. This is disclosed to the student and family before they sign their contract. The most important thing is disclosure, disclosure, disclosure so families and students can make good, informed decisions."

CareerWise also lets families request additional background checks if they aren't comfortable with the company's background check level (e.g., state, federal, sex offender registry report).

School districts might consider developing a policy about what types of background checks should be used in the vetting and selection of workplace supervisors, including state, federal, sex offender, child protection and more. For

example, Force (2015) suggested background checks and personal reference checks for workplace supervisors. Schools may also need to let families know when the supervisor vetting was conducted. This may be important because a supervisor may have been hired 15 years prior and has not had a background check since that time. This may not be an issue of concern for a family, but might be important to disclose.

Further, it should be determined who in the line of supervisors should be vetted through background checks. For example, beyond the initial supervisor, will a secondary supervisor also go through background screening? Parents may assume this is the case and if it isn't may need clarification. Remember that at any point the main supervisor might be absent for illness or personal reasons. If so, will the secondary supervisor be alone with the student or some other person in the line of supervision?

"Most parents know educators are screened to work with children," Vanderlinden said. "If an apprenticeship goes through the school, if we're helping set it up, then there is the assumption by parents that their child is as safe going to the apprenticeship as they are going to school. The parents see the apprenticeship as an educational program."

From this perspective, a parent working under this assumption might not scrutinize the paperwork regarding the supervisor's background checks because the parent might assume the workplace supervisor has had a thorough background check similar to the one school volunteers or school employees have had. Even if a school is released of legal obligation for supervisor vetting, there may still be an ethical obligation for school counselors to ensure that parents understand how supervisors were actually vetted.

Training Workplace Supervisors

One of the most important tasks of developing an apprenticeship program is training workplace supervisors for their role as youth-apprentice mentors. One place to start is by helping workplace supervisors examine their feelings about working with today's youth. As with all generations of employees, students today are part of an age-related cohort, and there are some generalizations employers might make about this group. However, students are all unique individuals, and it is important to remember that although they may have some propensity toward cohort characteristics, they will also have their own distinctive preferences, thoughts and behaviors. Ferri-Reed (2014) described the mistakes many companies make when working with millennials. She noticed supervisors often assume stereotypes and misconceptions about millennials are accurate (e.g., millennials have poor work ethic, lack motivation). Ferri-Reed was interested in how employers might actively counteract the tendency to pigeonhole employees by treating them based on stereotypes about their cohort characteristics. She surveyed supervisors about their perceptions of working with and supervising millennial employees and found some common strategies that tend to work well to promote a positive workplace culture.

Ferri-Reed found that millennials do have certain preferences and that if supervisors correctly understand these preferences, they might be able to adjust the workplace to a positive work climate, rather than to stereotype or label millennials.

Some relevant findings included that millennials did seem to want performance feedback more frequently than older employees and that millennials often desire a more informal communication style with managers, which may at times be misinterpreted as disrespect. Several suggestions for supervisors and managers working with millennial employees included: (1) withholding assumptions, (2) shaking off stereotypes, (3) encouraging open communication, (4) giving negative feedback with discretion and (5) providing direct and sincere positive feedback. Another suggestion was to utilize the talents of millennials where possible, such as allowing them to teach older employees about technology, having them help integrate technology in the workplace and inviting them to have input on company decision making where applicable. Finally, to create the most positive culture for millennials, Ferri-Reed asserted companies should have transparent strategic plans and decision-making processes and should let millennial employees know the company has long-term plans for them with a developmental path to success.

Beyond considering cohort preferences and styles when it comes to youth it is also important to understand how relationships help students in workplace experiences develop career interests and aspirations. Gamboa, Paixao and de Jesus (2013) conducted a study of 346 12th-grade internship students in Portugal. The researchers investigated students' perception of the quality of the workplace training received (measured by perceived autonomy, colleagues' feedback, social support, learning opportunities, supervisor training and supervisor support) and various dimensions of career exploration (behaviors, beliefs and reactions). They found social and supervisor support in the workplace are significant predictors of career exploration beliefs, behaviors and reactions. Further, autonomy was a high predictor of environmental exploration at the worksite, and learning opportunities predicted higher rates of self and systematic career exploration.

Hsu and colleagues studied the dialectical transactions that took place in labs and found that even when scientists had no pedagogical training they tended to work in set transactional patterns with their interns (Hsu, Roth, & Mazumder, 2009). The pattern included these three phases: (1) demonstrate, (2) practice and (3) connect. In the demonstrate phase, the supervisor would demonstrate the skill or task the science intern was expected to learn or accomplish. Next, in the practice phase, the intern would have opportunities to repeat the new skill or task. The researchers found that during the practice phase, students needed autonomy to make mistakes and, if one occurred, to find out why it was made. In this phase, Hsu and colleagues noted that students began to become less dependent during task performance on the supervising scientist and more independent in their thinking about the task performance. In the connect phase, the supervisor helped the student intern connect the task or skill learned to other tasks or skills that occurred in the work environment so the student intern understood the context for the skill or task. This close working relationship and the phases of change within the relationship are heavily influenced by the type of feedback the supervisor provides.

Feedback, specifically performance feedback, is vital to individuals' professional growth and performance improvement. Formal and informal feedback should be occurring on a consistent basis in the apprenticeship program, and expectations for each need to be clear in the MOU and in training protocols for both student

apprentices and supervisors. Formal feedback is generally a summative conversation where measurable performance indicators, based on codified data, are reviewed for a particular employee at a determined time such as annual performance reviews (Pitkanen & Lutka, 2010). Whereas, informal feedback may be defined as communication that is frequent and involves the exchange of ideas within context. Informal feedback is formative and meant to improve or shape an employee's performance accomplishments over time. It may also include subtle forms of communication such as nonverbal body language (e.g., head nodding, smiling, frowning) and utterances that may convey approval or disapproval (e.g., "tsk," "hmmm," loud sighing). Both types of feedback are extremely valuable for student apprentice development.

Teaching Apprenticeship Supervisors to Give Feedback

Giving feedback may or may not be a new skill to worksite supervisors; however, learning to give feedback and supervise youth requires some specialized knowledge and skills practice. It is important for supervisors and school counselors to understand the difficulty some students may experience in receiving feedback initially. For students who have experienced hypercritical homes or who tend to have high anxiety, perfectionism or are overly self-conscious, feedback may become amplified or heard as harsh criticism, even when delivered with the best intentions. This does not mean it should not be given. On the contrary, giving feedback is an opportunity to show students that feedback is an investment in them and an acknowledgment that they are seen as someone who can improve and develop to be even better.

At CareerWise, new supervisors attend a two-day training, and mentor coaches attend a one-day training. During this training, supervisors learn a model of how to have a difficult conversation in supervision. They use reflection through writing in interactive journals and practice candid and caring conversations, according to Brenk. The key to sustaining workplace trust and student apprentice improvement is that the conversations have to be honest, even when they are difficult. Training supervisors to give such feedback is a critical part of supervisor training and an important piece of any apprenticeship program.

Informal feedback should occur regularly, and for youth learners such as student apprentices the more regular the better, even daily. This could take only minutes or longer depending on the student's growth. It is important to remember that positive feedback is just as important as constructive feedback, as apprentices may not know, especially in their initial learning, how they are doing in their work. Mutua, Seshan, Akintola and Thanka (2014) studied supervisor feedback and found several effective strategies to providing quality feedback. The first strategy is that feedback should be timely and occur as soon as possible after a learning event; waiting too long to give feedback may mean a missed opportunity as the apprentice may forget details of the experience. The second strategy is that feedback should be clear and focused rather than vague or ambiguous (e.g., "You need to try harder"). Third, give more positive than negative feedback if possible, and start with the positive. And finally, respect the learners' feelings and privacy.

Wilkinson, Couldry, Phillips and Buck (2013) cautioned that feedback should not be conflated with evaluation. They noted the main difference is that evaluation is a judgment of an individual's performance based on a pre-determined set of goals or standards. Conversely, feedback provides performance information and then follows with a reflection model to allow the learner to have time to think about the feedback and give input. Wilkinson et al. noted that there are two types of feedback delivery: (1) directive and (2) elaborative. In a directive approach, the supervisor simply tells the learner what was observed and what he or she can improve. In an elaborative approach, the supervisor shares observations and then engages the learner in a more complex conversation based on a model of mutual learning and co-observation. The model suggested by Wilkinson et al. for the elaborative approach is the Henson Model. In this model, the supervisor still provides feedback and suggestions but then gives the learner time to reflect and to provide thoughts and feelings on the feedback through a series of engaging questions similar to these:

- What do you think about the recommendation(s) I made as a whole?
- What do you think you did well?
- What do you think you could improve?
- What do you think I did well?
- What could I have done differently to improve or enhance your learning experience?

One essential piece of the Henson Model is that the supervisor role models how to accept feedback in the last two questions.

So just how important is feedback in shaping outcomes for apprentices? Well it appears to be very important even in short-term workplace experiences. For example, Chicago Public Schools developed the After School Matters (ASM) program to address the critical need to create a pipeline from school to employment for inner-city youth, particularly black males. ASM is a paid apprenticeship program in specific fields such as culinary arts and web design (Alexander & Hirsch, 2012). The program is 90 hours of apprenticeship work over one semester. Alexander and Hirsch evaluated the program using experimental design with students who had the opportunity to participate in paid apprenticeships and students who did not participate in apprenticeships. The researchers developed a mock interview assessment with the help of human resource managers. The mock interview contained questions about students' backgrounds, career aspirations, work experiences and how they would handle situations that might arise in the workplace.

The second part of the interview protocol included ratings on whether or not the interviewer would hire the participant. Overwhelmingly, the students ranked as most likely to be hired over their control-group peers had apprenticeships with high collaboration and teamwork, positive coaching methods by the supervisor and leadership opportunities. Conversely, those that scored the worst had received berating criticism, negative feedback, or their supervisors ignored problematic behaviors in the workplace. The apprenticeship in these instances was treated more like a leisure activity than a workplace experience. Thus, the students who fared best in developing quality interview skills were those students who had supervisors who gave clear, positive feedback consistently and allowed students to have developmentally appropriate leadership activities during the apprenticeship experience.

Supervision Recommendations

Supervision is a critical component of any apprenticeship program. The recommendations listed here are meant to help districts and schools think about how to best vet worksite supervisors, plan supervisor training and prepare supervisors to give feedback to youth apprentices. Districts may choose to use these recommendations to create their own policies and procedures.

Supervision Recommendation One: 1

Disclose to students and families how supervisors are vetted. Include what background checks were performed and when.

When student apprentices have been chosen for work with employers, prior to signing their MOUs, the students and their families should receive information about the workplace supervisors. This information should include disclosures about which background checks were conducted on the supervisors and when those background checks occurred. Students and their families should be given the opportunity to request further background checks for supervisors who have limited vetting (such as state-only background checks) or have not been vetted. They should also have an option for requesting further background checks for supervisors who have outdated background checks. Review the following case study and discuss.

CASE STUDY 4.1

Shea's Supervisor

Shea is in her second year of an apprenticeship with a small, local landscaping business. Shea has an apprenticeship with the office manager, where she uses Microsoft Office systems to coordinate logistics. She sets up client meetings, does all supply ordering and manages client accounts. Her goal is to become an accountant. Her supervisor is Renee. Typically, she and Renee are the only two people in the office, with other employees coming and going during the day for supplies. However, Renee recently went on maternity leave, and during her absence, Shea is reporting to, Mr. Vernon, the company owner.

Shea reported to work on Thursday, and the office door was locked. She went to school and told her school counselor that no one was at the office to let her in. Her school counselor tried calling the landscaping office, and there was no answer. That day, Mr. Vernon was on the news for domestic violence involving a weapon. As it was reported on the news, this was his third arrest for domestic violence. Shea's mother is upset and wonders why she was never told about Mr. Vernon's history. She also wonders why he was allowed to supervise her daughter during Renee's absence with no background check. She feels the school was negligent and placed her daughter in serious danger.

In your group discuss:

1. What mistakes, if any, do you believe were made in the supervisor vetting process?
2. Could a well-crafted policy have helped to avoid this scenario? If so, how?
3. Consider Shea's mother's perspective. Given that she feels angry, how might you work with her in a productive way to move forward to make this experience better for everyone?

Supervision Recommendation Two: 2

Provide experiential training for all site supervisors on how to give quality feedback and performance evaluations.

All supervisors, regardless of their supervision experience, should be provided with training on how to deliver quality feedback, both positive and constructive. This training should be experiential and allow supervisors opportunities to discuss potential difficulties with supervisees, and how they might deliver difficult feedback. By allowing supervisors time to practice giving feedback and role playing with each other, they may begin to learn new methods of delivery and peer model, leading to the emulation of promising supervisory practices. Without ample time to develop feedback skills, supervisors may miss substantial opportunities to reinforce student apprentices positive learning and correct performance concerns. Review the following case study and discuss.

CASE STUDY 4.2

Carter's Perception of Feedback

Carter has been an apprentice for three months at a distribution center. He works in the printing center with hardware and prints labels for boxes for all shipments. Carter's employment skills coach, David, visits Carter every two weeks to check in. Each time he has visited Carter, he has noticed that Carter seems more and more unhappy although he always professes to enjoy working at the center. During his last visit, David said, "Carter, I'm glad to hear you say that you like it here, but you just don't seem happy." Carter replied, "I do like it, but I'm not very good at this job. Mark is always telling me that I'm doing something wrong."

David is surprised to hear this because Mark, Carter's supervisor, has consistently reported to David that Carter does a great job. David decided to visit Mark again and ask how Carter was doing. Mark conveys that David is doing fantastic and is a fast learner. David asked Mark what kind of feedback he gives to David, and Mark said, "Little corrections here and there when he needs it. Most of the time I just leave him alone." David asked, "How do you let him know if he is doing good work on a daily basis?" Mark replied, "Well, he hasn't really asked how he is doing so I try to leave him alone unless he messes something up. I try to treat him like I do the other employees here because he really is doing a great job."

In your group discuss:

1. What communication barriers exist between Mark and Carter?
2. If these communication issues go unaddressed, what might be the outcome for Carter?
3. How should David, the employment coach, address this issue?
4. How might this issue have been avoided?
5. What types of training or follow up might Mark need? How should mentor supervisors be evaluated on their work with student apprentices?

Supervision Recommendation Three: 3

Feedback loops should be formal, written and occur consistently. The feedback given should be based on agreed-upon industry-based standards and employability skills. Formal rubrics should be used so students see progress on specific measures over time.

Progress should be monitored and communicated informally throughout students' work experiences. However, written, formal feedback should also be systematically delivered to students. How often this might occur is left up to districts and third-party providers. As conveyed by most school counselors in this study, having quarterly feedback would be helpful in determining if students are consistently progressing toward competency goals in the apprenticeship program. "We need to be in the loop of what is going on for apprenticeship students because apprenticeships are an educational program," Vanderlinden said. "To advise students on their rights, or to give them advice on how to handle workplace situations, we need to know what's happening. Part of what we do is advocacy and also teaching students how to work things out, like overcoming problems.

Conversely, if students are beginning to struggle, formal quarterly feedback would allow school counselors to help develop interventions to possibly assist students through whatever challenges they were facing at the worksite and increase possibilities for success.

An example of a district where a formal feedback loop is occurring regularly for student apprentices within the apprenticeship program is in Sheboygan, Wis. "There are three meetings throughout the year with the student, parent, employer, school representative and the third-party provider," said school counselor Steve Schneider. "We meet to discuss how things are progressing at the worksite, going through the competencies checklist to see what the student is learning and accomplishing in the areas of skills and aptitudes and how things are going for the student at school. We discuss school because we want the student's life outside of work to be congruent and cohesive with what's happening in the workplace. That way the student isn't falling behind in one area and excelling in another. If something isn't happening, we would discuss it and work on it. The regular contact allows us to fix problems as they arise."

As Schneider noted, the feedback loop allows everyone in contact with the student apprentice to support the student in developing skills toward performance

improvement. For this feedback loop to continually occur on an informal basis, whomever is assigned by the district or third-party coordinator to communicate with the apprenticeship site should have a sense of how the apprentice is performing. By giving informal feedback on performance, students learn to meet the daily expectations of the organization. However, formal, written feedback that occurs periodically helps students understand how they are progressing toward the competencies for certification and allows supervisors and student apprentices to set work development goals for a specific time period. Review the following case study and discuss.

CASE STUDY 4.3

Alex's Performance Evaluation

Alex is completing his second year of apprenticeship at a hotel. His long-term goal is to work in hospitality management. Throughout high school, he struggled with social anxiety and feeling shy. When he chose to interview for an apprenticeship in hospitality, his school counselor, Mrs. Bray, was somewhat surprised. Alex practiced interviewing with her four times. Although he always gave good answers, making eye contact and speaking audibly were difficult for him at times during interview practice sessions. Alex was thrilled when the largest hotel in the region chose him as an apprentice.

During his first year of the apprenticeship program Alex received regular informal feedback from his mentor on things to improve around customer service. For example, he was told to work on making eye contact, smiling more and practicing how to have natural conversation while providing service. However, he was also complimented for how quickly he learned the policies and procedures for the front desk. By the end of his first year, Alex had earned a raise and had received a very good performance evaluation with some exceptions related to continuing to work on his social connections with customers and co-workers.

