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Evaluation of the Wisconsin Career Pathways Web Site: A Comprehensive Plan for Ongoing Development

Margaret A. Rubin
Nova Southeastern University, rubin514@hotmail.com

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by
Margaret A. Rubin

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Approval Page

This applied dissertation was submitted by Margaret A. Rubin under the direction of the persons listed below. It was submitted to the Abraham S. Fischler School of Education and approved in partial fulfillment of the requirements for the degree of Doctor of Education at Nova Southeastern University.

Karen B. Kamin, EdD Committee Chair	Date
Judith S. Stein, EdD Committee Member	Date
Program Professor Review Applied Research Center	Date
Mary Ann Lowe, SLPD Associate Dean	Date

Statement of Original Work

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I have read the Code of Student Conduct and Academic Responsibility as described in the Student Handbook of Nova Southeastern University. This applied dissertation represents my original work, except where I have acknowledged the ideas, words, or material of other authors.

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January 30, 2014
Date

Acknowledgments

My deepest gratitude goes to my parents, now deceased, who instilled in me a love for school and studying. I also inherited their tenacity and persistence; some might refer to it as stubbornness. Whatever it is to be called, it kept me going. I thank my husband, Ray, for encouraging me to apply for a position in education many years ago. That changed my life, filling me with a passion for career and technical education and the impetus to keep moving forward as I pursued my lifelong educational journey. I would also like to thank my wonderful children, Daniel and Julia, for their support. They are unique in their own interests, abilities, and skills, and I am very proud of the adults they have become and career pathways they have pursued.

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Abstract

An Evaluation of the Wisconsin Career Pathways Web Site: A Comprehensive Plan for Ongoing Development. Margaret A. Rubin, 2014: Applied Dissertation, Nova Southeastern University, Abraham S. Fischler School of Education. ERIC Descriptors: Career and Technical Education, Career Exploration, Career Guidance, Evaluation, Web Sites

This research study was designed to provide for the ongoing development and improvement of the Wisconsin Career Pathways Web site. The Web site aids secondary educators in the development of secondary-to-postsecondary programs of study, assists middle and high school students in career exploration and academic planning, and helps middle and high school counselors and advisers guide students for success in college and careers by providing them with access to school-wide and individual student Web-site activity. The Web site was developed in phases following a year of planning during the 2008-09 fiscal year.

The concept of programs of study is a relatively new and emerging school-reform initiative, and the Wisconsin Career Pathways Web site project was initiated as a Web-based dynamic data-driven resource to help Wisconsin stakeholders. The Web site has been in a constant state of development, expansion, upgrade, and improvement since the launch of its 1st phase in 2010. A developmental evaluation approach was utilized to address the evolving nature of the Web site.

The writer developed online surveys to gather input from 3 stakeholder groups: technical college career-prep administrators, middle and high school counselors and advisers, and secondary program-of-study builders. Following quantitative and qualitative data analysis of the surveys, the writer developed a preliminary plan for the Web site's ongoing development and followed up with a focus-group session of interested survey participants representing each of the stakeholder groups. Based on the analysis of qualitative data collected at the focus-group session, the researcher finalized the preliminary plan. The final plan includes a discussion of the data collected and analyzed as well as recommendations for ongoing development and improvement of the Web site.

The sequential mixed-methods approach was instrumental in exposing the satisfactory components of the Web site. In general, the data reflected satisfaction with the Web site, namely its user-friendliness, which was one of the project team's earliest goals for the Web site. The Web site is seen as an essential resource for Wisconsin stakeholders. To keep moving forward with Wisconsin's program-of-study and college and career planning initiatives, addressing the unmet needs of stakeholders will not only increase Web-site usage but will lead to a clearer understanding of those initiatives. Based on the results of this study, the researcher developed a comprehensive plan. The plan suggests that improving the online program-of-study builder tool, providing more training, building reporting capacity, developing a marketing plan, and increasing Web-site interactivity based on push-notification technology are necessary actions for the ongoing development and improvement of the Web site. The findings of the study will be submitted to the Wisconsin Technical College System.

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Chapter 1: Introduction

Statement of the Problem

The focus of this evaluation was to develop a comprehensive plan for ongoing development and improvement of the Wisconsin Career Pathways (WICareerPathways) Web site based on data collected from key stakeholders. A detailed statement of the problem, a full description of the Wisconsin Career Pathways Web site, the purpose of the evaluation, and the definition of terms used in this study are discussed in Chapter 1.

The topic. At a time when the United States is experiencing high unemployment rates, it is difficult to think about a future labor-skills shortage. As unreal as it may seem, by 2020, the demand for workers will outpace supply, creating a labor shortage (U.S. Department of Labor, 2012). This impending shortage of skilled workers is sure to impact U.S. economic growth (Partnership for 21st Century Skills [P21], 2010). Several factors contribute to the labor-skills shortage. According to the National Career Technical Education Foundation (2007a),

> Technological advances and global competition have transformed the nature of work. Tomorrow's jobs will require more knowledge, better skills, and more flexible workers than ever before. Tomorrow's workers must be prepared to change jobs and careers several times, continually updating their knowledge and skills. (Career Clusters Prepare All Students for College and Careers section, para. 1)

Our economy is shifting from producing goods to providing services (U.S. Department of Labor, 2012). These economic changes will require that workers not only have more education but also have different skills than workers of the 20th century. Labor-market projections through 2020 reflect that nearly two thirds of new living-wage jobs will require at least some postsecondary education. High school graduates and dropouts will be limited to low-wage and low-demand occupations (Carnevale, Smith, &

Strohl, 2010).

The research problem. At a time when education and training are critically important to economic success, schools have fallen short in providing many students with the knowledge and skills needed in order to achieve success in the new economy. Approximately one fourth of U.S. students drop out of high school (Achieve, 2011). Although Wisconsin's 2010 high school completion rates are higher than average at 90%, there is still room for improvement (Wisconsin Department of Public Instruction, n.d.b). According to a survey reported by Casner-Lotto, Barrington, and P21 (2006), there are many reasons why students drop out of high school, but one of the major reasons cited is that young people are bored and feel disengaged from high school.

For those students who do graduate and choose to continue with postsecondary education, many require remediation before entering college programs (Achieve, 2004, 2008). Less than 30% of community college students earn an associate degree, and less than 56% of 4-year college students earn a bachelor's degree (Symonds, Schwarz, & Fergusen, 2011). Results of a survey of over 400 U.S. employers, according to Casner-Lotto et al. (2006), revealed that "many of the new entrants lack skills essential to job success" (p. 10).

Background and justification. In a report prepared by Achieve (2008) presenting English and math common core standards, the goal was clearly articulated: "All students should graduate from high school prepared for the demands of postsecondary education, meaningful careers, and effective citizenship" (p. 1). To reach or stay in America's middle class, students must make the connection between education, training, and careers (Carnevale et al., 2010). Symonds et al. (2011) believed that "a more holistic approach to education—one that aims to equip young adults with a broader range

of skills—is more likely to produce youth who will succeed in the 21st century" (p. 4).

Educators need to improve instruction to make school more relevant and engaging so that students see the connection between secondary and postsecondary education and work (Bottoms & Young, 2008; Bridgeland, Dilulio, & Morison, 2006). According to Burke (2005), "the diversity of American higher education is a wonder of the world, with its marvelous mix of community and technical college, liberal arts and comprehensive campuses, and doctoral and research universities" (p. 21). Unfortunately, too many Americans still consider a 4-year degree the only route to success with a single purpose of high school to prepare students for college (Bottoms & Young, 2008; Symonds et al., 2011).

It is generally agreed that students need a rigorous academic foundation. According to the Association for Career and Technical Education (ACTE, 2010), "career-ready core academics and college-ready core academics are essentially the same" (Academic Skills section, para. 1). However, in addition to core academic skills, some level of job-specific knowledge and skills, such as those taught in career and technical education (formerly known as vocational education), and broader employability skills, such as critical thinking, adaptability, problem solving, teamwork, creativity, and responsibility, are also essential. Regardless of a student's path, it takes the application of academic, technical, and employability skills to function in daily life and the workplace (ACTE, 2010; Casner-Lotto et al., 2006). Several national initiatives to prepare high school students for careers are underway.

The American Diploma Project Network established English and mathematic benchmarks defining the essential knowledge and skills students must have to be ready for college and careers (Achieve, 2008). In 2008, the National Association of State

Directors of Career Technical Education Consortium (NASDCTEC, 2013d) developed knowledge and skills statements reflecting what is expected of students at the postsecondary level and in business and industry. Recently, NASDCTEC (2013d) coordinated the Common Career Technical Core initiative to develop a set of rigorous high-quality standards for career and technical education that states can adopt voluntarily. The Carl D. Perkins Career and Technical Education Improvement Act of 2006 (Perkins IV, 2006) requires states to develop programs of study outlining a logical sequence of secondary and postsecondary courses containing rigorous academic and career and technical education content leading to an industry certification or postsecondary credential. Three national organizations, ACTE, NASDCTEC, and P21, have come together to advocate for integration of career and technical education and 21st-century skills into college readiness (P21, 2010).

The National Career Technical Education Foundation (2007a) organized academic, technical, and employability skills by occupational groupings. These groupings are now known as the National Career Clusters™ Framework, which consists of 16 career clusters representing 79 career pathways (NASDCTEC, 2013a). This framework supports high school educators in the development of secondary-to-postsecondary programs of study as required by Perkins IV (2006) legislation. School counselors can use the career clusters to help students explore a wide range of career choices and develop goal-oriented personal plans of study.

Today, many states and kindergarten through Grade 12 (K-12) schools have adopted school counseling programs based on the American School Counseling Association (ASCA) national school counseling model (Bowers & Hatch, 2005). This comprehensive model, according to Bowers and Hatch (2005), “supports the school’s

academic mission by promoting and enhancing the learning process for all students through an integration of academic, career and personal/social development" (p. 15). Delivery of the systematic counseling program includes guidance curriculum and individual student planning. Bowers and Hatch said school counselors "help all students plan, monitor and manage their own learning as well as meet competencies in the area of academic, career and personal/social development" (p. 41).

Wisconsin has two notable state-wide initiatives to support preparing students for further education and the workforce. The Wisconsin comprehensive school counseling model promotes career development. Secondary-to-postsecondary program-of-study development as outlined in by Perkins IV (2006) legislation integrates academic and career-focused curriculum.

The Wisconsin Department of Public Instruction (WDPI) developed a comprehensive school counseling model based on the ASCA national model (Bowers & Hatch, 2005), which has been implemented by many Wisconsin K-12 school districts. According to Spear, Dahir, and White (2007), Wisconsin's model "provides a program that encourages and promotes academic, career, and personal social development for students in preparation for the challenges of the twenty-first century" (p. 7). The model emphasizes the development of an individual learning plan, also known as an academic career plan, for each student and calls for periodic student and parent conferences to review the plan.

In Wisconsin, Perkins IV (2006) is administered through the Wisconsin Technical College System (WTCS). As required under Perkins IV, the WTCS board submitted a 5-year state plan beginning with the 2008-09 program year. One of the major priorities outlined in the plan was to promote and support high school-to-college transitions for

career and technical education students. The WTCS board delegated primary responsibility at the secondary level to the state's superintendent of schools and WDPI (WTCS, 2008).

Wisconsin opted to include Title II (Tech-Prep Program) in its 5-year state plan (WTCS, 2008). Perkins IV (2006) describes a tech-prep program as a program of study that combines secondary and postsecondary education, integrates academic and career and technical education instruction, provides technical preparation in a career field, builds student competence in technical skills and core academics, and leads to an industry certification or a degree. A tech-prep program must link secondary and 2-year postsecondary institutions as well as 4-year institutions of higher education if possible. The program of study should offer sequences of courses in career fields and include articulation agreements that allow for concurrent enrollments of students in secondary and postsecondary coursework. Whenever possible, the program should include work-based learning and provide comprehensive career guidance and academic counseling. Title II also includes professional development for teachers, faculty, counselors, and administrators that supports the implementation of the tech-prep program (Perkins IV, 2006).

Title II (Perkins IV, 2006) was eliminated from the federal fiscal year 2011 budget, but with continued support at the local and state level, Wisconsin technical college tech-prep coordinators, now referred to as career-prep coordinators, remain active in leading activities to prepare high school students for college and careers. A significant legislated purpose of Wisconsin technical colleges is to partner with secondary schools to facilitate the transition of high school students into postsecondary education through curriculum articulation and collaboration (Chapter 38: Technical College System, 2009-

10). According to Chapter 118: General School Operations (2009-10), at the secondary level, "*Vocational skills.* Each school board shall provide an instructional program designed to give pupils: (1) an understanding of the range and nature of available occupations and the required skills and abilities" (Vocational Skills section, para. 1).

WDPI and WTCS (2011) created a guide to support fulfilling the goals of Perkins IV (2006) legislation. As stated in the guide's forward written by Evers, state superintendent of WDPI, "Implementation of programs of study in schools across Wisconsin provides a framework to deliver rigorous and relevant curriculum that prepare students for success in the 21st century" (p. iii). Clancy, past president of the WTCS, wrote in the guide,

> Wisconsin's 16 technical colleges have forged strong local partnerships with business and industry, as well as strong collaborations with area PK-12 districts. One result has been a solid foundation for the adoption of a Career Clusters framework and the development of clear, flexible Programs of Study. (p. iii)

WICareerPathways Web Site

The development of the WICareerPathways Web site supports the K-12 implementation of programs of study and comprehensive school counseling model. Through a dynamic data-driven Web-based application, the development of secondary-to-postsecondary programs of study are integrated with individualized academic and career planning within Wisconsin's career clusters framework, which was adopted from the National Career Clusters™ Framework (NASDCTEC, 2013a). The WICareerPathways Web site aids secondary educators in the development of secondary-to-postsecondary programs of study and provides a graphical user interface to display the programs. The Web site assists middle and high school students in career exploration and academic planning by providing access to careers, postsecondary options in Wisconsin,

and high school programs of study. Middle and high school counselors can guide students for success in careers and college by providing them with access to school-wide and individual student Web-site activity.

Project background. At a February 26, 2008, meeting hosted by WTCS office staff and attended by several tech-prep coordinators and secondary partners along with WTCS and WDPI staff, attendees discussed the promotion of career clusters, pathways, and the implementation of programs of study in Wisconsin. Consensus was reached that an organized, consistent, and user-friendly format through a central career pathways Web site would be an essential resource for Wisconsin stakeholders to meet the challenges of growing and maintaining a skilled workforce to support the state's economic development.