After receiving his formal evaluation, Alex was more determined than ever to be successful. He visited Mrs. Bray and shared the results of his written performance evaluation with her. He asked her how he might become a better leader and more outgoing. Mrs. Bray reviewed his evaluation, and then she found a summer camp program that needed counselors to lead groups of fifth- to eighth-grade students. Although Alex would continue his apprenticeship in the summer, he decided he would work at the summer camp part time as well.

Working in the leadership capacity during the summer and facilitating groups helped Alex significantly. He gave instructions to youth, communicated with parents and co-planned with the other camp counselors. His work at the hotel became even better as a result. He found it easier to engage in small talk with others consistently. Throughout his second year of apprenticeship, Alex asked for more opportunities to work on teams and to coordinate projects. By the end of year two, as he graduated from high school, he received a raise and an offer for full-time employment with benefits while attending college.

In your group discuss:

1. Alex had consistently received informal feedback regarding his need to improve social skills. How did the formal performance evaluation affect his behavior differently than the informal feedback?
2. How did reviewing the performance evaluation help Mrs. Bray find a resource for Alex?
3. How was being a camp counselor a different experience than working in a hotel? Why might that have helped Alex develop socially?
4. What are some ways to help student apprentices reflect on their performance evaluations and how they might change to improve their performance?

Supervision Recommendation Four: 4

The school and employer should agree upon what elements of formal, written performance evaluation will be shared by the employer with the school, particularly if the apprenticeship is tied to a grade.

Schools and employers need to determine which types of information will be shared so the school may issue a grade for students where apprenticeship employment is tied to a grade or course credit. The types of information shared should be listed in the MOU and may include information such as performance on pre-established criteria related to workplace competencies, employability skills and attendance. Additionally, it should be determined who will receive the workplace performance measures and how grades will be calculated, or credit allocated, based on performance evaluations. Review the following case study and discuss.

CASE STUDY 4.4

Terri is Competent, But Not Employable

Terri is an apprentice at a local bakery. She is enrolled in her high school's culinary arts program and is receiving dual-enrollment credit in an associate degree program at a local community college. Terri loves to bake and has always dreamed of owning her own bakery. Her high school apprenticeship program will award her three hours of dual-enrollment credit with the local community college for successful completion of the apprenticeship program. This is the first year her high school has implemented this program. At the conclusion of the first semester of her apprenticeship, Terri received her evaluation from her supervisor at the bakery, and she received high praise for her baking competencies. She was ranked high for cleanliness in the kitchen, skill in baking and creativity. However, her employability skills are ranked very low including tardiness and absences, not wearing the proper uniform and poor customer service.

Her school counselor, Mr. Lancaster, was given the task of assigning her a grade for the apprenticeship. However, he is unsure how to give her a grade because she has met the competencies for culinary arts for the semester but not employability skills. His district has not outlined a policy for how to assign the grade based on the two different rubrics given in the performance evaluation from the company. In the MOU with the community college, grade determination is made by the high school staff based on company-provided performance feedback. However, the MOU does not designate what performance feedback is used and how the scales are weighted. In other words, Mr. Lancaster is unsure if employability skills should have equal weight in the grade as the competencies for culinary arts. Moreover, each company uses different evaluations based on the competencies of their industry so he is unsure how to proceed with giving a grade.

In your group discuss:

1. Who should Mr. Lancaster contact with this dilemma?
2. If this were your school, how much weight should the competencies have in the final grade, and how much weight should the employability skills have in the final grade?
3. If a specific policy does not denote how to assign the grade, then how should the grade be determined?
4. Given Terri's performance at the employment site, what concerns do you have regarding her future performance at this apprenticeship site? What goals might you like for her and her site supervisor to focus on?
5. Look at the ASCA Mindsets & Behaviors (2014). Which Mindsets or Behaviors might Terri still need to develop?

Supervision Recommendation Five: 5

Provide supervisors with sensitivity skills training.

Brenk with CareerWise pointed out that student apprentices may have issues arise during the course of the apprenticeship and seek the help or support of their worksite mentor. Helping worksite mentors to know who to refer the student to, how to listen with care, and how to give the student appropriate support within boundaries are key tools site place supervisors will need. Brenk gave examples such as a student may become pregnant, or evicted, or family member may get arrested or die. Beyond dealing with personal issues, supervisors also need some support to examine their own biases and how they might affect the supervision and mentorship process. Review and discuss the following case study.

CASE STUDY 4.5

Case Study 4.5: Lance

Lance is a high school senior and is a second-year apprentice at a local cafe. He is interested in obtaining an associate degree in culinary arts and owning his own bakery someday. He and his workplace supervisor, Judy, are very close. One day Lance comes to work late and is quiet and withdrawn. Judy finds him in the back room, sitting at a table with his head down. She asks him what is wrong, and he begins to cry and tells her that his mother has been diagnosed with Stage 4 breast cancer. Judy is concerned and unsure how to handle this situation.

In your group discuss:

1. What basic skills does Judy need to handle this situation?
2. What type of training might have prepared her for helping Lance?
3. Should there be a protocol or some steps for Judy to follow in this situation? If so, what might they be?

Section Summary

Selecting supervisors is one important factor in successful apprenticeship programs. When designing programs, it is important to decide what criteria will be used for supervisor selection and how supervisor vetting information (i.e., background check) will be conveyed to families and students so they can make an informed decision. After selecting supervisors, districts should determine what types of training supervisors will receive. One important type of training is how to give consistent informal feedback and how to deliver formal performance evaluations. It is recommended that apprentice competencies are measured with performance rubrics and that supervisors are trained to measure performance using the rubrics designed by the district or state. Additionally, schools need to determine how student apprentices' performance evaluations will be considered in the overall grade received for apprenticeship credit and how this will be documented.

Supervision: Group Activities

Activity One: In your group discuss: Before reading this section, what concerns did you have about supervisor selection and apprenticeship programs? After going through this section, what concerns do you now have? As a group, discuss who you will contact as issues arise regarding supervision and apprenticeships?

Activity Two: Write your own policy regarding supervisor vetting. What background checks should be included, and who should be checked (consider

that a supervisor could be absent or take an extended absence)? What should be disclosed to families/students about supervisor background checks?

Activity Three: Write an outline for a one-day workshop for apprenticeship supervisors. What topics would you include in the training? What activities would you include? What professional development activities would you recommend districts host throughout the year for supervisors? How often would you recommend these activities be provided? Consider cost-effective and time-effective measures as well, such as webinars. How should districts ensure the supervisors chosen are adequately prepared to supervise an apprentice?

5

Student Apprentice Development, Assessment and Accountability

The goal of a high school student apprenticeship is for students to have an opportunity to experience work in a meaningful way with supportive adults. However, nearly every school counselor, administrator, industry supervisor or other expert interviewed for this book noted that apprenticeships aren't for every student. "Not everyone who wants an apprenticeship is going to be placed in one," said Central High School's Burns. "There will be some students not selected for anything. Not being selected doesn't mean there's a problem with the student; it just means there may have been a student who was a better fit."

Indeed, part of what makes the apprenticeship program a real-world experience is the opportunity to prepare for a job interview by developing materials (i.e., resume, cover letter), preparing for the interview (i.e., mock interviews), interviewing for a position with an industry partner and determining what strengths or challenges the student had throughout the process. Thus, the hiring process may become a positive and critical learning milestone students can use for future success on the job market. Helping parents and students to consider the opportunity to interview from this perspective may help students who aren't chosen integrate feedback and lessons learned in a more positive way. Thus, the first step in development for student apprentices is the hiring process, and there should be a lot of planning and thought on how to prepare students for the opportunity to apply and interview for apprenticeships.

School counselors and administrators should hold information sessions beginning as early as eighth grade to inform students and parents about what apprenticeships are and how they fit within academic paths. Before applying for apprenticeships, students should review their academic plan with their school counselor to ensure

doing an apprenticeship matches their academic and career goals. Students should also review a list of available apprenticeships to see if there are apprenticeships they may wish to apply for that align with their academic path and career interests. Companies or industry partners participating in the apprenticeship program may be included in apprenticeship fairs or through hosting an information night for families where students and parents can learn about the unique opportunities at each site. In general, students applying for an apprenticeship should be in good academic standing (passing course work) and on track to graduate on time. Ideally, apprenticeships should count for credit within the academic path or should fill elective hours.

Once student apprentices have been selected for hire, the next step is to write and sign MOUs (see chapter 3). After the MOUs have been signed, students are ready to begin work. One of the most essential aspects of creating a positive apprenticeship is transitioning the student apprentice from school to the workplace.

Transitioning Student Apprentices to the Workplace

Force (2015) asserted that a critical aspect of apprenticeship programs is providing program orientation for student apprentices and developing an onboarding, or induction, process. Colorado's CareerWise hosts a summer bootcamp for students chosen for apprenticeship. The weeklong program mainly focuses on foundational competencies (employability skills).

Districts may want to consider an apprenticeship onboarding program to help students transition to the workplace. Topics might include: appropriate workplace fashion, how to accept feedback, the role of the supervisor, the role of the apprentice, the role of human resources, expectations for the workplace experience and an introduction to tools used for performance feedback and competency evaluation. Additional topics might include financial literacy (e.g., taxes, savings plans), time and stress management, the mentor/mentee relationship, understanding workplace culture, how to ask for additional help or support when you need it, social media and work (e.g., what not to post) and developing positive social relationships in the workplace.

Beyond third-party or school-provided onboarding, many companies will also provide their own orientation and onboarding process. The benefits to companies for developing and implementing effective employee onboarding is that onboarding increases workplace satisfaction and performance and reduces employee turnover. If asked to recommend onboarding protocols to companies, school districts may want to ask companies to consider adhering to the four C's described by Bauer (2007):

1. Compliance is the lowest level and includes teaching employees basic legal and policy-related rules and regulations.
2. Clarification refers to ensuring employees understand their new jobs and all related expectations.
3. Culture includes providing employees with a sense of organizational norms – both formal and informal.
4. Connection refers to the vital interpersonal relationships and information networks new employees must establish (p. 2).

Once student apprentices enter the worksite and become acclimated to the environment, they will begin to perform the functions of their new role. Job performance assessment should be established well before the student apprentice begins working, during the MOU phase. Apprentices should understand what the expectations are, how performance is evaluated and by whom and whether or not performance is linked to a grade or course credit. If performance is linked to course credit, student apprentices should understand the requirements necessary to earn course credit. Assessment of learning outcomes and evaluation of performance tend to fall largely in two major categories: (1) performing key competencies and (2) demonstrating employability skills.

Key Competencies and Employability Skills

The sole prerequisite for entry into apprenticeships through CareerWise is that students have to prove they are currently in good academic standing; in other words, students applying for apprenticeships are on target to graduate on time. CareerWise has a competency-based model, as does Wisconsin, and is heavily industry-driven, said Hollis Salway, director of development for CareerWise.

CareerWise developed its competencies through a collaborative, industry-driven process conducted with employers, Salway said. By developing the competencies through this type of approach, CareerWise was able to ensure industry's needs are actually met with the apprenticeship program and that students gain real-world experience that will enhance their future employment outcomes. "Each occupation that an apprentice would be in has a set of competencies specific to the role, and those sets of competencies range from around 50 competencies up to around 100 competencies depending on the role and/or certification or credit needed," Salway said. "Competencies are mapped onto a training plan. The training plan identifies in which setting the skill, or competency, is best taught. So some things may be best taught in a traditional K–12 classroom setting, some may be best taught in the workplace, and some may require another partner such as a community college.

Competencies fall in various categories. For example, Salway noted that some competencies are foundational competencies related to professionalism and career readiness. These competencies speak heavily to the apprentices' employability skills and workplace success. Conversely, there are role-specific competencies unique to the given occupation of the apprenticeship.

CareerWise did not use baseline measures (pretesting) for students entering the apprenticeship program; rather, the focus was on development of all competencies. Salway pointed out that some students may actually enter the program already having some competencies mastered based on personal aptitude or other life experiences. An example of this might come from a basic carpentry competency where an apprentice is expected to master boring holes with both hand and power tools. A student apprentice who had access to tools growing up and had family members that allowed the student to participate in wood-cutting projects may have familiarity with using these tools and may have already mastered their prior to entering an apprenticeship. Therefore, the student apprentice would have mastery of the competence. In this

case, it is not a concern that student's competence is based on prior life experience. CareerWise's is for student apprentices to demonstrate mastery of as many of the competencies as possible during their three-year apprenticeship program rather than to measure growth over time.

Tracking Apprentices' Success

One key aspect of determining long-term success with apprenticeship programs is collecting data on student apprentices' success in securing jobs and completing certificates and degrees compared with peers not participating in apprenticeships. Beneficial data might include high school completion data, industry-recognized certificate completion, associates degree completion, attendance tracking and post-apprenticeship employment status. Tracking successful employment status (employability) is complicated and varied because it might mean tracking an apprentice who finishes the apprenticeship program and does any of the following: (1) part-time with the same company while pursuing college or postsecondary training full time, (2) full-time employment with the same company and not attending college, (3) full-time employment with the same company and pursuing college or postsecondary training part-time, (4) leaving the company but going to work for a company in the same industry and (5) leaving the industry but being hired into a skilled position in a similar industry. Prior to establishing an apprenticeship program, schools and districts should decide what types of data might be most useful to track to determine the impact of the program. In other words, what impact are you hoping the apprenticeship program will have? To determine this, review data before developing the program from the school district, higher education sources and industry partners.

FERPA waivers. Other types of data that might be tracked include socioeconomic and demographic data, GPA, ACT scores, standardized test measures, course completion and success in postsecondary education and training. However, for third-party providers to share this information, data sharing must include FERPA waivers. The Family Educational Rights and Privacy Act (FERPA) (20 U.S.C. § 1232g; 34 CFR Part 99) is the federal law that provides guidelines for protecting students' right to privacy. In general, for a school to share any part of a student's record, the student's parent or the eligible student must sign and date written consent authorizing school personnel to share personal information.

"The more specific the data shared, the better," Bolton said. "We don't want to hand over whole records, only what is necessary, because we need to protect our students' histories. Deciding what is useful and helpful before the waiver is signed, and listing those documents, might be ideal. So, if a student will be in concurrent enrollment, or college coursework, we may need to share information such as who needs those college benchmarks, PSAT scores, what we're doing to prepare them for the SAT. That could all be put on a FERPA waiver and explained in the MOU meeting prior to the parent or student signing the form. That way it's not a general waiver, handing over the whole student record, more intentional, relevant information for

this student's current employment situation in the apprenticeship. Still the parent and student would need to agree if it is part of the education record."

Other possible measures of value might include items such as a career decision making self-efficacy scale, career maturity, the Gallup-Hope Index (youth attitudes about entrepreneurship and financial literacy) (2016), decision-making assessment, problem-solving skills assessment, General and Student Self-Efficacy Scale (e.g., Rowbotham & Schmitz, 2013) and leadership scales. On occasion, apprenticeship outcome measures will be industry-specific. For example, Perez, Parr and Beckett (2010), conducted a study of apprenticeships in ecological horticulture (AEH). A primary goal of the study was to determine if apprentices had obtained employment as farmers or gardeners and whether or not they were using sustainable growing techniques, which is a key characteristic of AEH programs. Overwhelmingly, participants in the study were working in horticulture and using sustainability practices. The outcome measure of using sustainability practices is an example of an industry-specific measure one might gather to demonstrate effectiveness of an apprenticeship program.

Haviland pointed out another instance in which a FERPA waiver might be necessary in regard to apprenticeships. In the event a student has a court order and the apprenticeship site should be aware for safety issues, the court order may need to be shared through a FERPA waiver. "If we do a threat assessment and have a safety plan in place, that safety plan may need to be part of the FERPA waiver, such as in the case of the student being a physical threat or making physical threats to someone else," Haviland said.

Haviland certainly makes a great point. Although this might be a rare occurrence, districts and schools may need to add a statement to their apprenticeship policies and procedures detailing when a FERPA waiver might be requested from families for assessment and accountability purposes such as those described in this section.

Opportunities for Reflection

Beyond evaluating role-specific and employability competencies performance and providing apprentices with feedback, supervisors may also consider providing opportunities for apprentices to reflect upon their learning experiences. As student apprentices go to class and learn information (implicit learning) through seminars, lectures, group discussions and examinations, they should reflect about how they are applying that information in the real world at the apprenticeship site (explicit learning).

In a study of science apprenticeship programs, Burgin and Sadler (2016) found that student apprentices in science who had highly authentic science apprenticeship placements, were given reflection opportunities and had opportunities for explicit activities in their seminars (for example, discussing how culture and socialization bias the ways scientists interpret their data) demonstrated the most growth in their understandings of the nature of science. This is likely because the explicit opportunities along with reflection enhanced the students' understanding and construction of meaning of what they were learning at the apprenticeship site.

Although all student apprentices won't be in science settings, opportunities for reflection and for thinking about their professional choices should be built into apprenticeship programs across occupational fields. Lauren Trent of CareerWise noted that journaling is a key component of the apprenticeship program in Colorado. Another potential consideration is to hold monthly apprenticeship dinners at each high school where apprentices can undergo professional development such as honing their resumes, sharing what they are learning at their site, discussing time management and stress management strategies, talking about balancing the roles of worker and student and sharing the common experiences of apprenticing.

Student Development, Assessment and Accountability Recommendations

Recommendations related to student assessment and accountability for high school apprenticeship programs are made in this section. Following each is a case study and discussion questions. At the end of the chapter is a chapter summary.