Project funding. The WTCS is the sole funding source for the WICareerPathways Web-site project. On behalf of the 16 Wisconsin technical colleges, the career-prep coordinator for District 12 of the WTCS, a comprehensive technical college located in northeast Wisconsin serving 29 comprehensive public high schools, submitted a 2008-09 Perkins IV (2006) program-of-study reserve grant application to determine the feasibility of creating a statewide career pathways Web site. Funding in years 2009-10, 2010-11, 2011-12 continued through a Perkins IV reserve grant. When national legislation reduced Perkins IV funding in 2011, the WTCS augmented 2012-13 Perkins IV funding levels to support the WICareerPathways Web site with a general-purpose revenue state grant. District 12 was awarded a grant for the 2013-14 fiscal year and was invited to submit a grant application for the 2014-15 fiscal year.

Project team. A WICareerPathways Web-site project team was formed. State agencies and educational partners involved in the project included the WTCS, Wisconsin

technical colleges, WDPI, local K-12 school districts, Cooperative Educational Service Agencies (CESA), Wisconsin Department of Workforce Development (WDWD), University of Wisconsin (UW) System, and Wisconsin Association of Independent Colleges and Universities (WAICU).

Several representatives from the WTCS office serve on the project team. The WTCS is the coordinating state agency for Wisconsin's 16 technical colleges. Its governing board establishes statewide policies and standards for technical education programs and services. The board is charged with approving associate degree, technical diploma, apprenticeship, and basic adult education programs and supervising technical college district operations through reporting and audit requirements. The system also administers state and federal aids. The WTCS operates under a shared governance model in which responsibility for the operation of the system is shared by its board and the district boards of the 16 technical colleges (WTCS, 2012a, b, c). The WTCS is the sole funding source for the WICareerPathways Web-site project.

Several Wisconsin technical college career-prep coordinators serve on the project team. The primary mission of the 16 technical colleges is to provide technical education and training that stimulates local economic development. Each of Wisconsin's 16 technical colleges serves a geographical district and is governed by a district board, which is responsible for the direct operation of the technical college. The district boards are authorized to levy property taxes, manage the district budget, contract for services, provide for facilities and equipment, appoint a college president, hire instructional and other staff, and set academic and grading standards (WTCS, 2012a, b, c).

Several WDPI representatives serve on the project team. WDPI is the state agency that supervises all elementary and secondary public education in Wisconsin. It is headed

by the state superintendent of schools, an elected nonpartisan official. WDPI licenses teachers and teacher education programs. It provides direction and technical assistance through a broad range of programs and services to Wisconsin's 425 K-12 public school districts. WDPI receives and disburses state and federal aid (Wisconsin Legislative Reference Bureau, 2011; WDPI, n.d.a).

Representatives from K-12 school districts serve on the project team. According to state statutes, Wisconsin's 425 elected K-12 school district boards have broad powers, including but not limited to the policymaking, management, long-range planning, curriculum, operation, and maintenance of schools and buildings. Wisconsin educators commonly use the term *local control* to describe the powers of the K-12 school district boards. The school boards have the authority to levy property taxes, which are the major source of school district funding (Chapter 120: School District Government, 2009-10).

Three representatives from CESAs serve on the project team. CESAs are state agencies designed to build cooperation among all public and private schools, agencies, and educational organizations that serve students. The 12 CESAs located throughout Wisconsin provide cooperative services that individual school districts cannot provide by themselves (CESA, 2009-10).

A representative from the WDWD's WORKnet Web site, which provides workforce and labor information, serves on the project team. WDWD is a state agency charged with building and strengthening Wisconsin's workforce. The department offers a variety of work-related programs. Major responsibilities include providing job services, training and employment assistance to people looking for work, and working with employers to find the necessary workers to fill current job openings (Wisconsin Legislative Reference Bureau, 2011; WDWD, n.d.a, b).

A representative from the UW System serves on the project team. The UW System is one of the largest public higher education systems in the U.S. It is governed by a board of regents, which establishes policies and rules for governing the system's 13 university campuses, 13 two-year colleges, and the UW-Extension. The board of regents also sets the direction of the system to meet state needs for collegiate education, establishes admission standards, approves university budgets, and appoints the system president and chancellors. All 13 university campuses award degrees at the baccalaureate and graduate level. UW-Madison and UW-Milwaukee also confer doctoral degrees. The UW 2-year colleges offer a liberal arts and science associate degree (Wisconsin Legislative Reference Bureau, 2011; UW System, 2010).

A representative from WAICU serves on the project team. WAICU, a §501(c)(3) nonprofit organization, is recognized in state statutes as the official organization of private nonprofit (or independent) Wisconsin colleges and universities. The 21 Wisconsin-headquartered members of WAICU are fully accredited degree-granting institutions, but each is unique with its own governing body, mission, and culture. The presidents of the member institutions serve as the WAICU board of directors (WAICU, n.d.a, b).

Project feasibility. After extensive discussion, exploration, analysis, and reflection during the 2008-09 planning year, it became apparent to the project team that Wisconsin lacked customized information within the framework of career clusters and pathways for secondary schools to make the connection with postsecondary educational sectors and labor-market information. This gap was clearly stated by Chung (2009), a WTCS representative who served as a project team member:

It seems to me that resources related to building career pathways in Wisconsin are

> where the gap is. That's where our expertise is most valuable. . . . What's unique about us is our stake in promoting development of and commitment to career pathways, whether youth or adult, in the particular ways our state is approaching these frameworks. A career pathways Web site that is focused on supporting the educators that we're counting on to develop programs of study could be very helpful to the cause. (p. 3)

To fill the gap of providing career pathway resources statewide, key Wisconsin stakeholders determined that a central comprehensive career pathways Web site incorporating the career-cluster framework was needed. Although initial discussions focused on hiring a Web-development contractor through a request-for-proposal process, District 12's learning innovation and technology team was identified as having the ideal expertise, knowledge, background, and skills to cost-effectively create the WICareerPathways Web site. This team was uniquely qualified as a leader in designing and implementing user-friendly Web 2.0 technology. The team developed a Web-based quality review process system for program evaluation that has been shared with other Wisconsin technical colleges. In addition, the Wisconsin Online Resource Center, which is a digital library of Web-based learning resources called "learning objects," was developed by the learning innovations team. Due to the scope of the project, the project team pursued a phased approach in the development and implementation of the Web site.

Phase 1. The initial focus of the design and development of WICareerPathways Web site was to organize Wisconsin postsecondary majors, programs, and occupations into Wisconsin's 16 career clusters and 79 career pathways framework. During this phase, specific password-protected features to assist secondary educators in the development of programs of study were developed.

Occupations were downloaded from the Occupational Information Network (O*NET) database (U.S. Department of Labor, 2011). The method originally used to map

O*NET Standard Occupational Classification (SOC) codes to clusters and pathways was achieved by combining existing crosswalks developed under the direction of the Office of Vocational and Adult Education (OVAE), U.S. Department of Education. The Perkins Collaborative Resource Network provided a crosswalk of Classification of Instruction Program (CIP) codes to pathways and a crosswalk of SOC codes to pathways (National Center for Educational Statistics, 2011; Perkins Collaborative Resource Network, n.d.a). The cross-walked results provided a starting point, but WICareerPathways.org project team members fine-tuned the associations for greater compatibility between pathways and occupations.