Assessment and Accountability Recommendation One: 1

Develop an onboarding program to transition students to the apprenticeship program.

A key aspect of developing student apprenticeship programs is successfully transitioning students from school to the workplace. Students need to know what to expect regarding their new role, as well as how the workplace may be different from school. By providing this information to students before they arrive, students may experience less anxiety and may be better prepared to meet the requirements of the apprenticeship program. Review and discuss the following case study.

CASE STUDY 5.1

Is Casey Just Confused?

Casey is an 11th-grade honor roll student and student body treasurer. She is the oldest child from a home with seven children, where she is raised by her grandmother. Casey is responsible and hard working. She was excited to be given the opportunity to apply for an apprenticeship and thrilled when she was chosen for the apprenticeship program. Casey was placed as a new student apprentice at a local boutique floral shop. Casey applied for this specific apprenticeship due to her interest in horticulture and career goal of owning a floral business specializing in weddings and events.

On her first day at the apprenticeship site, from about 8:30-9:30 a.m., Casey's supervisor, Mr. Timmons, worked with Casey. Mr. Timmons gave Casey a tour of the floral shop and taught her how he accepts daily shipments

of fresh flowers. The owner of the shop, Ms. Garrison, arrived at work at approximately 9:30 a.m. Ms. Garrison asked to speak to Mr. Timmons alone. When Mr. Timmons returned, he told Casey she could not work for the rest of the day because she had violated the dress code by dressing inappropriately. Casey became upset and asked for clarification. Mr. Timmons explained that Ms. Garrison did not approve of the outfit Casey was wearing (a knee length skirt and a v-neck t-shirt). Mr. Timmons explained that t-shirts are against the dress code at the boutique. Casey stated that she was never given a dress code and that she doesn't have the financial means to purchase new clothes right now. She cried as she gathered her things to return to school. Once at school, Casey reported to the school counseling office, where she communicated this story to her school counselor.

In your group discuss:

1. How might this situation have been handled better?
2. If Casey returned to school, how would you advise her to handle this situation moving forward?
3. How might you intervene to assist her?
4. What communication might your team have with the floral boutique to assist them in thinking through ways to prevent this situation from happening again in the future?
5. What would you like Mr. Timmons and Ms. Garrison to do when Casey returns to work?

Assessment and Accountability Recommendation Two: 2

Determine how competencies for each apprenticeship will be measured and by whom.

Before establishing apprenticeships, review how occupations and competencies will align. Determine how many competencies must be mastered for each course, credential or apprenticeship experience to count for earned credit. Review and discuss the following case study.

CASE STUDY 5.2

We Need More People at the Table

Mr. Mervin is a CTE coordinator for a school district. He recently received news that the district would like to start an apprenticeship program at one of the high schools as a pilot program for the whole district. The district leadership asked Mr. Mervin to work out some of the issues with competencies, course

credit, credentialing and dual enrollment with a local community college. Mr. Mervin met with Dr. Westbrook at the community college, and they decided to work on one program at a time, starting with a new hydroponics program. First they look at the high school course work, then a list of competencies developed by industry partners. They tried to decide which classes the competencies occurred in. They realized they weren't sure exactly which competencies student might gain at an apprenticeship site. They also noticed they had a lot of overlap in the high school and college courses being offered.

Discuss in your group:

1. Should more people have been included in this initial meeting?
2. How might Mr. Mervin and Dr. Westbrook do a better job planning this curriculum to ensure the competencies are measured in high school classes, college courses and apprenticeship experiences?
3. If students are going to receive course credit for an apprenticeship experience to whom should the worksite send documentation of competencies? How will your district handle this?

Assessment and Accountability Recommendation Three: 3

Use FERPA waivers when needed, but provide only information relevant to the student apprentice's workplace.

School counselors and administrators should be extremely judicious and follow the law related to FERPA when working with student apprenticeship sites. However, there are times when information sharing will be necessary to ensure students are given credit for completed work and are kept safe. For example, if an agreement in the MOU states that a student will compete certification courses in welding to maintain employment at a plant, the student may need the school to send official transcripts each semester to the plant manager per the MOU agreement. Having documentation stating this is a requirement and that the student and parent are aware of this and approve of this is important. Review and discuss the following case study.

CASE STUDY 5.3

Carla's Court Order

Carla is a 16-year-old student apprentice with a local hardware company. She missed work and school for two days, and when she arrived at school she was with her mother. Her mother disclosed that Carla's stepfather had been arrested for domestic violence and had threatened the family with a gun. The court issued a protective order; Carla's father was arrested and later released on bail.

Carla's father is not allowed to have contact with Carla. Carla's mother tells you she is worried Carla's father will try to come to the school to get Carla or to her workplace to get her.

Discuss in your group:

1. Does Carla's apprenticeship site need to know this information? Why or why not?
2. What does the apprenticeship site need to know? What details need to be shared?
3. What responsibility should the school take in sharing this information? What responsibility should Carla or her mother take in sharing this information?

Assessment and Accountability Recommendation Four: 4

Add journaling or other reflective components to the apprenticeship experience to help students construct meaning out of their workplace learning experience.

Students need opportunities to reflect and integrate what they are learning in their classrooms (course content) and their worksites (competencies, employability skills) and to assimilate the information in a way allowing them to make meaningful connections. They also need opportunities to think about and discuss what they are seeing and learning about the workplace, work values and the culture of the work environment. Reflection activities, such as journaling or discussion groups can be helpful. Review and discuss the following case study.

CASE STUDY 5.4

Workplace EcoMap

Ms. James, a high school counselor, meets monthly with the school's junior class student apprentices (students in their first year of the apprenticeship program). The students have dinner sponsored by a local restaurant, and then they are placed in discussion groups with different topics each month. For the February meeting, the students drew ecomaps of their workplaces to show reporting structures related to the units they worked in. Then they used colors and various design tabs to demonstrate the relationships and communication styles of individuals within the units they worked in. They talked about what they were learning about each person's unique leadership style, strength and communication patterns and the overall culture and dynamic of the work environment. Students were asked to choose three people in their work environment they admire and would like to emulate and discuss why. Throughout the activity students were given questions to reflect on silently

while they worked on their ecomap and were occasionally given questions to discuss out loud at their group table. At the end of the night students were asked to share with each other one insight they learned about their worksite culture from completing the activity. Ms. James took pictures of the students' work to document the activity but did not attach students' names to their work for confidentiality.

In your group discuss:

1. Would pros and cons do you see to having students participate in an activity like this?
2. Would it be more beneficial to have the students complete the activity at the workplace? Why or why not?
3. Should the students have to share their answers? Should they have to share their artwork?
4. Should students have to attend these sessions? If so, how many should they have to attend?

Section Summary

Assessment and accountability are necessary for showing an apprenticeship program's effectiveness. However, assessment should be diagnostic and helpful. It should lead to better program planning, better preparation of student apprentices and better overall apprenticeship program outcomes. In this chapter, the key recommendations included: (1) design an onboarding process for student apprentices to assist in the transition from school to work; (2) determine how competencies will be measured and how students will be given course credit for competencies; (3) use FERPA waivers when needed, but use them judiciously; and (4) provide students with opportunities to reflect upon their experiences and make meaning of their apprenticeship opportunity.

Student Development, Assessment and Accountability: Group Activities

Activity One: In your group discuss: Before reading this chapter, what concerns did you have regarding students' preparation for the transition from school to the workplace? After reading this chapter, how prepared would you rate your students for that transition on a scale of 1–10 (1 being the lowest, 10 being the highest)? What might your school be able to improve?

Activity Two: Consider the type of data you might want to collect for your student apprenticeship program. In other words, what would you want to

see improve, and how would you measure your impact? What sources of data do you currently have? Is your data valid and reliable? Do you have both quantitative and qualitative measures? What other types of data might you want to collect?

Activity Three: Develop an outline for a student onboarding program. What would you include in the program? Would the program be mandatory? When would the program take place? How many days would the program last? Who would be responsible for conducting the training? How will you know if your onboarding program was effective?

6

Student Concerns and Due Process

Like with all employees, student apprentices may face workplace challenges for which they need to be prepared. As with all employees, unforeseen circumstances, such as the family moving or the sutdent deciding a particular occupation isn't as desirable as previously imagined, are certainly a possibility. Careful apprentice screening, selection and preparation may help avoid some potential pitfalls. However, some problems may arise no matter how carefully the worksite or the apprentice plans and prepares. Issues related to harassment, bullying, discrimination and termination may occur during an apprenticeship program.

One essential element of apprentice preparation that may reduce problems in the workplace is orientation to human resources, said CareerWise's Brenk. Brenk noted that most companies, regardless of size, have an HR department that handles hiring, termination, benefits, payroll and employee concerns. Brenk also mentioned that most students aren't aware of HR's role. Therefore, it's especially helpful to provide student apprentices with an overview of what HR is and does before the apprenticeship begins. Such training might include explaining how HR can assist individuals who have experienced workplace harassment, discrimination or bullying and what those terms actually mean in the workplace. Training should also cover other HR-related issues such as expectations of performance feedback and company policies related to due process and termination. In this section, we review each of these issues related to apprentices and offer some recommendations for apprenticeship training.

Apprentices and Worksite Bullying

Although it's not often mentioned, there are some industries in which bullying appears more prevalent than others for novice employees, particularly apprentices. According to McCormack, Djurkovic and Casimir (2013), citing Rayner and Hoel's work (1997), there are five main dimensions of workplace bullying:

- threats to professional standing through demeaning the individual's work performance
- threat to personal standing such as making derogatory comments about the individual
- isolation including withholding important information needed to do one's job
- overwork
- destabilization such as constantly bringing up errors the individual has made in the past

Many factors contribute to a negative environment and one that tolerates bullying. McCormack and colleagues asserted that in some industries, such as construction, bullying newcomers is seen as a rite of passage and is accepted as part of the industry culture. Bullying may be expected, and the bullies themselves become referent leaders of the work group.

This unique culture described by McCormack et al. worked to silence the apprentice from complaining or filing a grievance against co-workers in spite of evidence that such bullying caused angst, lower job productivity, lower self-concept and low career satisfaction. Targets of workplace bullying were asked to describe the type of bullying they had endured. Bullying ranged from verbal harassment and abuse (i.e., name calling, cursing, screaming), having tools thrown at them and personal teasing that was cruel at times. Yet, the study participants didn't report the bullying due to fear of retribution such as losing their job or fear they would receive even harsher bullying. Additionally, many apprentices didn't know workplace bullying behavior wasn't normal because this was their first job.

Riggall, Skues and Wise (2017) expanded McCormack et al.'s research by seeking to understand how apprentices defined bullying and how prevalent bullying was perceived to be in the construction industry. Although participants in Riggall et al.'s research found bullying in the building and construction industry to be prevalent, how the participants defined bullying and described bullying incidents resulted in four main themes:

- intention to harm
- power imbalance
- repeated behavior
- the importance of the bullying target's interpretation of the behavior

Although students may be familiar with how to report bullying in schools, the workplace is a new setting. Most student apprentices won't have to worry about workplace bullying; however, they need to understand reporting procedures. Riggall and colleagues suggested assertiveness training may help reduce the likelihood student apprentices will be bullied or accept being bullied and not report. In a study conducted by Eslami, Rabiei, Afzali, Hamidizadeh and Masoudi (2016), 126 high school students were enrolled in an assertiveness training study. Half of the sample was

assigned to an intervention, and half were assigned to a control group. Students in both groups were given pre- and post-test measures of overall anxiety, depression and stress. The students in the intervention were placed in an eight-week assertiveness training program, where they discussed their right to express their thoughts and beliefs, role played expressing their views, practiced assertiveness skills and behaviors, etc. Students in the assertiveness training program had significantly lower stress, depression and anxiety at post-test.

Again, although not highly likely to happen, workplace bullying can occur. Therefore, it's important to address workplace bullying with apprentices. Another related issue is workplace discrimination.

Workplace Discrimination and Harassment of Apprentices

Workplace discrimination and harassment may take many different forms when student apprentices are involved. Therefore, it's important to understand the definition of both. However, workplace discrimination has much nuance and complexity. The U.S. Equal Employment Opportunity Commission describes the different types of workplace discrimination as follows:

Age discrimination: Involves treating an applicant or employee less favorably because of his or her age.

Disability discrimination: Occurs when an employer or other entity covered by the Americans with Disabilities Act, as amended, or the Rehabilitation Act, as amended, treats a qualified individual with a disability who is an employee or applicant unfavorably because she has a disability. Disability discrimination also occurs when a covered employer or other entity treats an applicant or employee less favorably because the person has a history of a disability (such as cancer that is controlled or in remission) or is believed to have a physical or mental impairment that is not transitory (lasting or expected to last six months or less) and minor (even if the person does not have such an impairment).

National origin discrimination: Involves treating applicants or employees unfavorably because they are from a particular country or part of the world, because of ethnicity or accent or because they appear to be of a certain ethnic background (even if they aren't). National origin discrimination also can involve treating people unfavorably because they are married to or associated with a person of a certain national origin. Discrimination can occur when the victim and the person who inflicted the discrimination are the same national origin.

Pregnancy discrimination: Involves treating an applicant or employee unfavorably because of pregnancy, childbirth or a medical condition related to pregnancy or childbirth.

Race discrimination: Involves treating applicants or employees unfavorably because they are of a certain race or because of personal characteristics associated with race (such as hair texture, skin color or certain facial features). Color discrimination involves treating someone unfavorably because of skin color complexion. Race/color discrimination also can involve treating someone unfavorably because the person is married to or associated with a person of a certain race or

color. Discrimination can occur when the victim and the person who inflicted the discrimination are the same race or color.

Religious discrimination: Involves treating applicants or employees unfavorably because of their religious beliefs. The law protects not only people who belong to traditional, organized religions, such as Buddhism, Christianity, Hinduism, Islam and Judaism, but also others who have sincerely held religious, ethical or moral beliefs. Religious discrimination can also involve treating someone differently because that person is married to or associated with an individual of a particular religion.

Sex discrimination: Involves treating someone applicants or employees unfavorably because of their gender. Discrimination against an individual because of gender identity, including transgender status, or because of sexual orientation is discrimination because of sex in violation of Title VII.

Harassment: The U.S. Equal Employment Opportunity Commission defines harassment as unwelcome conduct based on race, color, religion, sex (including pregnancy), national origin, age (40 or older), disability or genetic information. Harassment becomes unlawful where 1) enduring the offensive conduct becomes a condition of continued employment or 2) the conduct is severe or pervasive enough to create a work environment that a reasonable person would consider intimidating, hostile or abusive. Anti-discrimination laws also prohibit harassment against individuals in retaliation for filing a discrimination charge, testifying or participating in any way in an investigation, proceeding or lawsuit under these laws; or opposing employment practices they reasonably believe discriminate against individuals, in violation of these laws. Offensive conduct may include, but is not limited to, offensive jokes, slurs, epithets or name calling, physical assaults or threats, intimidation, ridicule or mockery, insults or put-downs, offensive objects or pictures and interference with work performance.

Interpretations of what constitutes harassment or discrimination vary significantly state to state. In a case involving an adult apprentice in a plumbing program, the apprentice had to leave class early and missed three subsequent days of work due to a medical emergency involving his spouse (Presley, 2008). The apprentice was terminated from his plumbing apprenticeship for these absences. Frees, the student apprentice in this case, sued the Seattle Area Plumbing and Pipefitting Industry Journeyman and Apprentice Training Committee (JATC), citing Family Medical Leave Act (FMLA) violations. JATC defended itself claiming it was an educational institution and that students don't qualify for FMLA. Yet, the apprentice worked and took classes for a total of 38.4 hours per week. Furthermore, based on the program standards, more time was spent working then in a classroom. Therefore, the court ruled in Frees' favor, finding that in this case, the apprenticeship program constituted a joint employer (academic and workplace).

These types of violations can seem unfair to legally employed apprentices. Therefore, it's important to ensure MOUs, employment contracts, employee handbooks and policies are adequately covered and understood. Making sure this burden is clear to apprentices before they enter the workplace is important. Although most modern workplaces try to maintain equitable circumstances and to welcome new employees, issues still arise.

According to the National Women's Law Center (NWLC), gender discrimination continues to create barriers to many occupations for women. In the NWLC publication, "Women in Construction: Still Breaking Ground" (2014), it was noted that women are nearly 48 percent of the labor force, and although there are 1.9 million construction jobs, women remain underrepresented in the construction industry at 4.5 percent and only comprise 2.2 percent of construction industry apprentices. Of those women who do receive apprenticeships, 51 percent leave the industry.

As was already covered in the 504 section, students with disabilities may encounter many issues while pursing an apprenticeship. During their K–12 schooling, students with disabilities often face cruel treatment from their peers and, unfortunately, sometimes from faculty and staff as well. Holzbauer and Conrad (2010) created a typology of disability harassment occurring in secondary schools. Using focus group data from interviews with 6th- to 12th-grade students with identified disabilities and focus group data from parents of students with disabilities, the researchers constructed three cultures of disability harassment, six major types of disability harassment and gave examples of behaviors within each type. (See "Typology of Disability Harassment Cultures, Major Types, and Sample Behaviors"

Table 6.2 Typology of Disability Harassment Cultures, Major Types and Sample Behaviors

Culture of Marginalization		Culture of Denigration		Culture of Intimidation	
Pigeonhole	Abandon	Manipulate	Belittle	Scare	Violate
Patronize	Ignore	Trick	Name Call	Taunt	Trip
Gawk	Neglect	Entrap	Mimic	Threaten	Steal
Spurn	Ostracize	Goad	Ridicule	Torment	Hit

ADAPTED FROM HOLZBAUER & CONRAD, 2010

Hopefully, few if any apprentices will face issues of harassment and discrimination in your school district, but recognizing what constitutes harassment and discrimination and how to report it may help a student apprentice in need should such issues arise.