All three of Wisconsin's higher educational sectors (Wisconsin technical colleges, UW System, and WAICU) participated. The UW System and WAICU organized their college majors and programs by career cluster, and the majors were then populated into the pathways of those clusters. Universal resource locator links to each college and campus's list of academic programs were provided. To fulfill Perkins IV (2006) requirements, the WTCS had organized associate degree, technical diploma, and apprenticeship programs into clusters and pathways, but Web-based tools were developed for career-prep coordinators to serve as administrators of their specific technical college's programs on the Web site. Administrators manage their technical college programs by adding existing programs to additional pathways as deemed appropriate, making changes to existing programs as needed, removing suspended programs, and adding new programs. In addition, the administrators enter and maintain their college programs' universal resource locator links on the WICareerPathways Web site. The first phase also included the development of a Web-based graphical user interface, commonly referred to as the Web-based program-of-study builder tool, which simplifies the task of adding

content to an online program-of-study template.

On June 21, 2010, District 12 delivered a functioning WICareerPathways Web site using Web 2.0 technology with the domain name www.WICareerPathways.org. From the home page, general public users can (a) view a description of the Wisconsin career clusters framework, including brief descriptions of career clusters, career pathways, and programs of study; (b) explore Wisconsin career clusters and pathways; (c) view resources on developing, implementing, and evaluating programs-of-study; and (d) search and view a repository of Wisconsin programs of study published on the Web site.

Each cluster is featured on a separate Web page with a brief description of the cluster, links to the pathways within the cluster, and a link to the knowledge and skills chart that applies to all careers within the cluster (NASDCTEC, 2013d). A 17th cluster of postsecondary programs and majors, named Liberal Arts and Sciences, has a separate Web page. This cluster reflects programs and majors provided by Wisconsin's higher education sectors that are not career specific (see Appendix A).

Each pathway is presented on a separate Web page. Postsecondary programs and majors of the three Wisconsin higher education sectors within the pathway are listed and link to either the educational institution's program Web page or a Web page that lists majors. Careers within the pathway are listed on the pathways Web page and link to career Web pages. Each career Web page contains a brief description of the occupation, national average salary, and education obtained by those currently in the field depicted by a pie chart. Each career Web page links to the U.S. Department of Labor's (n.d.) My Next Move career Web page from the My Next Move Web site at www.mynextmove.org and the Wisconsin Department of Workforce Development's WORKnet career Web page from the WORKnet Web site at www.worknet.wisconsin.gov/worknet/. These links

provide a national and state perspective of the occupations.

The first phase also included development of specific password-protected features to assist secondary educators in the development of programs of study. From the homepage, high school program-of-study builders log in to access these features. Using an interactive Web-based tool, secondary educators can build secondary-to-postsecondary programs of study within a secure environment. This feature takes program-of-study builders through a step-by-step process of selecting a cluster, pathway, and one or more related postsecondary options. Builders then fill in the secondary courses and activities designed for successful preparation in a specific career pathway. Builders can save, edit, and print their programs of study as well as publish them to the general public portion of the Web site. To show its full support of the WICareerPathways Web site, WDPI accepts only programs of study published on the WICareerPathways Web site as part of a school district's Perkins grant application submission.

Prior to launch, a program-of-study builder pilot-training session was conducted to test the WICareerPathways Web site and gather input and feedback for Web-site improvement and enhancement. In addition, a Web-site evaluation report; materials to promote awareness and guide users in site navigation; a sustainability plan to maintain, expand, and upgrade the Web site; and an implementation plan to further build the Web site were developed as part of the first phase. The portion of the WICareerPathways Web site developed during the first phase is now commonly referred to as the program-of-study builder site.

Phase 2. The second phase of the development called for components to assist middle and high school students in career exploration and planning. During 2010-11, District 12 delivered a functioning student Web site accessed by clicking on Students on

the homepage of the WICareerPathways Web site or linking directly to www.WICareerPathways.org/Students. Specific features aimed at students included a secure login for students so they may take the career cluster interest inventory, explore careers and postsecondary programs based on inventory results, and create secondary-to-postsecondary personal academic career plans. During the first phase of the Web-site development, the project team established the look and feel of the site. Although the student site has a different look and feel based upon student input, the data (clusters, pathways, college majors and programs, careers, and published programs of study) are organized the same.

Wisconsin middle and high school students can set up an account by providing their first and last name, creating a user name, providing an e-mail (optional), typing in their school ACT code, creating and confirming a password, and creating a security question and answer. The ACT code connects them with their high school's programs of study. Once an account is established, students can take the Student Interest Survey (NASDCTEC, 2013c) as developed by the National Career Technical Education Foundation. When completed, students land in a secure portal named MiLocker (see Figure 1).

Students can store documents and may link to favorite pathways, careers, college programs, and career-related Web sites in MiLocker. The Web-based interest inventory tool creates a customized summary named MiClusters, which lists the 16 career clusters in rank order based on inventory results. From the MiClusters listing, students can explore the 16 career clusters Web pages and drill down into 79 career pathway Web pages. Within the career pathway Web pages, students can further explore a variety of associated majors and programs of Wisconsin's higher education sectors, an ample

amount of specific career information, and programs of study in that career pathway from their high schools and other schools as well as other programs of study at their school in other pathways.

Figure 1. Customized MiLocker Web page on http://www.WICareerPathways.org/Students.

Students can also convert a program of study created by their high school builder or builders and personalize it to make it their academic career plan, which will be saved to MiLocker. Students do this when viewing a program of study by clicking on Make This My Plan--Save to MiLocker (see Figure 2).

In addition to coursework, the academic career plan feature includes drop-down career and college-readiness checklists organized by grade level and placeholders for students to list work-based learning options, other activities, clubs, volunteerism, awards and honors, and academic and personal goals. Students may expand their academic career plans to include postsecondary coursework. In addition, students can save and print their

plans. Middle and high school counselors and advisers may also guide students as they use the student site, help students create an online academic career plan, and share the student site during student and parent conferences.

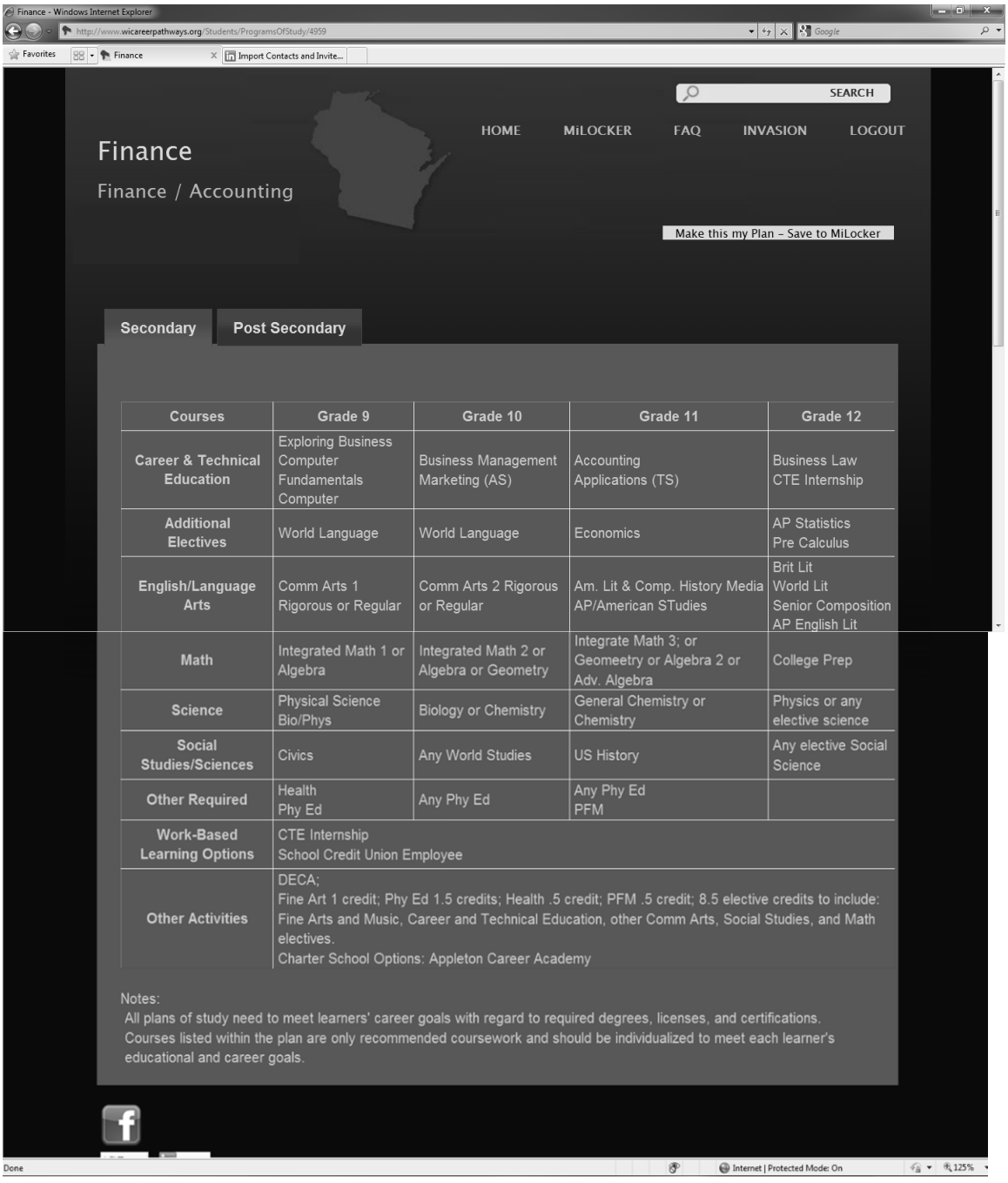


Figure 2. Program of study on http://www.WICareerPathways.org/Students.

In 2011-12, the homepage of the WICareerPathways Web site was upgraded with

an improved look and additional features (see Figure 3). The implementation guide for developing programs of study in Wisconsin can now be accessed from the homepage.

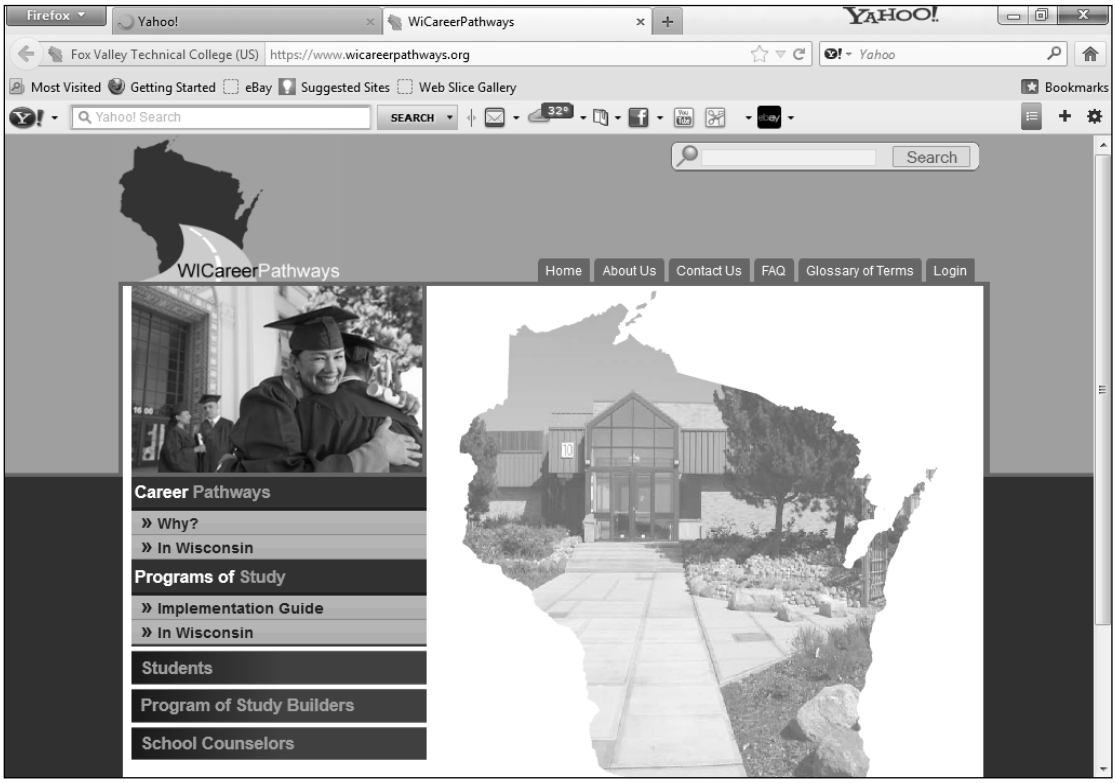


Figure 3. WICareerPathways.org homepage.

Phase 3. In 2011-12, specific data-driven features for middle and high school counselors and advisers were added. Counselors and advisers log in through the WICareerPathways Web-site homepage to access these features. Once logged in, counselors and advisers can view school-wide Web-site activities and individual student activity through a Web page referred to as the Dashboard (see Figure 4).

From the Dashboard, counselors and advisers can view school-wide data related to career clusters, career pathways, programs of study, careers, and colleges. The school-wide aggregate data on the Dashboard reflects cluster interest and views of clusters by students. Interest data were drawn from the students' inventory results. Also displayed are students' top three favorite pathways, the top 10 programs of study converted to

student academic career plans, a pie chart of the top careers favored by students, and a pie chart of the top colleges favored by students. By selecting the View All feature, counselors and advisers can view complete data based on the aggregate number of views and pathways added as favorites by students, specifics on programs of study converted to academic career plans by students, careers added as favorites by students, and colleges selected by students.