Termination of Student Apprentices

Just as student apprentices have the right to end their employment, companies that hire apprentices also have the right to terminate employment. Termination should be based on policies, and these policies should be described in detail in the employee's handbook and MOU signed by the student apprentice and the company. The termination policy may vary by state, organization or district. For example, in Australia, termination may be done by the apprentice or company during a probationary period. After the probationary period, it is understood that both parties are fully committed to program completion, and the contract may not be terminated without direct protocol being followed as guided by the Department of Education, Training and Employment (2014).

Termination is an important aspect of the MOU; companies and students need a way out of the relationship if it isn't satisfactory for either party. Just as student apprentices are allowed to leave the apprenticeship program and not complete the contract, companies are also allowed to end employment if student apprentices aren't fulfilling the obligations of the MOU. However, if a student is terminated or chooses to leave the apprenticeship, the school will have to decide how much credit the student earned during the completed portion of the apprenticeship.

Termination and due process: Termination of any employee for workplace performance shouldn't come as a surprise to the employee. In other words, employees need appropriate feedback and time to correct behaviors that aren't meeting performance expectations. Due process may be defined as progressive discipline of an employee (Falcone, 2017). For discipline to meet the standards of due process, the employee must understand the expectations of performance and must also understand the consequences if performance expectations are not met. As Falcone points out, a written or verbal warning may not meet the criteria of due process if the worker receiving the warning, or reprimand, doesn't fully understand what is expected or the consequences of not meeting those expectations, even if the meeting with the worker is documented. Furthermore, due process laws vary from state to state. For example, most states are considered "at will," meaning an employee may be fired at any time for any reason, with some exceptions such as breach of contract, discrimination and time off work for family and medical leave, jury duty or military service (Louisiana State Bar Association, 2010).

"If students aren't doing well, they should be helped," Pearce said. "We should figure out if there is a misunderstanding, and we should train them so they better understand the job. This is the counseling process you would do with an employee at any place where you want them to be there long term."

An essential key to Pearce's concept of the remediation process is the employer's investment in a long-term relationship with the student apprentice. Using this long-range view, if the student apprentice is teachable and motivated, the employer may need to adjust the workplace learning strategies to improve the school-to-work transition. Pearce also suggested having student advocates who might be able to assist student apprentices when they are having difficulties adjusting to the workplace, accepting feedback, understanding expectations or simply struggling with the demands of work.

Documentation of due process: The school counselors who provided input for this publication all said they would want to receive some type of documentation of due process from apprenticeship employers. In some instances this might be documentation of verbal warnings, documentation of written warnings regarding job performance or other performance evaluations. The school counselors wanted this documentation so they could counsel students having difficulty in apprenticeship placements and help them become more successful.

"Imagine I'm working with a student who has an apprenticeship and that student doesn't like what he or she is required to wear to work," Shauna Hobbs, school counselor at Grand River Academy in Mesa County School District. "Perhaps he or she has to wear a uniform or a dress or some kind of clothing they just don't like.

So one day this student shows up without the required uniform and is written up. I would want to know about this incident. This gives me a chance to help the student understand workplace expectations and why they are important."

In regard to hearings or disposition meetings held regarding termination, several school counselors shared optimal practices for apprenticeship programs. "The district coordinator should be there, the third-party provider representative, the student apprentice, the supervisor and the student should have the right to have their parent there," Burns said.

"Students might need an ally in the room if everyone else is a stranger," Vanderlinden said. "It's intimidating for a kid to be sitting around a table with adults when they are in this kind of a situation, and they might need someone who can help them sort out or make sense of what's happening."

However, if student apprentices aren't doing their work well, keeping them in the same situation isn't a solution, and, in the real world, termination would be a consequence. Students entering an apprenticeship program should understand the role they are entering isn't a work trial; it's a real occupation with real expectations. Therefore, their companies will be counting on them to perform each day. Further, most companies and supervisors will also be looking for ways to encourage and support student apprentices. Remember, a major goal of the apprenticeship program is to create a pipeline from school to the workplace, and companies are looking for their future workforce. In other words, in most instances, apprentices will be entering a safe, supportive atmosphere with adults who are excited to welcome them to the workplace.

Student Concerns Recommendations

Although there are few instances where student apprentices will enter unsafe work conditions, it is still best to have a few promising practices for preparing for these worst-case scenarios.

Student Issues Recommendation One: 1

Include workplace bullying, discrimination and harassment training in both the supervisor training and student training portions of the apprenticeship program. Ensure student apprentices understand the protocol for reporting workplace bullying concerns.

Most students will understand what bullying and harassment are in terms of K–12 schools but may not understand what behaviors are considered bullying, harassment and discrimination in the workplace. Student apprentices may also need reminders about what types of humor, social media and other information are appropriate to discuss or share in the workplace and what isn't. Covering this information may help a student who needs support or who ends up in some trouble later. Review and discuss the following case study.

CASE STUDY 6.1

Tyler

Tyler was selected to participate in an electrician apprenticeship program. Tyler was asked to visit with his school counselor, Mr. Sanders, after the first quarter. Tyler had completed his basic competencies and had reached the first-quarter goals set forth by the apprenticeship coordinator. However, Tyler didn't seem happy about his progress. When asked how things were going, Tyler didn't make eye contact with Mr. Sanders and said, "I guess it's okay." When pressed for more information, Tyler got tears in his eyes and said he didn't want to talk about it. Mr. Sanders told Tyler he would like to help him and asked Tyler to please try to trust him. Tyler shared that at the worksite he is called names and he felt really uncomfortable. He said people have played pranks on him, and he doesn't like it there. When asked what kinds of names he's been called Tyler said numerous employees call him "oreo," a derogatory term used to refer to the fact that Tyler is biracial. Tyler said sometimes the employees hide or steal his tools hidden. Tyler said he's often been made fun of for his skin color but didn't think he would be made fun of on a job working as an adult.

In your group discuss:

1. In this situation, how should Mr. Sanders proceed in his role as the school counselor?
2. In regard to Tyler, what type of documentation or protocol would you suggest he follow?
3. As a group, come up with a set of action steps for working through this situation.

Student Issues Recommendation Two: 2

Ensure students understand termination rights or company due process policies and procedures. Include this in onboarding transitions.

Although students may understand what it means to be terminated, be sure they know where to find the information on company policies and procedures for due process and termination. If there is a process of oral or written warnings, explain why these are important and how to accept and grow from this type of feedback. Also help students understand that some violations will result in termination regardless of due process (e.g., sexual harassment). Review the and discuss the following case study.

CASE STUDY 6.2

Zander's Termination

Zander is an 18-year-old student in his second year of apprenticeship. Zander's mother called the office to inform his apprenticeship teacher he was terminated due to damage of company property and violation of safety rules. When Zander arrived at school he was angry and defensive. The school counselor, Ms. Butler, asked Zander what happened. Zander said he was trying to get a lot of pallets loaded and he had placed what he thought was a "fair amount" of weight on a forklift. The forklift couldn't handle the weight and tipped over into shelving, causing damage to the fortlift, a shelving unit and several pallets of building materials. Zander feels he was unfairly terminated after two years with the company and said, "It's not like anyone got hurt or anything." After Ms. Butler speaks to the apprenticeship worksite supervisor, she finds out Zander has been driving a forklift for about three months and received extensive training (certification) on forklift operation when he turned 18. The worksite supervisor said the safety regulations of driving the forklift are a major issue and that Zander had received feedback twice previously about overloading the forklift and accurately weighing supplies. The supervisor believes Zander was rushing through his work in an attempt to leave early for a concert.

In your group discuss:

1. In your estimate, did the worksite supervisor do enough to prepare Zander for driving the forklift safely?
2. If so, is this a fair termination?
3. How might you help Zander understand this termination and grow from it?
4. What type of termination meeting would you like to have had with the worksite supervisor, school representatives and Zander to ensure the academic end of the apprenticeship is given closure as well?

Section Summary

In most situations, student apprentices will have positive workplace experiences because supervisors and companies will want to host them and are looking for ways to grow apprentices' knowledge and retain them as employees. However, in a few cases, there may be instances where apprentices feel bullied, harassed or discriminated against. In some rare instances, apprentices may be the perpetrators of this behavior. Finally, there may also be circumstances leading to termination of apprentices. When this happens, school leaders will need to determine how to credit students' work completed for the academic portion of the apprenticeship and how to help the student learn and grow from mistakes to become a better worker in the future.

Student Concerns Chapter Activities

Activity 1: Sometimes students may quit an apprenticeship after finding out the field isn't a good match, but the students may be terrific employees and hard workers. If you had a student like this, how might you handle the situation? Would you be willing to help the student find a new apprenticeship? Why or why not?

Activity 2: If one of your students were going to be terminated, would you want to be notified? Would you want to be present? Why or why not? Should student apprentices have the right to have an educational representative present for a termination meeting? If so, how come? If not, why not?

Activity 3: If a student disclosed he or she felt sexually harassed by a workplace supervisor, what advice might you give to the student? What support would you offer? If the student were afraid to report for fear of losing the apprenticeship opportunity, how would you help?

7

Career Development in K–12 Schools

As previously mentioned, the ASCA Mindsets & Behaviors for Student Success is a template for designing individual, small-group and whole-group interventions in the area of career and college readiness for K–12 students. The Mindsets & Behaviors are standards addressing the self-regulatory, social and learning skills and attitudes students should possess to be successful in postsecondary endeavors and the workplace. These skills and attitudes are based on research and evidence and aren't meant to be taught in a single lesson or one setting. Rather, the Mindsets & Behaviors are developmental and meant to be cultivated through sustained and systematic programs. Thus, career and college readiness is assumed to be sequential and developmentally facilitated within the context of comprehensive school counseling programs. Likewise, the ASCA National Model was designed with the perspective that student career development is an essential K–12 program focus. Yet, in spite of this foci, many students are notably underprepared for both college and career. For example, in a study by the nonprofit YouthTruth (2011, 2015), more than 165,000 high school students were surveyed about their perceived career and college preparation. Notably, 87 percent of students reported wanting to attend college. However, only 59 percent actually expected to attend a four-year college, and another 12 percent expected to attend a two-year college. Most concerning, only 45 percent of students reported feeling positively prepared for career and college.

There are many reasons students may feel underprepared in these areas. Often, the core curriculum in content areas (i.e., math, English, science) takes precedent in schools. Students' career and college preparation is often left to the secondary school years in spite of evidence that students' career development is foundational in the

formative years of elementary school (Curry & Milsom, 2017). In this section we review career theories most relevant for K–12 students. Next, we consider the sequential, developmental process of K–12 career programming in schools and what successful programming might look like. Finally, this chapter ends with recommendations for career and college readiness programs supporting students' postsecondary and workplace development.

Career Theories

School counselors should have a basic understanding of career theories and how they apply to children and youth. Several career theorists stand out as essential to K–12 school settings: theory of vocational choice (Holland, 1973), theory of circumscription and compromise (Gottfredson, 1981), lifespan-lifespace theory (Donald Super, 1953; 1980) and happenstance learning theory (Krumboltz, 2009). A brief review of each is given.

Theory of vocational choice: Holland's theory of vocational choice was developed on the main premise that individuals are most likely to experience career satisfaction and success in the workplace when there is a match between their interests and chosen career. Holland developed a typology of personalities for careers based on personal interests, abilities and values. Assessment using instruments with items constructed to determine typology is conducted to develop a code. Then a type (code) is generated with an occupational field of careers that are likely matches for the individual. The six types are: realistic, investigative, artistic, social, enterprising and conventional. See Table 7.1 for a description of each.

Table 7.1 Holland Types

Type	Description
Realistic	Individuals fitting the realistic type work well with animals, machines and tools and generally enjoy growth and practical activities such as working with plants and animals. Many individuals with this type avoid social career activities.
Investigative	Individuals fitting the investigative type enjoy solving science and math problems. These individuals generally avoid persuasion and sales activities.
Artistic	Individuals fitting the artistic type enjoy creative work such as theater, dance, music or writing. These individuals generally do not enjoy repetitive work.
Social	Individuals fitting the social type enjoy work involving helping others. Individuals fitting this type generally avoid work involving tools, machines or animals.
Enterprising	Individuals fitting the enterprising type enjoy leading, sales and entrepreneurship; however they do not enjoy scientific or analytical thinking.
Conventional	Individuals fitting the conventional type enjoy working with numbers and math, and they generally don't enjoy unstructured work.

ADAPTED FROM WWW.CAREERKEY.ORG

Many assessments with Holland-type inventories are available, such as O*Net. There is also a World of Work Map generated with students' ACT scores that provides a Holland type for students taking the ACT. Finally, many career counselors, college counseling centers and high school counselors also use the Self-Directed Search, a career assessment developed by Holland (1994). The theory of vocational choice and typology assessments can help school counselors teach students about careers related to personal interests, values and aptitudes, and it is also useful for helping students narrow down their search for a career that might be a personal match for them.

Theory of circumscription and compromise: In the theory of circumscription and compromise Gottfredson posited that two major processes occur that influence children and youth in their career choices. The first of these processes, circumscription, begins as young as kindergarten. Children begin to understand what a career is, and they begin to self-limit their career options. This self-limiting is based on size and power, sex roles, social roles and their unique self and interests. One way to mitigate such limiting is to expose students to career exploration early and often and to role models who don't reinforce stereotypes about gender, race and ability. In the second process, compromise, youth focus on the careers left in their purview (those not circumscribed or self-limited) and further refine their choices based on careers they perceive to be accessible. Gottfredson's theory may have particular utility when designing programs or lessons for girls, students from low socioeconomic systems and students marginalized by race, ethnicity, sexual orientation, gender expression or disability (Curry & Milsom, 2017). School counselors working with these populations should review this theory in greater depth and its potential applicability.

Lifespan lifespace theory: In lifespan lifespace theory, Super contended that career choices are an ongoing, lifelong process. Based on the roles individuals occupy at different points throughout their lifespans, the occupational choices they make may vary to accommodate life roles and life concerns. For example, some individuals may leave work for several years or work only part time while raising small children. Another example is an individual with an occupation requiring travel, which may become difficult or impossible if that same employee has to take care of an elderly parent at some point. Super's theory, especially the career rainbow technique, is useful for helping students develop mindsets that career exploration and development is a lifelong process as one's career needs may change.

Happenstance learning theory. Krumboltz argued that learning about careers occurs through planned and unplanned opportunities, as well as through both positive and negative experiences. Additionally, learning may occur through observation or vicarious means (e.g., social media, guest speakers, job shadowing). Krumboltz also underscored the necessity of unplanned events on career development. For example, imagine a ninth-grade student, home for summer vacation, is asked by a neighbor to walk her dog while she is on vacation. She tells him she will pay him $15 dollars per day. As the student is walking the dog, another neighbor sess him and asks if he would like to watch her dog as well. He enjoys walking the dog so he says yes. Energized by having two paying clients, the young man decides to advertise his dog walking on a neighborhood e-mail distribution list. He is surprised to find that many people need their dog walked during summer because they don't want to walk their dogs in the

heat when they return home from work, and a lot of people take vacations and would prefer to leave their pets in the home with a dog walker checking on them daily. Soon, he has daily work he enjoys. He decides to keep the job throughout the school year. He develops a flier and distributes it in two nearby subdivisions. He opens a bank account to save money for a car. Although he isn't sure what career he might want, he definitely sees he might enjoy owning a business and entrepreneurship. He might not have learned these things without having the opportunity to earn money through walking his neighbor's dog.

Happenstance learning theory is important for school counselors because it can help put into context how everyday learning opportunities might become learning tools for students. By helping students contextualize what they are learning (both good and bad examples), school counselors and educators can help students apply what they see and learn to the world of work in meaningful ways. Krumboltz's theory reminds us that every moment is a potential opportunity.

Career development theories provide a key element for quality career programming in K–12 schools. School counselors and other educators should begin by understanding and researching theories to better contextualize and understand data about the student populations with which they work. A solid understanding of theory helps inform program development and how student learning outcomes might be assessed.

Student Career Preparation

A closer review of the YouthTruth survey report mentioned early in this chapter reveals additional concerns about high school juniors' and seniors' career preparation. Only 46 percent agreed their schools had helped them figure out which careers matched their interests and/or abilities. Further, only 49 percent agreed their schools had prepared them to understand the steps they needed to take to get the career they wanted. Only about one-third had accessed career counseling. Again, the overarching explanation for this lack of readiness is that pressure on educators to prepare students academically and to continually provide assessment and accountability measures has left little time for anything else in the K-12 environment (Robinson, 2016). Thus, students have minimal development in career and college readiness, an area that will affect their holistic wellbeing throughout their lives and which inhibits their ability to make effective decisions regarding postsecondary transitions. It's likely that many students don't fully understand their career options and postsecondary opportunities; therefore, making truly informed decisions about either becomes difficult at best.