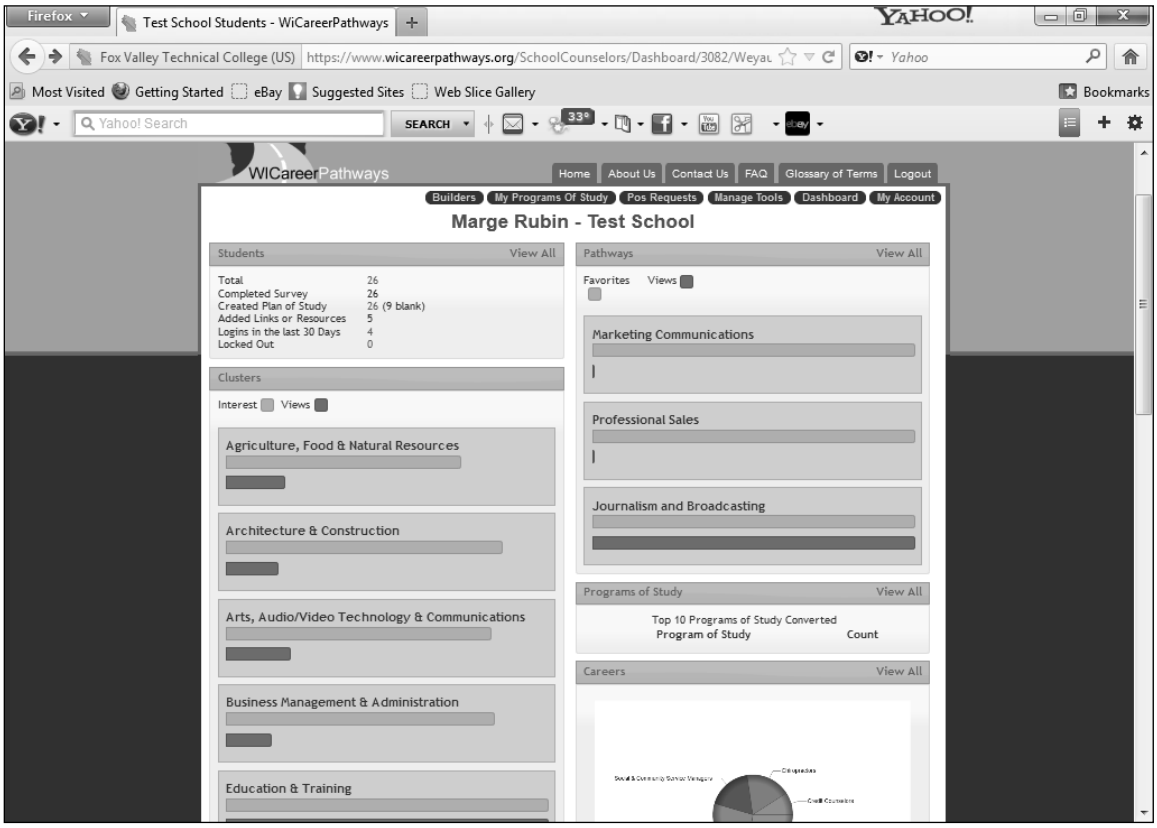


Figure 4. Counselor and adviser dashboard.

Counselors and advisers can also view student data on the Dashboard, including the number of students who created accounts, completed the career clusters inventory, created academic career plans, added links or resources, logged in within the 30 days, and were locked out. By selecting the View All feature, counselors and advisers can create student groups and view individual student profiles, including academic career plans.

In addition to managing technical college programs and high schools within their district, career-prep coordinators manage and grant access to features to program-of-study builders and counselors and advisers. In some cases, secondary staff may be granted access to both program-of-study builder and counselor and adviser features.

The WICareerPathways Web-site executive team was pleased when the executive director of the NASDCTEC (personal communication, October 11, 2012) showed her support by providing a statement highlighting the core logic of the WICareerPathways Web site. This statement is visibly displayed on the login page for career-prep administrators, program-of-study builders, and counselors and advisers:

> Programs of Study help to ensure students have a clear and purposeful plan to transition from secondary to postsecondary education, earn a credential and be prepared for their career through their Career Technical Education program. Through Programs of Study, students are able to select their individual plans based on their personal interests and have an understanding of what academic and technical demands they must meet in order to prepare for the workforce.

Feedback was collected from career-prep coordinators, program-of-study builders, students, and middle and high school counselors during informal focus-group sessions prior to the launch of the various WICareerPathways Web-site components. Presentations and trainings provided opportunities to receive input. Recommendations came from users of the Web site through the Web site's Request a Feature tool. Users also directly contacted the project coordinator, the Web developer, a career-prep coordinator, or a project team member to offer input. Mid- and final-year grant reports submitted by the project coordinator kept the WTCS office abreast of Web-site developments and improvements; however, the WICareerPathways.org Web site was never formally evaluated to plan for its ongoing development and improvement.

Purpose of the Evaluation

The purpose of this evaluation was to develop a comprehensive plan for ongoing development and improvement of the WICareerPathways Web site based on data collected from stakeholder sources. A mixed-method approach with a sequential explanatory design was used. In the initial phase, quantitative and qualitative data were collected through online surveys to identify the satisfactory components of the WICareerPathways Web site and determine which components of the Web site did not meet stakeholder needs. The quantitative data were statistically analyzed, and the qualitative data were organized with a coding process to categorize and reduce them down to themes for analysis.

Following analysis of data collected in the initial phase, this researcher prepared a preliminary plan for the ongoing development and improvement of the WICareerPathways Web site. The results of the data collected in the initial phase and researcher's preliminary plan were shared and critiqued at a follow-up focus-group session. Qualitative data collected at the focus-group session were analyzed, and this researcher finalized the plan.

Audience and Stakeholders

Educational policymakers at the national, state, and local level; administrators; teachers; and counselors will benefit from reading this study. The study could lead to greater emphasis on program-of- study development, career exploration, planning, career counseling, and college and career readiness by secondary and postsecondary educators. Ultimately, students will benefit as they develop career pathways that prepare them for success in adult life.

Definition of Terms

The following terms are defined for this study.

Career and technical education (formerly known as vocational education). The term vocational education was used throughout the 20th century but was changed to career and technical education with the passing of Perkins IV (2006). Career and technical education is a sequence of courses that are aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers.

Career clusters. These are broad occupational groupings based on a set of common knowledge and skills required for a comprehensive group of careers. Wisconsin's career clusters, adopted from the National Career Clusters™ Framework, serve as a tool for organizing the WICareerPathways Web site.

Career pathways. These are a subgrouping of careers within a career cluster used as an organizing tool for curriculum design and instruction. Careers within a pathway are grouped based on their requirements for a set of core and similar knowledge and skills for career success.

Career-prep coordinator (formerly known as tech-prep coordinator). This coordinator at the local technical college is the first point of contact in program-of-study development. Career-prep coordinators typically manage articulation between college faculty and high school teachers and provide professional development for middle and high school educators, administrators, and counselors.

CIP codes. These are the numerical taxonomy of postsecondary instructional programs to support the accurate tracking, assessment, and reporting of fields of study and program completion activity originally developed by the U.S. Department of

Education's National Center for Education Statistics in 1980.

Counselor or adviser. This person helps students explore careers, connect educational achievement with career development, and create an academic career plan needed to reach personal and career goals.

Graphical user interface. This is a Web-based tool that enables a person to communicate with a Web site through the use of symbols, visual metaphors, and pointing devices.

Individualized learning plan (also known as a personal plan of study, an academic career plan, or an individual graduation plan). This includes a program of study and learning that represents a fluid, living, and breathing mapped academic plan reflecting a student's unique set of interests, needs, learning goals, and graduation requirements.

Mobile application. This is a software application that is designed to run on mobile devices, such as a smart phone or tablet computer. Mobile application is commonly shortened to mobile app.