For example, Bailey-Fougnier, noted that when speakers go to local high schools, students are often underprepared in the area of career development in basic ways. In many cases, students don't understand the constellations of careers within career clusters. "When students are interested in the medical field, they think their choices are nurse or doctor," he said. "They don't think about radiography, occupational therapy, physical therapy, surgical technician, certified nursing assistant or all of those possibilities.

Bailey-Fougnier's example underscores the importance of facilitating career development throughout the K–12 experience rather than waiting for high school and expecting students to just know their options. Some states have recognized this need and responded by bringing about specialized programs and interventions beginning in middle school. For example, South Carolina made career development facilitators required career development personnel in all middle and high schools. Although such measures are a progressive step forward, a sequenced, developmental K–12 program is preferable.

Career Development Sequencing

Career development should follow a trajectory, just like other academic areas. Students have to learn information in a sequential and consecutive fashion to gain skills and knowledge they will use when more difficult information is introduced. Consider the same analogy for math; students must first recognize numbers and their values before they begin doing addition and subtraction. From there, students may learn multiplication and division, then fractions, ratios, decimals and more. The skills and knowledge of math are built for students over time through planned curriculum. Similarly, we don't teach children to effectively play basketball in one day. They must first learn to dribble, pass a ball, shoot the ball at the basket, guard and other skills until they are able to put multiple skills together at one time with a lot of

Table 7.2 Grade level and career content knowledge

Grade Level	Career Content Knowledge
Pre-K–K	Community helpers, helper vehicles, Career play
First Grade	Tools of the trade, vlothing of the trade, career vocabulary
Second Grade	Career vocabulary, career clusters, typical day on the job
Third Grade	Career pathways, relating work and school
Fourth Grade	Postsecondary life, career pathways, relating work and school, technology and Career exploration
Fifth Grade	Postsecondary life, exploring all aspects of a career
Sixth Grade	Interests and values related to career
Seventh Grade	Creating a resume tying current activity to future career goals
Eighth Grade	Transition to ninth grade, career pathway planning
Ninth Grade	Deep career exploration and move toward commitment
10th Grade	Postsecondary exploration, early workforce experiences
11th Grade	College visits, essay writing, college application timelines, financial literacy
12th Grade	College applications, college commitment, postsecondary transition

ADAPTED FROM CURRY & MILSOM (2017)

practice. The same is true for other subjects: language arts, reading, science, history, art, physical education, music and so on. Yet, for decades now schools, employers and society have expected youth to function in the realm of career and college preparation with little information given consistently and often without planning (Curry & Milsom, 2017).

Just as math and reading begin in pre-K, so too, should career development (Curry & Milsom, 2017). Gottfredson (1983) theorized that children as young as six can realistically understand aspects of a career. This information might include what a person actually does, what tools the individual uses to do his or her work and what clothing is needed for specific types of work. Below is a table, based on Curry and Milsom's (2017) text that breaks down by grade level what children should be learning about career (career content knowledge).

Technology

When using technology, educators should determine their learning outcomes before selecting the technology medium. Students need opportunities to investigate careers, and technology provides a unique medium for access. Choosing the best tools to provide opportunities for exposure is important, but being deliberate when choosing and keeping students engaged is critical. There are many expensive websites and resources; however, there are just as many high-quality free resources useful to students. For example, all students need to have a working knowledge of how to navigate Occupational Outlook Handbook (U.S. Department of Labor, Bureau of Labor Statistics) and O*Net (U.S. Department of Labor, Employment and Training Administration). Other examples of freely accessible technology include ConnectEd Studios, which provides short videos showing a day in the life of a person in a particular career. Special attention is paid to diversity (e.g., women, minorities) (California Center for College and Career, 2018).

Career Assessment

Career assessment should be an ongoing process where students are doing meaningful self-exploration and tying what they learn about themselves to potential careers. Career assessment that is developmentally sequenced with career curriculum will be the most beneficial, particularly if results are explained to students and parents. This creates a great opportunity for some self-assessment including using free online resources such as O*Net's personal profiler. The profiler provides a Holland-type inventory that matches students' interests to occupations, and it also allows students to think about how much ongoing education feels tolerable. In other words, does a student feel motivated and committed to going to college as long as necessary to get a degree, or does only some college sound appealing? The generated results provide occupations that fit within students' educational interest preferences. Other types of assessments include the Myers-Briggs Type Indicator (Briggs & Briggs Myers, 2004), the Kuder Planning System (2006), the Differential Aptitude Test (Bennet, Seashore, & Wesman, 1990), Campbell Interest and Skill Survey (Campbell, Hyne, & Nilsen, 1992),

Career Decision Making Self-Efficacy Scale, (Taylor & Betz, 1983) and College-Going Self-Efficacy Scale (Gibbons & Borders, 2010).

Understanding the College Payoff

Within career clusters or occupational fields, careers will have varying degrees of postsecondary requirements (e.g., certificates, associates degree, bachelor's, degree, master's degree, professional degree). However, because college has become increasingly expensive, many families and students are beginning to take a closer look at the college payoff. Specifically, the college payoff is an assessment of the time it takes to earn a degree, the cost to obtain a degree and the projected earnings for the associated career. Within occupational fields, some careers have a better college payoff, and many are the careers requiring associate degrees that have high-earning potential, less student debt and high need or career growth (Carnevale, Rose, & Cheah, 2011).

Students with Exceptionalities

In recent years, legislation and policy changes have created more flexibility to accommodate a wider range of learners and learning styles in K–12 schools. This is an important aspect of career development in that students are more likely to complete K–12 education if school is meaningful and relevant to their needs throughout their K–12 preparation.

Shauna Hobbs, K–12 school counselor, Grand River Academy in Mesa County Valley School District in Colorado, works in a school created with diverse learners in mind. This school is a hybrid model where students learn in a blended format, spending part of the week learning online and part of the week in a classroom setting. Hobbs described students at Grand River Academy as coming from all walks of life and with varying skills and/or concerns including autism spectrum disorder, high anxiety, gifted/talented, students who may have been frequently suspended and had difficulties in traditional classroom settings and very involved students who need flexible schedules (e.g., actors, athletes, rodeo stars). "The gifted and talented curriculum is individualized and self-paced, which allows students to go deep and wide within their interests," Hobbs said. "Whereas, students who have an autism spectrum disorder, such as Asperger's, may benefit from the smaller classrooms, quieter spaces and support."

Hobbs noted that Grand River Academy faculty and staff have a focus on helping students succeed, even if that means taking longer than the traditional four years of high school. It is this model of flexibility and individualized educational paths that has allowed Grand River Academy students to be successful in terms of career and postsecondary preparation. To engage students academically in meaningful ways, Grand River's faculty continually goes outside of the academic box: teaching math using yarn on weaving looms, having students create their own watermarks through making their own machines in a maker lab and teaching English through theater and drama. All students at Grand River Academy take a career class.

Most importantly and uniquely, every student at Grand River Academy, regardless of age, gets opportunities to play. Play equates to creativity, Hobbs said. Therefore, every student gets a chance to enjoy the climbing wall, play ping pong, and go to the playground, including high school students. This play stimulates growth, development and creativity, which are embraced at Grand River Academy, Hobbs said. But how might this model of learning influence career development?

It turns out that creativity matters a lot, actually. For example, in an experimental study by Kargar, Ajilchi, Goreyshi and Noohi (2013), students taught creativity and critical-thinking skills, through 10 weekly sessions (two hours each), were compared with a control group of students not receiving the creativity and critical-thinking skills intervention. Based on the researchers' results, the experimental group demonstrated positive, significant gains in informational identify formation (understanding how to make important decisions and problem-solving skills) and decreased in somatic symptoms such as anxiety, depression and insomnia. These improvements in emotional health may be due to increased problem-solving and creative strategies for self-care and conceptualizing one's difficulties (Kargar et al., 2013).

When I have discussed this book and the concept of high school apprenticeships with both educators and community members, many people are perplexed about how we might expect high school students to commit to careers and postsecondary options. This viewpoint is understandable given that many students will change their mind about careers over their lifetime. According to McKay (2017), the average individual is changes careers three to seven times over the lifespan. This number is problematic, however, because the number does not consistently reflect an agreed-upon definition for what constitutes career change. For some, it's changing employers. For others, it's changing occupational fields (McKay, 2017). What we do know is that there is little likelihood that today's youth will be hired into a position at a company and remain in the same occupation, at the same company, throughout their lifespan.

According to a podcast of NPR's Weekend Edition Saturday (2016), there are many individuals who begin to experience despair during middle adulthood due to changes in life. In his theory of psychosocial development, Erik Erikson (1963) associated the task of generativity versus stagnation with the middle years of life and for good reason. An individual with a thriving and fulfilling career is more likely to be generative in nature. Generative people mentor others, provide community service and contribute as productive citizens. Conversely, those who are stagnant tend to burn out, are less engaged in the development of others and tend to be less involved in community engagement. The reasons for seeking career change are numerous: (1) loss of career due to unemployment or phase out; (2) health issues prohibing continuation of a specific type of work (e.g., back pain that makes it difficult to sit for prolonged periods of time); (3) family concerns such as caregiving for children or older parents; (4) boredom and feeling unchallenged; and (5) simply looking for greater meaning in one's work, particularly in an existential manner. All of these reasons have import, and there are some strategies related to career development that may prepare students (future employees) to mitigate some of these concerns later in life.

Engaging Parents in Career Development

Throughout the K–12 experience, parents should be included in career and college planning. Students need to feel supported by their families when making career and postsecondary decisions, and a crucial part of that decision-making process is having family members who are informed about options and opportunities. Therefore, school counselors and educators should help parents and guardians understand how to promote the ASCA Mindsets & Behaviors for Student Success at home.

Elementary school parents: For parents of younger children, school counselors and educators may help parents learn how to use immediacy, or opportunities in the moment, to enhance their children's career knowledge. A great way to do this is to teach parents to become career co-journalists with their children whenever they leave home. At the library, restaurants, bakery, grocery store, farmer's market, auto repair shop, visiting the doctor's office and everywhere, ask people questions such as:

- What do you like most about your work?
- What subject(s) did you like in school?
- What is something challenging about your job?
- If someone were interested in your type of work, what skills do they need to develop?
- What is something you have to do every day that might surprise people?
- What is something you didn't do well at first that you are really good at now?

Another way to encourage parents to informally get involved in their children's career development is to have their children "try on" careers at home. For example, when cooking dinner, rather than asking their children to help them prepare a meal, parents can invite their children to be a chef. They can dress their child as a chef (apron) and speak about the cooking utensils as tools of the trade and use the names of the tools (spatula, ladel, sauce pan) to increase their children's vocabularies. Other examples of potential careers to introduce around the home may include gardener or florist, banker, baker, farmer, groomer and more. Encourage parents to consider rewarding their children with career experiences rather than candy or toys. For example, if a child has met a goal such as honor roll or a behavior goal such as not receiving disciplinary action for a period of time, taking the child on a career field trip is a great way to celebrate. Some career field trips include visiting a fire station, space center, art museum, taking a cooking class together, etc. Often these opportunities have no cost.

Finally, elementary parents need a lot of information about college planning and finances. Beginning early will help them make important decisions about their family's budgets and how to best support their children's future educational options. Administrators and school counselors should consider having opportunities for parents to gain financial education planning access beginning as early as pre-K and kindergarten.

Middle and high school parents: Parents with children in middle and high school need ongoing information regarding career and college planning, but they also need interventions in regard to the current decisions their children need to make and the potential outcomes of those decisions. Eighth grade is a critical year in the decision-making process as many eighth-grade students will begin choosing their high school

plans of study and developing their six-year graduation plans. Although these plans aren't set in stone, it's important for students to have a plan in mind and to begin being deliberate in how they choose their courses, plan their daily lives and the strategies they use for selecting their career pathways and postsecondary options. Although school counselors and educators will continue to meet with parents in large groups, they will also begin having more small group and individual meetings tailored students' college and career plans. One way to do more of this tailoring process is through tools such as the High School Career Conversations ASCA and Middle School Career Conversations available for free on the ASCA website (*www.schoolcounselor.org*). Ongoing parent workshops may include topics such as career exploration at home and in the community, helping your child to become more self-reliant, financing college, helping your child become a more critical thinker, preparing your child for the college transition.

Community Partners and Career Development

Long before students apply for apprenticeships, the role of community partners is essential for developing students' natural interests and abilities to the world of work. Beginning with field trips, career day and guest speakers in elementary school, the importance of establishing a community partner network is well-documented in school counseling literature (Curry & Milsom, 2017). During middle school, community members can bring an authentic voice about career to students by having structured opportunities for personal conversations. For example, Goodman (2018), described career café conversations she hosted for middle school students. The career café was open at different times during the year. In sixth grade the students did in-depth career exploration. Students explored careers in a variety of settings (i.e., outdoors, indoors, hospitals). The English teacher had students write a haiku about a career and a persuasive essay about why students should attend the career café. In seventh grade students were administered a Holland-type inventory, and after receiving their codes, they were given a list of potential careers that might be a match for them. Attendance at the career café is based on students' Holland codes; thus, students were invited to the career café matching their code. Students sit at tables (and rotate throughout lunch to different tables) with someone who works in a field that is within their same Holland codes. For example, students attending the career café for social codes might meet individuals with the following careers: athletic trainer, nurse, librarian, social worker and physical therapist. Whereas, students attending the career café for realistic codes, might meet individuals with the following careers: auto mechanic, computer technician, architect, medical technicians, chef, surveyor, and logistics analyst.

Beyond activities such as the career café, community partners can help prepare students for successful apprenticeships and workplace opportunities through collaborations such as mock interview days, where students bring their cover letters and resumes and practice interviewing. By getting an opportunity to interview with and receive quality feedback from business professionals, students improve their interviewing skills prior to entering the job market. For community partners who are not able to commit to hiring apprentices for long-term employment, schools may seek shorter term worksite collaborations such as job shadowing, internships or practicums.

Sending students out for workplace experiences has gained much attention in recent literature. As previously mentioned, job shadowing, internships, apprenticeships and practical experiences are now seen as an opportunity for students to better understand the world of work, apply classroom knowledge and gain useful employment skills. However, in many cases, the world of work is coming to the classroom itself. Cam Wyatt, principal of the Grand Junction Career Center in Colorado, leads a team of innovative educators who have taken classroom education beyond expectations. Everything in the career center is applied and practical. For example, students wishing to learn about hydroponics and horticulture (a growing area of need in Colorado), grow flowers, vegetables and fruits on campus. The flowers are sold in a student-run floral shop where students learn boutique floral design and sell their products to the public. Fruits and vegetables grown at the school are used in the culinary arts program at a café run on site and open to the public for lunch. Students wishing to enter auto mechanics first learn the basics of problem solving using Briggs and Stratton lawn mower motors. These motors, provided by Briggs and Stratton, are part of an affordable educational curriculum that includes free training for teachers through established networks and partnership with the company.

Once students have mastered troubleshooting motor issues, they advance to fixing lawn mowers donated to the school by the public. The repaired mowers are then sold, creating program revenue. Students studying carpentry and construction actually build a house. The house is sold, and the profits go back to the school. In this way, students at the Grand Junction Career Center aren't simply training for a future career; they are working in their careers actively as they are earning credit, industry certificates and invaluable workplace experience all while still in high school.

Career Development Recommendations

In this chapter we reviewed career development theories and a basic K–12 career and college readiness program sequence. Following, we introduce recommendations for effective comprehensive career and college preparation of K–12 students. We conclude the chapter with a summary and case activities.

Career Development Recommendation One: 1

Career and college readiness should be development, sequential and comprehensive in all grades beginning in kindergarten.

Career and college readiness is a developmental process and should be comprehensive in nature beginning in kindergarten. Students given access to early-life career exploration are less likely to make foreclosed career decisions (Curry & Milsom, 2017) or to circumscribe and self-limit their own career options (Gottfredson, 1981). Career and college access curricula development should be a coordinated effort across the K–12 system. Review and discuss the following case study.

CASE STUDY 7.1

Who is Doing What?

Jamie, a ninth-grade high school counselor, was informed in January by her district that her students will have the option of going to an apprenticeship program beginning in 11th grade. As part of that program, she was told she needed to be sure students are prepared to enter 10th grade ready to make decisions about career and technical education (CTE) programs they are interested in that may have apprenticeship options. Jamie had to learn a lot about apprenticeship programs in a short amount of time so she could present information to families. Moreover, she wasn't sure how much her students understood about CTE careers or apprenticeships or how prepared they would be to interview for these careers by 10th grade. Doug, the 10th-grade school counselor, heard he would be responsible for setting up mock interviews in the fall. He wanted to know if students had ever done a resume or cover letter. Jamie hadn't done those things with the students. They decided to call the two middle schools that feed to the high school and ask for a meeting with the middle school counselors.

At the meeting, one middle school counselor, Lynette, shared that she follows a comprehensive career and college program that includes self-assessments (values, interests, Holland codes) and that students take field trips to a place of interest based on these assessments. She also has them develop a resume, and they have a mock interview day and student career showcase. Lynette shared that the two feeder elementary schools for her middle school also complete comprehensive career and college portfolios. She explained that the parents have a workshop series each year that matches what the students are learning about career and college readiness in units about financial literacy, career clusters, college and similar topics. She believes students coming from her middle school cluster will be well-prepared to make CTE apprenticeship decisions. Lynette showed Doug and Jamie some samples of work her students are asked to do.

The other middle school counselor, Rhonda, explained that she does not have time for any of that. She told the high school counselors she is in charge of 504, test coordination, benchmark testing, and she has a lot of time spent on lunchroom duty and discipline. She did say she does graduation plan meetings with the parents.

In your group discuss:

1. How does meeting with Lynette and Rhonda help Doug and Jamie understand their students' current career and college preparation in terms of decision making?
2. If you were Doug and Jamie, what next steps might you take?
3. From a district perspective, what concerns do you see in regard to implementing a program like apprenticeships with these elementary school and middle school disparities in programming?

Career Development Recommendation Two:

Students should have access to quality career assessments and useful career technology.

2

Students need multiple pieces of information to make sound career decisions. By having access to quality career assessment and useful technologies, students gain a wealth of information to help them align their interests, aptitudes and values related to careers. These resources also help school counselors and other educators by giving them a tool to measure students' interests related to careers in varied ways. Review and discuss the following case study.

CASE STUDY 7.2

Tia the Attorney

Tia, an only child raised by a single mother, shared with her school counselor that she is going to be an attorney, just like her mother. Tia clearly admires her mother, and they are very close. Her mother, a well-known attorney in the area, has had many high-profile cases involving social justice issues and is well-respected in the community. Tia wants to be like her mother. However, Tia shies away from leadership and is highly contemplative.

During a workshop for parents and students, Tia and her mother took the Self-Directed Search. Her mother's code was EIS (enterprising, investigative, social). Tia's was RAE (realistic, artistic, enterprising). One of the careers that came up for Tia was architect. Tia's mother was so excited because she said Tia is constantly sketching houses near the French Quarter where they live. Tia looked disappointed. When asked what she thought of the results she said, "I want to be an attorney like my mom." After reviewing Tia's transcript, her school counselor noticed her strongest grades were in math, science and art. Tia's mother is supportive of any career her daughter might want.

In your group discuss:

1. Does Tia's code mean she should not be an attorney? Why or why not?
2. What other data might be useful to collect to help Tia understand a career decision?
3. What does being an attorney mean for Tia? What ways might she find the same meaning in other areas of her life or through other careers?
4. Based on Tia's mother's reaction to Tia's code, what activities or resources might you give her mother to help them further discuss this issue at home? What extracurricular activities might give Tia exposure to a future career as an attorney? As an architect?

Career Development Recommendation Three:

Career and college programming should involve parents and community members.

3

Community partners, volunteers and parents offer students role models, support and guidance in the areas of career and college readiness. These stakeholders have a vested interested in students' development and the community. Review and discuss the following case study.

CASE STUDY 7.3

We're Not Hiring Your Students

Gaston is a 10th-grade school counselor. His school is in the first year of implementing apprenticeship programs. His students were invited to interview with 28 different companies for a total of 56 open apprenticeship spots for the 11th grade year. However, only 37 spots were filled. When Gaston inquired about the additional 19 spots that went unfilled, the district coordinator told him the companies didn't find the students employable. Gaston wanted more information: What was it that his students were lacking? A short list of feedback from the companies included that the students weren't well-prepared to interview, they didn't articulate their career goals well, they couldn't answer how the apprenticeship would add to their overall personal and professional development, and they did not appear to understand the connection between the apprenticeship and their future careers and postsecondary plans.

Gaston knows many students are disappointed they didn't get placed in apprenticeships, and companies are disappointed they didn't get to hire students. Because the apprenticeship program is new, Gaston hadn't done much to prepare students, primarily going over interview questions with them during a classroom lesson in their English classes. He would like to help his students do a better job of making these career connections and preparing for interviews in the future.

In your group discuss:

1. How might Gaston assess students' interview skills to determine if their interviewing techniques and strategies are indeed problematic?
2. How might community members or parents assist Gaston in developing students interviewing skills in the future?
3. What type of program or activities should Gaston plan to offer in subsequent years prior to students' interviewing for apprenticeships?

Section Summary

Students' career development should be facilitated throughout the K–12 education process. Students won't be able to make informed decisions about their future careers based on interests, values and aptitudes without a strong foundation of career exploration built on equity and access. Apprenticeships are one type of work-based experiences that enhance career exploration for students in high schools, but students need time to acquire career knowledge and skills related to apprenticeships prior to entering them. Quality K–12 career development is comprehensive and sequential, involves purposeful and deliberate technology and assessment and engages parents, and community members.

Career Development Chapter Activities

Activity 1: Review Table 7.2. Discuss the following: How well does your district follow a template for student career knowledge by grade level? Do students master a set of standards by grade in the area of career and college readiness? If so, what are the standards, and how are they measured? If not, what problems might it cause to not have standards for career and college in K–12 schools?

Activity 2: How well are parents and community members currently engaged in career and college readiness in your school district? What are some ways community members might be engaged in career and college in the future?

Activity 3: Read the following case study, "Career Role Model: Principal Cam Wyatt" How might a principal like Mr. Wyatt influence students to think of their careers in authentic and meaningful ways? In what ways might Mr. Wyatt serve as a role model to teachers? Parents? What types of messages might Mr. Wyatt's office convey about life and career and the importance of being yourself?

Career Role Model: Principal Cam Wyatt

Cam Wyatt, principal of the Grand Junction Career Center, presents an interesting case of how Donald Super's lifespan lifespace theory is critical to the work we do in schools and how faculty and staff are all role models for students. Mr. Wyatt, a career educator who has taught extensively in Alaska, has been at the Career Center since 2016. He integrates unique aspects of his personality into his workspace. Along one wall, he has electric guitars in various shapes and colors, which exude his enthusiasm for music, and in another space, a stereo, with '70s rock playing at a low volume. On another wall, he has pictures and wood sculptures of various waterfowl including ducks and geese. At first, these two walls might seem like two different worlds colliding in one office space, but in fact, both of these walls fit Mr. Wyatt's intrapersonal dimensions tt in multidimensional ways.

Mr. Wyatt's contagious energy in his work is much like the rock music he listens to: both a science and an art. Although there is a precision to the work being done in the Career Center (i.e., masterfully crafted programs created with industry partners in meaningful ways that will cultivate long-term employability for students), there is also a significant commitment to flexibility and collaboration in how faculty assist students in moving forward toward individual goals. Students, teachers, curriculum specialists and others often mention a new idea to Mr. Wyatt, update him on a student situation or simply provide him with feedback on how a previously planned intervention worked. In all cases, Mr. Wyatt is not the all-knowing guru as principal, but rather, he is part of a student-centered team.

When asked about the ducks on the wall, he explains that many people think of ducks and geese and other waterfowl as unintelligent. He points out, in fact, all of nature is complex although often misunderstood, just like students, who are often mislabeled by society or by themselves. He explains that waterfowl migrate back to the same spot each year, they often travel in social systems, and they return home yearly. Clearly values drive much of what Mr. Wyatt does daily in the Career Center.

There is a 1920s car in the Career Center that had been donated. Although the car is mostly rusted, Mr. Wyatt has a clear vision for it. He wants to place it on the front lawn and have students in the auto mechanic program reconstruct the car, detail it and use it as a beautiful, showpiece-style planter. Mr. Wyatt explains that the school had at one time become run down; it had become a place of less pride. He grew up in Grand Junction, left for 20-plus years and returned home to find the school fully renovated, beautiful and truly an investment by the community. Like with the old car, he wants the community to see the past and the future, what was, what is and what is possible. Just like the birds on his wall, Mr. Wyatt has returning home. Like the old car, he wants the old school from the past to represent Grand Junction's future.

Mr. Wyatt is a compelling leader on many levels. He embodies Super's theory inasmuch as he demonstrats that individuals' careers must match their changing priorities as their lives change. Super stated that careers must fit into the context of what is meaningful in the different stages, different priorities and the different roles of individuals' lives. I don't know all of the details that have shaped Mr. Wyatt's changing priorities, or what specifically brought him home to Grand Junction, but I do know that Grand Junction is an important part of his past. He knows the history of the place and the culture of the people. Grand Junction is also part of his future now, and he is invested in the next generation of learners and leaders in the community.

Leaders like Mr. Wyatt are transformative for students in shaping career and college aspirations because they model what it means to live a meaningful career within the context of one's life. Mr. Wyatt shows who he is through the pictures on his wall that he gives in narratives to students that are meant to uplift and encourage, but I would suggest he is also a role model. For students, faculty, parents and the community, Mr. Wyatt is the kind of principal who exemplifies what it looks like to live congruently in one's lifespan and lifespace within many life roles and balance a successful career.

8

Developing Employability and Financial Literacy Skills

Beyond developing students' capabilities, interests, skills and knowledge in the area of career and postsecondary education, K–12 schools have a vested interested in helping students develop employability and financial literacy skills. According to Sole (2014), due to increasing personal and public debt nationally, many state legislatures have recently passed legislation mandating K–12 students receive information on personal finance skills before entering postsecondary environments. These legislative mandates, along with evidence found by researchers (e.g., Sole, 2014) that many college students have low financial literacy skills, have placed increasing awareness on both mathematics numeracy and mathematics literacy education focusing on financial literacy.

Employability Skills

The National Network of Business and Industry Associations published a document, "Common Employability Skills," listing the skills any person would need for successful employment regardless of the work location. This document outlines skills in three main areas: (1) personal skills (i.e., integrity, initiative, dependability and reliability, adaptability and professionalism), (2) people skills (i.e., communication, teamwork, respect), (3) applied knowledge (i.e., reading, writing, math, science, technology, critical thinking) and (4) workplace skills (i.e., planning & organizing, problem solving, decision making, business fundamentals, customer focus, working with tools and technology). The National Network of Business and Industry Associations acknowledged that there are various routes to acquiring these skills including

traditional education, workplace development (such as apprenticeships), military service, volunteerism and more.

Lerman (2013) noted that workplaces help students obtain employability skills because the context of the environment is conducive to observing and applying these skills. He also suggested that some employability skills are linked to school-based learning and cognition such as time management, creativity, problem solving and solution generation. Lerman asserted that other employability skills may be more linked to characteristics of personality such as honesty, integrity, personal motivation and remaining drug-free. Thus, some employability skills may be promoted throughout the K–12 experience within classroom settings and might be be integrated in the classroom experience as part of career development practice.

As you read these skill areas and the corresponding skill sets, you'll see they align with the ASCA Mindsets & Behaviors for Student Success: K–12 College- and Career-Readiness Standards for Every Student (2014). This is likely due to the fact that ASCA's Mindsets & Behaviors were developed with 21st century employability skills in mind, and, therefore consulting the Mindsets & Behaviors is a promising practicing when developing an apprentice program at any school site. Examples of how to do this are provided in greater detail throughout this section.

When asked what students need to learn to prepare for a future career, Shauna Hobbs, school counselor at Grand River Academy, stated that students need to know that failing is okay. "Failure is important; you can learn a lot from failure," she said. Andrea Bolton, a CTE coordinator in Mesa School District, echoed this sentiment. She described how that employability training was built through a mentor training program and how students were given corrective feedback when they were failing to perform their tasks to the program expectations. Bolton noted that students often take feedback critically and that experiential learning provides students the opportunity to apply, learn, integrate feedback and apply newer more sophisticated skills.

"I worked in a program where we had a mentor-tutor program led by students," Bolton said. "High school students selected to participate as mentors would get to leave and go to work with students, for example, at an elementary school. They would help a teacher out. And they could do it in areas of interest. I had a student who went to the middle school to help the band teacher because he was in band and excelled in that area. But if a student didn't do what he was supposed to do, such as not showing up, or missed an appointment, he had to do some remediation work to prove he could be responsible and earn the privilege to go back out in the larger school community. They would have to work with a teacher on our campus or work in the counseling office and build their skills a little bit before going back out."

By allowing students to fail but supporting them through remediation to regain opportunities to participate in the program, students were able to integrate feedback, regulate their own behavior and find success in the program. This type of program structure is flexible enough to allow students to fail, learn from the experience, change their performance and grow from feedback.

In terms of future employment, in most workplaces, employees receive corrective performance instruction and need to be able to improve performance

as a result. Many students fear such feedback and would rather not try a task than to be perceived as failing. By allowing students to have opportunities to fail and receive correction, we teach them to grow their skills in the area of hearing constructive criticism as a healthy part of professional growth and to listen to feedback nondefensively. We also give them a chance to exercise self-regulation of their behaviors so they may correct their performance with the feedback given. This promotes autonomy and self-direction, both of which are positive characteristics for the future workplace.

Helicopter parenting and the workplace: Although schools may make a concerted effort to encourage students' independent thinking, ability to make mistakes and accept corrections they can grow from, some forms of parenting may actually prevent students from gaining the valuable insights they need to learn from failure. Helicopter parenting, a form of intrusive parenting in which there is intense overprotection of the child and overinterest in all aspects of the child's life by the parent, has gained interest in the last 20 years. Helicopter parenting has been found to lead to lower self-efficacy (i.e., the perception that one will be successful in task completion) when over-parenting occurred even after students went on to college and the workplace (Bradley-Geist & Olson-Buchanan, 2014). Further, expectations of college and responses to workplace scenarios were maladaptive for students who received over-parenting (Bradley-Geist & Olson-Buchanan, 2014). Sirota (2017) noted that helicopter parents want their students to succeed so much that they actually undermine their children's ability to cope with frustration, disappointment and stress. Students with this type of parent don't build the necessary tolerance for difficult tasks because they have too much support; thus, they never have to persevere. Perseverance, or grit, is a healthy part of work ethic behavior. Without developing these characteristics, students are less prepared for the workplace. Examples of helicopter parenting extending into adulthood have been given by many researchers including parents showing up to college classes with their students, helping students with college projects and even attending job interviews with their adult children. One way to help parents avoid these behaviors is to introduce them early and often to a variety of healthy parenting messages through book clubs, PTA meetings, parent workshops and parent-led groups.

Developing Employment Mindsets and Behaviors

In Longmont, Colo., a change occurred nearly a decade ago in St. Vrain Valley School District. High schools were re-created into focused schools meant to help students develop a career emphasis by allowing for more flexible curricula that engaged students' long-term interests. The school district broadened the range of options available to students through intentionally analyzing workforce trends, gathering industry feedback, collecting parent input and making data-driven decisions. Today, St. Vrain has rich, diversified options for middle and high school (see Table 8.1).

At Longmont's Innovation Center, in a P-TECH partnership between the school district and industry partner IBM, students are introduced to real-world careers and employability skills early in their education. Beginning in kindergarten, students are

Table 8.1 Sample list of St. Vrain Valley School District High Schools and Areas of Focus	
High School	**Area of Focus**
Erie High School	**Erie Academy of Engineering & Aerospace** Students experience courses covering essential topics in technology, computer science and engineering while participating in a hands-on, activity-oriented program that utilizes team efforts. Students receive training in current technology using the latest computer software and equipment in use in industry today. Engineering coursework reinforces math and science curricula in a meaningful way, igniting interests in career paths for students. Students will be prepared to pursue a career in technology and/or engineering in a field where a national employment shortage exists and pay scales are among the highest levels for entry-level professionals or technicians. http://ehs.svvsd.org/academics/engineering_academy
Frederick High School	**Bio-Medical Science Academy** Through a partnership with the University of Colorado at Denver, Frederick High School students have the opportunity to take college courses on our own campus, earning high school and college credit concurrently. Frederick High School also offers a four-year Bio Medical Science Academy, in which students explore the roles of biomedical professionals, engage in real-world cases and design solutions to today and tomorrow's most pressing health challenges. http://fhs.svvsd.org/about/school-profile
Longmont High School	**AP Capstone Program** AP Capstone is an innovative diploma program that helps you stand out in the college admission process by developing the critical skills needed to succeed in college and in life. Two new courses, AP Seminar and AP Research, allow you to immerse yourself in topics that matter to you while developing the analytic, research, problem-solving and communication skills colleges seek in their applicants. This challenging program helps you deepen your passion for learning, gives you greater confidence in your academic skills and provides a broader perspective on your world. http://lhs.svvsd.org/node/112937 **Medical and BioScience Academy** The Medical and BioScience Academy (MBSA) of Longmont High School is designed for students interested in careers or postsecondary education rooted in the health sciences. According to the U.S. Department of Labor, industries surrounding the health sciences (including biotechnology, medical studies and other related fields) are expected to experience a tremendous amount of growth over the next 10 to 20 years. MBSA students are primed to take advantage of this opportunity. The MBSA provides rigorous college-preparatory curricula and instruction preparing students for highly competitive admissions and postsecondary education programs in medicine, research and allied health sciences. http://lhs.svvsd.org/academics/mbsa

selected to attend summer camps known as Innovation Academy. Innovation Academy introduces a select group of students to real-world problem solving modeled from IBM's Smarter Planet Initiative (Casile, 2011). An example is the following issue: There is a city that does not have clean water. Many people are getting sick. How might you produce clean water for this city? Students are brought into large maker-style spaces that serve as their project labs. The students are provided with an assortment of materials such as cardboard boxes, tubes, gears, sprockets and more. Students are encouraged to create their own solutions to the problems they are faced with and to persist when the problems seem too difficult or too ambiguous to solve.

It is this element of the work, persistence, sometimes referred to as grit, that has been missing from traditional compulsory curriculum since the advent of No Child Left Behind (U.S. Department of Education, 2004) when schools starting teaching to the test, pushing students to memorize correct answers, and teaching to the lowest rungs of Bloom's taxonomy (Bloom, 1956).