O*NET database. This contains information on hundreds of standardized and occupation-specific descriptors. The database, which is available to the public at no cost, is continually updated by surveying a broad range of workers from each occupation.

Program of study. This is a specific career pathway defined by a local school or technical college district partnership that is a sequence of instruction based on recommended standards and knowledge and skills. A program of study consists of coursework, cocurricular activities, work-based learning, service learning, and other learning experiences, including career and technical student organizations. The sequence of instruction provides preparation for a career.

Program-of-study builders. These are high school teachers, counselors, or administrators who have been assigned the responsibility of creating programs of study at their high school on the WICareerPathways.org Web site.

Push notification. This is a message or alert that is sent electronically to a user without the user requesting it.

Smart phone. This is a mobile phone built on a mobile operating system with more advanced computing capability and connectivity than a feature phone.

SOC codes. These are used by federal statistical agencies to classify workers into occupational categories for the purpose of collecting, calculating, or disseminating data.

Chapter 2: Literature Review

A review of the literature was conducted in the areas of career and technical education, school counseling, and career development, all of which provide insight into the conceptual background of the WICareerPathways Web site. Various computer and Web-based career-planning systems and evaluation approaches, including the developmental evaluation approach pioneered by Patton (1994), were explored. Electronic searches were performed on ERIC, Wilson Web, various state departments of education, and the U.S. Department of Education. The list was supplemented by books, dissertations, reports, and Web sites for additional research information.

As school districts in Wisconsin seek to prepare students for college and careers, national and state initiatives are underway to support their efforts. The U.S. Department of Education through OVAE laid out a design framework for developing and implementing programs of study (Perkins Collaborative Resource Network, n.d.b). A guide by the WDPI and WTCS (2011) incorporates career clusters into program-of-study implementation based on the National Career Clusters™ Framework. WDPI adopted a comprehensive school-counseling model based in part on the ASCA national model (Bowers & Hatch, 2005; Spear et al., 2007). The model incorporates academic advising and career development through the use of individualized learning plans. The statewide WICareerPathways Web site is a unique resource that supports these efforts.

This review of literature was designed to investigate career and technical education, programs of study, school counseling, career development, and individualized learning plans. The review also focused on exploring computer- and Web-assisted career-planning systems and various approaches to consider in evaluating the Web site. The purpose of this evaluation was to develop a comprehensive plan for ongoing development

and improvement of the WICareerPathways Web site based on data collected from stakeholder sources. Reasons for selecting Patton's (1994, 1996, 2011) developmental evaluation framework are also discussed in this chapter.

Career and Technical Education

This section provides a historical and theoretical perspective of career and technical education, including the influence of previous legislation. Studies describing the impact of career and technical education are reviewed. The development of career clusters and pathways as well as current legislation requiring the development of programs of study is highlighted. Recent research on the impact of programs of study is reviewed.

Historical and theoretical perspective. Career and technical education in the United States can be traced back to the apprenticeship system in colonial times. Individuals who wanted to learn a craft sought out a master craftsman to mentor and teach them. The Massachusetts Bay School Law (1642), the first education law passed in America, required masters to teach reading and writing to apprentices. Apprenticeship programs declined as industrial education became a more common way for those in the lower social classes to improve their situation (Gray & Herr, 1998).

A committee composed of educators known as the Committee of Ten, recommended an academic model that included Latin, Greek, English, and other modern languages as well as mathematics, physics, astronomy, chemistry, natural history, history, civil government, political economy, and geography (National Educational Association, 1894). By the turn of the 20th century, public secondary schools were teaching these content areas but were serving only a very small portion of the school-age population. A need arose for vocational education in the public schools (Gordon, 2008). Snedden (1910,

1915), Prosser (1913), and Dewey (1915, 1916) were well-known advocates for including vocational education in the public education system during the early 1900s, but the views of Snedden (1910, 1915) and Prosser differed greatly from those held by Dewey (1915, 1916).

Snedden (1910, 1915) believed that schools should prepare students for occupations based on the social efficiency doctrine. Six basic theories formed the foundation of this doctrine. The social stratification theory was based on the idea that it was possible but difficult to move between social classes. The theory of probable destiny held that, if an individual was born into the working class, that individual would most likely stay in the working class. The theory of psychometrics focused on psychological testing to determine scientifically an individual's probable destiny. Social control theory was based on members of society clinging to the customs of that society. Pedagogical theory held that vocational education should be taught using a step-by-step hands-on approach. Behaviorist theory prescribed that good behavior should be rewarded (Camp, 1983).

Prosser (1913) studied under Snedden (1910, 1915) and was guided by his teachings. Later, Snedden (1910, 1915) and Prosser became colleagues in support of vocational education. Their view, commonly known as education for occupations, narrowly defined *vocational education* as a means to prepare the learner for an occupation. They believed that the public education system should include vocational education, but it should be separated from academic education (Gordon, 2008)

Dewey (1915, 1916) was opposed to the separation and favored a boarder purpose of public education in which occupations were a key component, commonly known as education through occupations. According to Gordon (2008), "Dewey strongly advocated

vocational exploration as a means to acquire practical knowledge, apply academic content, and examine occupational and societal values" (p. 32). Nonetheless, the philosophy of Snedden (1910, 1915) and Prosser (1913) prevailed.

Legislative influence. Influenced by Prosser (1913), early legislation played an important role in separating vocational education from academic education in high schools across the country. This first legislation was the Vocational Education Act of 1917, more commonly known as the Smith-Hughes Act of 1917 (PL 64-347). By requiring each state to establish a vocational education board, many states set up a board separate from its board of education, fostering the separation of vocational education from academic education (Gordon, 2008).

The next important piece of federal legislation was the Vocational Education Act of 1963 (PL 88 210), which was designed to provide students with access to vocational education while addressing workforce needs. This law was amended in 1968 and 1976 and specified that funds could be used for secondary and postsecondary students, workers needing retraining, individuals with academic and financial difficulties, and disabled individuals. In addition, funding provided for the construction of vocational schools, vocational guidance, program evaluations, and teacher education (Gordon, 2008; Threeton, 2007).

The Carl D. Perkins Vocational Education Act of 1984 (PL 98-524), known as Perkins, replaced all previous vocational education legislation. This legislation, named after the congressional legislator who had been a strong supporter of vocational education, was referred to as the Perkins Act. It was developed in response to the demand for a skilled workforce and to provide equal opportunities for individuals in vocational education (Gordon, 2008; Threeton, 2007).

During this time, efforts to bring together academic and vocational education were being carried out by vocational education advocates (Stipanovic, Lewis, & Stringfield, 2012). Parnell (1985) laid out a comprehensive plan blending liberal arts with vocational arts without diluting the 4-year degree track. This concept became known as tech prep and became law when Congress passed the Tech Prep Education Act as part of Carl D. Perkins Vocational and Applied Technology Act Amendments of 1990 (PL 101-392), which was known as Perkins II (Cellini, 2006). Tech prep promoted articulation agreements between secondary and postsecondary education to award transferable credits for high school classes, career development, and technical coursework. It also called for greater connections between school and work. These initiatives were aimed at providing students with a better transition into postsecondary education or high-tech careers (Bottoms, 2008; Cellini, 2006). The Carl D. Perkins Vocational and Technical Education Act of 1998 (PL 105-332), known as Perkins III, followed with the same intent to raise academic standards through integration of vocational education with academic studies and broaden vocational education beyond narrow occupational training. This restructuring challenged educators to rethink how the educational curriculum was organized (Bragg, 1999; Fletcher & Zirkle, 2009).