"Our kids were flatlining. They were like, 'How do I get the A on the test?' 'How do I fill out this worksheet?' So we changed our focus," said St. Vrain Valley School District assistant superintendent Patricia Quinones, prior to the district implementing Innovation Academy. "We had to do something different to produce better thinkers using the tools we had, using technology."

Many educators might recognize the characteristics implied by Quinones: low motivation, wanting quick answers, wanting a good grade over knowledge. Many authors have noted that although testing and accountability do have some importance in educational settings, over-testing or testing without clear deliberation may have unintentional consequences (Robinson, 2016). For example, Nichols and Berliner (2008) found over-testing was associated with lower student and teacher motivation; negative relationships between students and teachers; and a limited, narrow curriculum.

Conversely, the project- and inquiry-based learning approaches used by St. Vrain's Innovation Academy are proven strategies to promote learning outcomes for students that promote higher-order thinking such as critical and abstract thought, imagination, solution orientation and interacting and building on each other's ideas (i.e., application, synergy, creating) (Bloom, 1956). Lee (2015) also found that project-based learning improved students' self-reported motivation to produce better outcomes in future projects. Further, in a study of inductive pedagogy methods, such as project- and inquiry-based learning, versus deductive pedagogy, such as theory lectures that eventually lead to application seminars, Prince and Felder (2006) found that inductive methods were largely more effective for training future engineers. They postulated that the element of discovery, in which students are placed in the role of researcher rather than passive learner, assists in the way information is processed and stored.

Weigel and Bonica (2014) noted that the success of active-learning strategies (e.g., project-based learning) over passive traditional strategies is likely due to the connections students make between cognitive-affective-psychomotor domains of learning. In other words, the student becomes holistically involved in the learning process through a head-hands-heart approach; thinking, feeling and touching the work creates a learning experience that stimulates multiple areas of the brain and increases students' understanding of material in meaningful ways, thus promoting

more complicated, higher-order thinking (Weigel & Bonica, 2014). Other benefits of active learning, project-based learning in particular, include gains in metacognition and student perceived educational autonomy in both the design and construction of project deliverables (Stefanou, Stolk, Prince, Chen, & Lord, 2013).

Project design process: Quinones described in detail the design process students are encouraged to use in developing their projects at Innovation Academy. Although adults are present to assist students as needed, the projects are facilitated fully by students. The design process taught at Longmont's P-TECH has these five steps: 1) empathy, 2) define, 3) ideation, 4) prototyping and 5) testing. In the first step, empathy, students are taught to begin their designs by first thinking about what it is like to live in the condition they are trying to solve. So for the example of the city with dirty water, students might first imagine what it is like to not have clean water, to be ill from drinking dirty water and to worry about how to get access to better quality water.

The second step, define, refers to determining a clear definition of the problem to be solved. In the dirty water example, one might need to determine if the dirty water is because of problems with water pipes, filters, mudslides or other systems concerns.

The third step, ideation, is a flexible and creative process where all solutions are on the table. Designers (students) are encouraged to think broadly about any and all possible ways to solve the problem at hand.

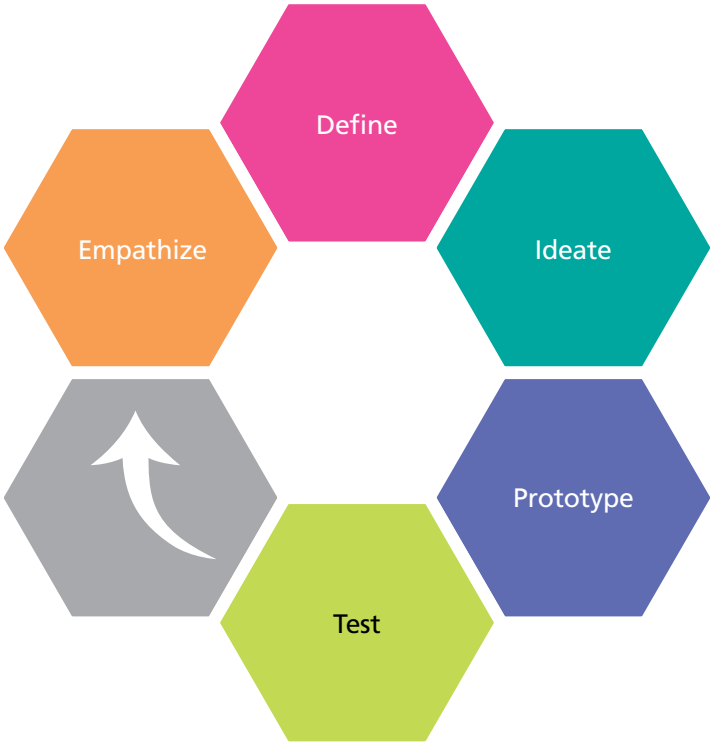


Figure X. The Design Model-5 Step Process

The fourth step, prototyping, is the development of a model of the proposed final design. This model may be introduced to a focus group of potential users or the intended audience for whom the solution was created. Prototyping allows potential users to provide valuable feedback on the project design and whether or not it is viewed as useful or if modifications might be helpful.

The fifth step, testing, refers to the final product and trials of the final product. These trials might include inviting users to test the final product and provide feedback on usability of the design (Tran, n.d.).

St. Vrain Schools didn't create this design process, but it is possible that St. Vrain is one of the first to implement this process systematically throughout a K–12 school district. Universities and corporations have used this design process to teach engineers to think creatively about design. For example, in a case study conducted by Jackson and Tarhini (2015), a design process and problem-solving process were taught to incoming first-year students at the U.S. Coast Guard Academy. Projects using the design process were implemented in upper-level courses (project-based learning), and student outcomes demonstrated better problem solving, improved capstone projects (e.g., designing a retaining wall) and better preparedness for the workplace.

Although the Innovation Center uses the aforementioned design process model to facilitate student learning in standardized areas (science, math, language arts), the district has also begun to weave this thinking into education as early as preschool. By organically adding the design process into students' and teachers' daily lives, there is a continual shift to critical thought, creativity and higher-order learning processes. Quinones shared an example. "Our four year olds had a design challenge. It's Halloween this time of year so we just made it fun and something the kids might already be thinking about. We asked them to create a costume with two specific elements. One, you have to be able to walk in the costume, and, two, we have to be able to see your face." The students had to research the costumes and go through each phase of the design process.

Approaches such as this one inspire students to use their own creativity, to have flexibility but to also understand that in the workplace there is a method to meeting industry demands and producing high-quality results.

One specific point of interest about Innovation Academy is the focus on persistence in overcoming the ambiguity in the innovation and design process, also known as cultivating grit, as this is critical to helping students achieve long-term success in their future careers. In a study of West Point cadets, Ivy League undergraduates and National Spelling Bee participants by Duckworth, Peterson, Mathews and Kelly (2007), grit was a more significant predictor of success outcomes than either intellect or conscientiousness. The researchers found that grit was more important than talent in determining long-term success.

Although Innovation Academy is a summer program for select students in the St. Vrain Valley School District, this type of programming may be provided to students literally anywhere. "All of our schools use the design thinking process. We have maker spaces in schools, digital commons libraries, kids competing in robotics, and now we have a P-Tech for computer science. Students earn dual credit with a local college. So our programs and opportunities are growing. As we expand this throughout the district, teachers change. They are less of a 'sage on the stage' and more facilitators of

true learning. So we are still standards-based, but we are teaching in ways that allow students to learn these other skill sets."

Growth might be measured in many ways and as Quinones notes, growth in her district has been measured by more than just gains in standardized testing. One unique measure of student interest in the changing curriculum is the buy-in to extracurricular activities promoting academic and career preparation. In six years, the school district went from having six schools with afterschool robotics teams to having 36 schools participating in robotics competitions with more than 100. Noteworthy, Camp (1990) found a causal relationship between extracurricular activity participation and academic achievement. Morris (2016) contended that the reasons academic outcomes may improve for extracurricular participants is that they tend to have increased social capital; greater school outcome expectations from peer, faculty and parents; and improvement in noncognitive skills (e.g., teamwork, cooperation, interpersonal communication). Therefore, an increase in extracurricular activities, such as those described by Quinones, might lead to better overall student learning outcomes.

The Innovation Center's approach naturally aligns to ASCA's Mindsets & Behaviors for Student Success: K–12 College- and Career- Readiness Standards for Every Student. Consider that the following four Mindsets & Behaviors might be used for developing summer camp curriculum related to the design model: M.6: Positive attitude toward work and learning; B-LS.2: Demonstrate creativity; B-SMS.3: Demonstrate ability to work independently; B-SS.4 Demonstrate empathy.

For an example, see the section summary and the Employability Case Study: The St. Vrain Valley School District Innovation Center, Apple Certified.

Communication Skills

Beyond the ability to think as future innovators, many schools are also focusing on ways to help students in becoming outstanding communicators. In the book "The Art of Scientific Storytelling," Luna (2013) underscored the importance for scientists to be able to articulate their findings, both orally and in writing, in ways that engage larger audiences. Through the use of cultural storytelling techniques, Luna described how to take scientific data and results and communicate them in a manner that engages audiences in a relatabel method.

This is an important skill for students as well. No matter what occupation students will enter, the ability to communicate is critical. The ASCA Mindsets & Behaviors have many standards dedicated to the development of interpersonal communication skills because of the importance of communication related to academic and career success.

Just how important are communication skills for employability? According to a survey of more than 300 employers conducted by Hart Research Associates (2013), 93 percent of employers agree. "A candidate's demonstrated capacity to think critically, communicate clearly and solve complex problems" is weighed more heavily in the hiring decision than degree or major. The employers responding also overwhelmingly (96 percent) wanted to hire people who demonstrate integrity and good judgment and who display comfort in working with individuals from diverse backgrounds

(96 percent). Thus, communication becomes critical in terms of the hiring process. Regardless of a student's portfolio of courses or experiences, the ability to convey respect, communicate appropriately and to express one's ideas is crucial for the hiring process. Therefore, communication is an important part of the education process. This type of communication occurs both as an integrated part of the classroom experience (see the case study Aquaponics at Brookstown, p. XXX) and organically when the opportunity arises.

Introducing students daily to the concept that school is meaningful to the future workplace helps students conceptualize themselves as learners situated in the context of their lifelong career rather than just the school day. Grand Junction Career Center principal Wyatt hung full-length mirrors throughout the building. Above the mirrors are signs reading, "Would you hire this person?" It's a daily reminder to students that they can choose to come to school clean, prepared, organized, neat and exuding confidence. Wyatt and the Career Center faculy believe it's important to help students think about how they communicate verbally and nonverbally to future employers that they are ready and capable of doing great work.

Financial Literacy

More than ever, families need to understand how to save for college and what to expect in return for the investment in postsecondary education. Since 2009, across the United States, almost every state disinvested in higher education, anywhere from approximately 15 percent-70 percent funding, leaving universities with funding gaps and low autonomies for increasing revenue other than charging higher tuition and student fees (Blumenstyk, 2015; Mortenson, 2012). Therefore, tuition has increased beyond inflation, and student loan borrowing has reflected this trend with increases of more than 50 percent (Baylor, 2014).

Yet financial literacy is about much more than postsecondary educational costs. Financial literacy is about learning to live debt free and to be a responsible citizen in a consumer economy. Moreover, Arthur (2012), using a critical analysis lens, contended that financial literacy is about more than fiscal equality and civic engagement. In his viewpoint, true financial literacy is understanding the economic structures underlying democracy and how social discourse and movement affect these structures. Thus, socio-political economics are at the heart of financial literacy and understanding one's own financial well-being as well as one's civic duty. He asserted that students should learn how to analyze the social, political and economic conditions of their own work and how power is created, re-created and how some individuals are awarded power or not within systems. Arthur further acknowledged that this understanding has to begin with a more rote understanding of the mathematical concepts of daily living affecting individuals such as stocks, bonds, budgets, interest rates, etc.

Financial Literacy in Elementary School

Financial literacy can and should begin early. There are many programs schools and teachers can use. Certainly, classroom economies are one way to begin teaching

financial literacy, and parent education on household budgets, allotting children weekly allowances and teaching at-home savings are other ideas. There are also a few programs focused on teaching the basic skills of entrepreneurship, youth money management and citizenship (e.g., Boy Scouts, Girl Scouts, 4-H). A few other programs for elementary students are highlighted in this section as specific examples.

Young Ameritowne: Young Ameritowne is a program through Colorado's Young Americans Bank. The concept of the Young Ameritowne program is that fourth- and fifth-grade teachers will use a planned curriculum, provided by the program, promoting learning macro- and micro-economic concepts such as work ethic, supply and demand, civic and social life and the connection of work to personal finance and giving. At the end of the program, students participate in the culminating project where they manage a simulated business and adjust prices based on supply and demand, use profits to grow their business, support charities, and invest for the future. Skills learned include personal financial decisions such as investing, saving and budgeting and business planning such as how to apply for a job, interviewing skills, marketing and communication and much more (*https://yacenter.org/young-ameritowne/curriculum/*).

Lemonade Day: Lemonade Day is a program designed to help students develop the following business skills, responsibility, financial literacy, goal setting and teamwork. Lemonade Day has a curriculum, (and resources on the website include results of previous Lemonade Day participants' surveys, glossary of business terms for youth and teens, links to other websites, teacher questions and answer links, downloadable certificates and more. Teachers may choose to participate by registering their class, and they will be given either printed entrepreneur workbooks or a digital curriculum called Lemonopolis. The program can be taught in four-six lessons. Students become the entrepreneurs of their own lemonade stand. The program is meant to help students learn four steps of success: (1) set a goal, (2) make a plan, (3) work the plan, and (4) achieve your dreams (*https://lemonadeday.org/*).

Microsociety: Microsociety requires specific professional development for faculty and staff. Microsociety is a simulated society program where students actually run their own simulated businesses and have careers for which they earn a "paycheck". This money is credited for them at their school's bank. The bank, in turn, keeps their money and they can spend it at shops run by other students (entrepreneurs) during microsociety hours. The entire society is student run including the government, courts and more. All purchases made are donated items so students really do spend their "earned" salaries.

Financial Literacy in Middle School

Financial literacy in middle school should begin to take on more sophisticated and nuanced understandings of the roles of investment, debt and economies of scale. Students in middle school have greater understanding of concepts such as supply and demand and the impact on pricing and market values. There are many free curricula to explore, but it should also be kept in mind that including parents and helping students explore their values around long-term career and college goals will help them make sound financial decisions.

The National Financial Educators Council (NFEC) provides free middle school curriculum for financial literacy. Four lessons are available simply by registering. The presentations include an instructor's guide, student guides, PowerPoint presentations and testing materials (*www.financialeducatorscouncil.org*). Middle school students can learn about personal budgeting and financial goal setting. They also can understand interest accrual.

High School Financial Literacy

Assessing what high school students know about finances is a great place to start when determining what type of curriculum to provide. NFEC provides free online assessments and immediate results for a national financial capability test, advanced financial education test, financial foundations decisions test and a student loan test (*www.financialeducatorscouncil.org/financial-literacy-test/*). Results for students nationally and by state are available on the site, allowing school counselors and educators to compare how students in their schools and districts are doing in relation to students nationwide.

Preparing for contractual work: For students who will be entering fields such as computer sciences, there may need to be a focus on how to manage finances if one is hired to do contractual work. Some fields tend to be trending toward more short-term contractual work rather than long-term fixed salaries. Because of this, students entering these fields need to understand how to save money to pay taxes, how to plan for retirement and how to save for times when they don't have employment. They also need to understand how this may affect their ability to pay for health care.

Employability and Financial Literacy Skills Recommendations

This section covers recommendations for K–12 integration of employability and financial literacy skills. To prepare students for apprenticeship programs and the world of work, K–12 schools should look for opportunities to grow students' Mindsets & Behaviors for career and postsecondary life beginning the day students enter school. Case studies are provided to stimulate further reflection and discussion of these promising practices.

Employability and Financial Literacy Skills Recommendation One: 1

Integrate employability skills training throughout K–12 curriculum.

Students should be exposed to employability training throughout their K–12 experience and not expected to begin producing employable behaviors only in the last two years of high school. Like all developmental tasks, students need information about what is expected in the world of work and opportunities to exercise these

skills and receive quality feedback. By integrating employability in classroom curricula where feasible, students learn the skills necessary to work successfully. Review and discuss the following case study.

CASE STUDY 8.1

Ecosystems and Employability

Mr. Renfro, a high school counselor, worked with the lead high school biology teacher, Mrs. Carson, at Westmoreland High School to create a science unit based on Next Generation Science Standards (NGSS) and integrated employability skills. Mrs. Carson based the unit on NGSS HS-LS2-5 Ecosystems: Interactions, Energy and Dynamics: Develop a model to illustrate the role of photosynthesis and cellular respiration in the cycling of carbon among the biosphere, atmosphere, hydrosphere and geosphere. Before the unit began, they sent home a letter explaining the rationale for the assignment integrating employability skills and scoring rubric (see Appendix C).

When the unit began, students were given reading assignments, an explanation of photosynthesis and cellular respiration and information about the exchange of gases during photosynthesis and cellular respiration (oxygen/carbon). Mr. Renfro also gave a brief presentation to students on the importance of developing desirable workplace Mindsets & Behaviors (ASCA Mindsets and Behaviors, 2014) that are displayed in academic work through skills such as collaboration (B-SS.6), teamwork (B-SS.7), creativity (B-LS.2) and producing a quality outcome (M.5). Students were given one week in class to design their model and to prepare a five-minute model presentation. During the week, as students worked, the biology teachers scored students on collaboration, teamwork, neatness and organization of the overall project and final presentation skills, all of which were scored on a rubric along with the quality of the final model product (see Appendix D).

In your group discuss:

1. Are employability skills introduced and measured in your district's current curriculum?
2. How might students and faculty act differently if employability skills were part of the curriculum?
3. What are the pros and cons of giving a grade related to employability skills in a content course unit?
4. How would you explain the rationale for employability skills integration to parents? Does the letter in Appendix C do a sufficient job of explaining the rationale? Would you add something more to the letter?
5. Consider the rubric. Is there anything you would change about the scaling or the design of the rubric? Do you think the items are weighted fairly?

Employability Skills Recommendation Two: 2

Create opportunities for students to become excellent communicators.

Students need opportunities to develop their coordination, collaboration, teamwork and other communication skills. By providing students with opportunities to discuss and present ideas, receive feedback and work in close contact with others, school personnel can help students develop critical long-term communication strategies necessary for successful workplace relationships. Read and discuss the following case study.

CASE STUDY 8.2

Aquaponics at Brookstown

At Brookstown Middle School in Baton Rouge, La., students are learning about aquaponics, the merging of aquaculture and hydroponics, through cultivation of catfish and growing vegetables in joined tanks. Students learn about the science behind the aquaponics, test theories, conduct studies and track specimen growth and progress. They also have to problem solve any changes to water, animal illness, algae growth or plant decay. Keeping the ecosystem healthy, viable and sustained is a daily challenge. Students progressing through the program and earning A's or B's in the class receive their own lab coats and gain new lab responsibilities. As visitors come to the aquaponics lab, including school board members, parents and community members, the students take turns presenting their data and showcasing their results. They also answer questions visitors may have. If students do not complete a work assignment or skip a critical step in care for the plants or animals, they have to re-earn lab privileges.

Students continually in the program from sixth-eighth grade are chosen for leadership positions. These leaders help facilitate lab responsibilities and stay after school or come in on weekends and during holidays to keep the lab running, the animals fed and the tanks cleaned. Students in the lab long term are also given responsibility for cleaning the tank in the principal's office.

Students were allowed to use their lettuce for consumption in the school cafeteria (approved by the district nutritionist) and were able to grow enough lettuce to create their own brand and sell product at the local farmer's market. The labels for the brand were created by students at the school, voted on by students and pitched in a marketing plan by students to the district school board. Students in aquaponics are learning about more than science; they are learning about scientific storytelling, aquabusiness, marketing and horticulture sales.

In your group discuss:

1. What employability skills do you see in this example from Brookstown?
2. What potential issues or problems do you see, if any?
3. What ASCA Mindsets & Behaviors are being developed in this program? What other opportunities might be available that haven't yet been cultivated?

Employability Skills Recommendation Three: 3

Ensure students have consistent access to financial education applicable to postsecondary preparation and life skills.

Beyond learning about personal financial education, students need opportunities to see how entrepreneurship and business models work in the real world. At Western Colorado Community College, Bailey-Fougnier has ensured that students have opportunities to explore finance within the career and technical fields. Through the use of "pop up" dinners, students in agriculture grow, harvest and showcase their products. Students in culinary arts prepare, season and cook the meal. Students in oenology and viticulture grow and harvest wine served with the meal. A four-course meal is served. The meal costs $50-$75. Students not only have to work collaboratively to plan and prepare the meal but also to discuss price points, competitive advantage and profit. Review and discuss the following case study.

CASE STUDY 8.3

The St. Vrain Valley School District Innovation Center, Apple Certified

Students at the Innovation Center have access to a new curriculum that leads to certification as an Apple technician. The school created a classroom that simulated the back of an Apple store, where product diagnostics may be performed and repair work conducted. Students take a course with an Apple-certified trainer hired by the school, and students then take the actual Apple exam. Once complete, they are an Apple-certified technician. This certification could allow them to be hired making $45,000-$50,000 per year. Students as young as 14 are taking these exams. The school hires these students, and the students provide free computer, iPad and phone repairs for students and staff. Another service students were paid for was providing a workshop for police officers and firefighters who were given new iPhones by the county. The students taught the officers and firefighters how to download apps and other functions of their new phones.

The Innovation Center is currently the only school in the country with this certification. The district assistant superintendent shared that this was not a difficult contract to obtain with Apple (consider that they may be glad to get future technicians) and that she is currently hoping the school can become an

Apple-certified provider. By doing so, they could charge the public for repairs. This will also allow for a future revenue stream to continue funding students and programs.

Discuss in your group:

1. Which employability skills might students in the Apple technician program gain?
2. How might you measure growth in students' employability skills through a technical certification program such as this one?
3. How might students participating in this program behave differently, in terms of employment skills, in their first semester taking the class for certification and a year later working as certified technicians?
4. What concerns, if any, would you have with students servicing technology equipment? How might you mitigate these concerns?
5. If you had a revenue-generating program at your school, what types of issues might arise, and what types of safeguards might you need?

Section Summary

In a randomized study of sixth-grade students in a school district, Harris et al. (2015) found that students using project-based learning had significantly higher outcomes than students in a control group using a district-approved textbook as the primary instruction method. Harris et al. noted that the curriculum and pedagogy (project-based learning) seemed to make a true difference in help students in making meaning of what they were learning. District support for curricula, professional development and the implementation of pedagogical strategies were noted as crucial elements for successfully understanding student outcomes. The same may be said of St. Vrain Valley School District and the innovative practices implemented there. Because the school district has aligned standards, practice, pedagogy, professional development, student classroom and extracurricular experiences, parent engagement and community involvement, success has been imminent.

Employability Section Summary Activities

Activity One: How well does your school or district currently integrate employability skills training and financial literacy throughout K–12? What are some ways this might be improved?

Activity Two: Read the scenario and answer the questions with your group. Scenario: Justine has been hired in an apprenticeship at a local medical supply firm in the logistics department. Justine has been complaining that her boss is really rude and won't let her check her phone except during breaks. Justine

says the work is okay but not really all that fun. The apprenticeship program coordinator received a phone call today from Justine's site supervisor. The supervisor reported that Justine's mother brought her to work this morning to inquire about why she can't keep her cell phone with her so that she may text or play games when she is bored. Her mother told the supervisor that this didn't seem like a fair policy. The supervisor conveyed that there is no reason for Justine to be bored; there is plenty of work to do when shipments aren't going out because she should be reaching out to other customers, filling back orders and getting customer satisfaction surveys sent out.

In your group discuss:

1. What employability skills does Justine need to work on improving?
2. How did Justine's mother help or hinder her daughter's professional growth?
3. How would you suggest the school, employer or apprenticeship program liaison give Justine and her mother feedback about this incident?
4. How might you prepare parents in the future to avoid these types of issues?

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APPENDIX A.
SAMPLE AUTHORIZATION FOR EXCHANGE OF INFORMATION BETWEEN SCHOOL AND WORKSITE

I authorize the following organizations [name of school] and [name of employer] to release/exchange information and share communication in verbal, written and/or electronic form regarding: (Student apprentice's Name) (Date of Birth). This information is to be used in the planning/ evaluation of an appropriate educational program and apprenticeship experience for the student. The confidentiality of the information received will be protected by state and federal guidelines regarding the collection, maintenance and dissemination of student records (Family Education Rights and Privacy Act of 1974). Information for release includes the following: (Please check)

☐ Grades/report card
☐ Standardized test
☐ Special education data (ER, IEP)
☐ Other, please specify: _____
☐ Psychological/psychoeducational
☐ Attendance records
☐ Transcripts/credit data

This document is only valid for one year from the date signed

_____
Parent's signature/Date

_____
Student apprentice's signature/ Date

_____
HR manager's Signature/Date

_____
Worksite supervisor's signature/Date

_____
School counselor's signature/Date

_____
Third-party provider's signature/Date

APPENDIX B.
SAMPLE LETTER INVITING HR MANAGER AND WORKPLACE SUPERVISOR TO A 504 MEETING

HR Manager
Address of Employer

Re: [Student's name]

Dear [HR Manager's Name]:

We are the parents of [Student's name] who attends [School's name] and is an apprentice at [name of employer]. Our [daughter/son] has been diagnosed with [diagnosis], which directly affects [his/her] educational performance and will possibly affect [his/her] workplace needs. I am requesting a meeting to share with you our current 504 plan in place at school and to discuss any accommodations that might be appropriate at the worksite. Thank you in advance for your collaborative efforts to provide our [daughter/son] with an appropriate and quality apprenticeship experience. We look forward to hearing from you and working with you and our school counselor to ensure a successful apprenticeship experience for our [daughter/son].

Sincerely,

[Parents' names]

APPENDIX C.
SCIENCE AND EMPLOYABILITY UNIT LETTER TO STUDENTS AND PARENTS

Dear Students and Parents,

For this unit, students will be graded on both their science and employability skills. In this unit, we are studying the role of photosynthesis and cellular respiration in the cycling of carbon among the biosphere, atmosphere, hydrosphere and geosphere (Next Generation Science Standards HS-LS2-5). Students will be given instruction through reading assignments, class lectures and demonstrations on photosynthesis and cellular respiration and information about the exchange of gases during photosynthesis and cellular respiration (oxygen/carbon). Our school counselor, Mr. Renfro, will be giving a short presentation on Monday about workplace employability skills essential to future success. In the workplace, it is important that employees can demonstrate collaboration, teamwork, group creativity and producing a quality outcome. Therefore, at the conclusion of this unit, students will be asked to produce a model exhibiting both their science knowledge and these future workplace skills. This model will be presented, by the entire group, in a five- to seven-minute presentation. Both parts of this assignment, the model presentation and the employability skills, will be graded for a combined project worth 30 points.

Thank you,

Mrs. Carson and Mr. Renfro

APPENDIX D. SCIENCE AND EMPLOYABILITY UNIT RUBRIC

Item Graded	Exceeds Expectations	Meets Expectations	Needs Improvement
Model illustrates the role of photosynthesis	The role of photosynthesis is accurately depicted in the model. The model clearly illustrates all of the photosynthesis process, and labels are organized and placed in a clear manner. The model does an excellent job of explaining the steps of photosynthesis related to carbon dioxide consumption and is additive to the viewers' understanding of photosynthesis. **3 points**	The role of photosynthesis is accurately depicted in the model. The model clearly illustrates all of the photosynthesis process, and labels are organized and placed in a clear manner. The model format is neatly organized to adequately demonstrate the stages of photosynthesis. The model complements viewers' understanding of photosynthesis. **2 points**	The role of photosynthesis is not accurately depicted in the model, or parts of the process are missing. Labels are not organized or placed in a clear manner. The stages do not adequately demonstrate the relationship of photosynthesis to carbon dioxide consumption. The model is not additive to viewers' understanding of photosynthesis. **1 point**
Model illustrates cellular respiration in carbon cycling in the biosphere	The model accurately depicts all stages of cellular respiration including carbon cycling and the influence of carbon cycling in the biosphere. The model is well-organized, with detailed labels, and is additive to viewers' understanding of cellular respiration. **3 points**	The model accurately depicts all stages of cellular respiration including carbon cycling and the influence of carbon cycling in the biosphere. The model is well-organized, with detailed labels, and complements viewers' understanding of cellular respiration. **2 points**	The model does not accurately depict all stages of cellular respiration including carbon cycling and the influence of carbon cycling in the biosphere. The model is not well-organized, does not contain detailed labels, and is not additive to viewers' understanding of cellular respiration. **1 point**

Item Graded	Exceeds Expectations	Meets Expectations	Needs Improvement
Model illustrates cellular respiration in carbon cycling in the atmosphere	The model accurately depicts all stages of cellular respiration including carbon cycling and the influence of carbon cycling in the atmosphere. The model is well-organized, with detailed labels, and is additive to viewers' understanding of cellular respiration. **3 points**	The model accurately depicts all stages of cellular respiration including carbon cycling and the influence of carbon cycling in the atmosphere. The model is well-organized, with detailed labels, and complements viewers' understanding of cellular respiration. **2 points**	The model does not accurately depict all stages of cellular respiration including carbon cycling and the influence of carbon cycling in the atmosphere. The model is not well-organized, does not contain detailed labels, and is not additive to viewers' understanding of cellular respiration. **1 point**
Model illustrates cellular respiration in carbon cycling in the hydrosphere	The model accurately depicts all stages of cellular respiration including carbon cycling and the influence of carbon cycling in the hydrosphere. The model is well-organized, with detailed labels, and is additive to viewers' understanding of cellular respiration. **3 points**	The model accurately depicts all stages of cellular respiration including carbon cycling and the influence of carbon cycling in the hydrosphere. The model is well-organized, with detailed labels, and complements viewers' understanding of cellular respiration. **2 points**	The model does not accurately depict all stages of cellular respiration including carbon cycling and the influence of carbon cycling in the atmosphere. The model is not well-organized, does not contain detailed labels, and is not additive to viewers' understanding of cellular respiration. **1 point**

Item Graded	Exceeds Expectations	Meets Expectations	Needs Improvement
Model illustrates cellular respiration in carbon cycling in the geosphere	The model accurately depicts all stages of cellular respiration including carbon cycling and the influence of carbon cycling in the geosphere. The model is well-organized, with detailed labels, and is additive to viewers' understanding of cellular respiration. **3 points**	The model accurately depicts all stages of cellular respiration including carbon cycling and the influence of carbon cycling in the geosphere. The model is well-organized, with detailed labels, and complements viewers' understanding of cellular respiration. **2 points**	The model does not accurately depict all stages of cellular respiration including carbon cycling and the influence of carbon cycling in the geosphere. The model is not well-organized, does not contain detailed labels, and is not additive to viewers' understanding of cellular respiration. **1 point**
Collaboration	Group members listen to each and consider all viewpoints before determining action strategies. All members give input on the final project design and on the development of roles and responsibilities each member will assume for completing tasks. Throughout the project, each group member gives meaningful feedback on the project design and the group's progress. All members of the group document the design process. **3 points**	Group members listen to each and consider all viewpoints before determining action strategies. All members give input on the final project design and on the development of roles and responsibilities each member will assume for completing tasks. Throughout the project, some group member gives meaningful feedback on the project design and the group's progress. Some members of the group document the design process. **2 points**	Group members listen to each and consider all viewpoints before determining action strategies. All members give input on the final project design and on the development of roles and responsibilities each member will assume for completing tasks. Throughout the project, some group member gives meaningful feedback on the project design and the group's progress. Some members of the group document the design process. **1 point**

Item Graded	Exceeds Expectations	Meets Expectations	Needs Improvement
Teamwork	Each group member is assigned roles and responsibilities. Every person has tasks to complete that will contribute to the final project. Tasks are fairly evenly distributed; one person is not overly contributing. **3 points**	Although each group member is assigned a role or task, one or two members are doing the preponderance of the workload. Some members of the group are not completing an equitable share of the workload or contributing to the project outcomes in a quality manner. **2 points**	There is a lack of organization, clarity and efficiency when assigning roles and responsibilities to group members. The tasks are not assigned equitably and some members do not complete their assigned tasks or do so without quality. **1 point**
Group Creativity	The group allows for a creative process to unfold. Rather than using existing models or images, the group members develop their own depiction of the photosynthesis and carbon cycle. This creativity allows the group members to broaden their use of materials, media, colors and illustrations in innovative or imaginative ways to meet the criteria for this project. **3 points**	The group completes the project with all elements and creates a product with some fairly routine or standard elements based on existing images or depictions. The group uses a broad range of materials but in fairly expected or predictable ways. **2 points**	The group does not create a project that reflects imaginative or innovative components. The group project seems rushed or rudimentary without a lot of creativity, forethought or attempts to develop out-of-the-box thinking about the model proposed. **1 point**

Item Graded	Exceeds Expectations	Meets Expectations	Needs Improvement
Producing a Quality Outcome	The final project model is neat, well-organized, easy to follow and understand. Labels add detail and assist the audience in comprehending the model. The group uses color, scale and shapes in a way that makes the model appealing and easy to recognize. The project fits the requirements of the assignment. **3 points**	The final project model is neat, well-organized, easy to follow and understand. Labels provide some level of detail and assist the audience in comprehending the model. The group uses color, scale and shapes but could benefit from better organization of the elements in the model. **2 points**	The final project model is poorly designed and poorly organized. The project is difficult to follow and understand. Labels need greater detail. The group could benefit from better organization of the elements in the model. **1 point**
Group Presentation	Each group member participates in the presentation. The presentation is clear, easy to follow, and the model is thoroughly explained. The model is exemplary, and the presentation is well-developed. All group members speak clearly, and each person in the group understands and explains the material well. **3 points**	Each group member participates in the presentation. The presentation is clear, easy to follow, and the model is thoroughly explained. The model is sufficient and the presentation meets all expectations. All group members speak clearly. **2 points**	Each group member participates in the presentation. The presentation is somewhat difficult to follow or unclear. The model is not thoroughly explained. The model is insufficient and the presentation needs improvement either in visuals or in group speaking. **1 point**
Total Points Awarded and Instructor Comments	Total Points: /30		

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