Theoretical transformation. With the shift toward reuniting academics and vocational education, Doolittle and Camp (1999) recognized that the theoretical framework of behaviorism was no longer relevant for career and technical education. They suggested a cognitive constructivist foundation whereby learning should take place in authentic environments and involve social interaction. Content and skills should be relevant and understood based on the learner's prior knowledge. Acquiring knowledge is an ongoing practice. Future learning experiences are based on previous learning. Learners

should know what they know, know what they can do, and know what to do (Doolittle & Camp, 1999).

Career and technical education research. Bishop and Mane (2004) studied data provided from the National Educational Longitudinal Study. The purpose of their study was to determine if career and technical education helped retain students in high school and encouraged them to continue in postsecondary education and have greater success in the labor market. They concluded that taking career and technical education courses in high school tends to increase attendance and improves labor-market outcomes whether or not students pursue and complete postsecondary education (Bishop & Main, 2004).

Stone and Aliaga (2005) analyzed data from the National Longitudinal Survey of Youth. This national database included approximately 9,000 youth 12 to 16 years old as of December 1, 1996. It was developed to document participation in high school programs, such as career and technical education, career majors, tech prep, and school-to-work activities. According to Stone and Aliaga, the results reflected that, "despite continuing demands on school schedules for inclusion of more academic courses, career and technical education remains a large part of the high school experience" (p. 140). Regarding the relationship between school achievement and participation in career and technical education, there is no doubt that academic concentrators are more academically prepared than career and technical education concentrators. However, career and technical education concentrators had a smaller achievement gap than general concentrators (Stone & Aliaga, 2005). Preparing students for both college and careers may produce a small academic penalty, but as pointed out by Bishop and Mane (2004), it may improve labor-market outcomes in the long run.

Gentry, Peters, and Mann (2007) noted that gifted and talented students are often

overlooked for career and technical education. These researchers investigated the differences between general and talented students' perceptions of their career and technical education experiences. Students attended both a career and technical education center and traditional high school. Four major themes emerged from the study: (a) student autonomy; (b) effective, caring teachers; (c) other students with similar interests; and (d) learning relevant content in an interactive applied setting. Career and technical education offered benefits to both the talented and general students and should be an option for talented students. Their study also reinforced that students who take courses related to their interests are more likely to be engaged in school, thereby reducing the risk of dropping out. Gentry et al. said, "Teachers can involve their students in meaningful, hands-on learning, offer them choices to foster ownership and self-direction, and connect their lessons to the larger world of work and future possibilities to which students can relate" (p. 396).

Bae, Gray, and Yeager (2007) compared career and technical education students with noncareer and technical education students who had similar math skills when they entered high school. The researchers observed that very few career and technical education students had taken algebra in ninth grade compared to noncareer and technical education students despite the fact students had similar math skills at the end of eighth grade. The research revealed that lack of higher level math among career and technical education students was associated with lower 11th-grade math test scores. Bae et al. suggested that it is important for as many students as possible to take algebra in ninth grade regardless of whether they take career and technical education programs.

Stone, Alfeld, and Pearson (2008) tested the hypothesis that high school students in a career and technical education program enhanced with contextual math would

develop a better understanding of math than those in a traditional career and technical education course. They found that the math-enhanced curriculum positively affected students' math performance on the traditional and college-placement tests without detracting from students' content knowledge in their occupational areas. The researchers suggested that including math lessons in career and technical education curriculum helps students gain greater mastery of the math skills necessary for success in postsecondary education and the workplace. Stone et al. went on to state that "math should be treated as a necessary tool for problem solving rather than a separate--and for many students, abstract and irrelevant--subject" (p. 791).

In a study to identify the most effective elements of tech prep in increasing the educational attainment of participants, Cellini (2006) hypothesized that tech prep will decrease a student's cost of attending community college but may increase a student's cost of attending a 4-year college. Further, tech prep may enhance students' engagement in high school and may make labor-force participation more appealing. Cellini, using a family fixed-effects approach, compared educational attainment of tech-prep participants with the outcomes of their nonparticipating siblings, accounting for the possibility of within-family spillovers. Data were drawn from the 1997 National Longitudinal Survey of Youth. Cellini reported that participants were significantly more likely to graduate from high school and enroll in 2-year colleges than their nonparticipating siblings. Participants also showed higher grades completed and higher degrees received.

Kim and Bragg (2008) uncovered a connection between dual credit and articulated hours earned and college readiness in their examination of four tech-prep consortia (Ohio, Texas, Florida, and Oregon). Of note is that two (Ohio and Texas) of the four states studied offered career and technical education dual-credit courses as part of

career pathways that connected secondary and community college curriculum. For example, in Ohio, students who chose an allied health career pathway program could earn up to 18 articulated credits during their last 2 years of high school and then obtain the remaining required credit hours during the 2 years in an associate of applied science program at a community college. Kim and Bragg believed that participation in this type of program contributed to the significant positive relationship between articulated credit hours and total college-level credit hours earned in Ohio and Texas. On the other hand, Oregon's articulated career and technical education courses had a negative impact on total college-level credit hours. Kim and Bragg suggested that may have more to do with the length and credential offered than the type of college credit.

Fletcher and Zirkle (2009) investigated the relationship of high school curriculum tracks and student achievement based on degree attainment and occupational earnings. Four tracks were defined: (a) career and technical education, (b) college preparatory, (c) dual track of career and technical education along with college preparatory, and (d) a general track with a minimum amount of state-mandated curriculum required to graduate. Fletcher and Zirkle found that those in the college-preparatory track had the most positive postsecondary outcomes but the dual track also provided positive postsecondary outcomes.

In a quantitative study wherein a university and career and technical education center partnered to offer five dual-credit courses in math and physics, Bishop-Clark et al. (2010) reported success based on student perceptions and provided guidelines for those at career and technical education centers interested in starting similar programs. Student feedback from surveys and focus groups was extremely positive. At the end of the course, almost all students believed they had the confidence in their ability to be accepted into

college. According to Bishop-Clark et al., this presented a compelling argument for combining dual-credit math and physics courses in a career and technical education setting.

Another compelling argument for combining math and science with career and technical education came directly from high school graduates who participated in a study analyzing their career development. Over one fourth of the graduates regretted not taking advanced math and science courses in high school to prepare for college (Packard, Leach, Ruiz, Nelson, & DiCocco, 2012).

Current legislation. The Carl D. Perkins Career and Technical Education Act of 2006 (PL 109-270) is the most recent reauthorization and is commonly referred to as Perkins IV. In an effort to redefine vocational education, Perkins IV (2006) officially changed vocational education to career and technical education, which initiated a broader focus of helping students (a) apply core academic skills to real-world situations that occur in the workplace, (b) develop essential employability skills, and (c) master technical skills related to a specific career pathway. Perkins IV (2006) provides funding to support career and technical education programs with the intent of meeting workforce needs by creating a seamless transition from high school to postsecondary programs or the workforce.

The tech-prep initiative of former Perkins' reauthorizations formed the basis of programs of study as set forth in Perkins IV (2006). School administrators must create at least one program of study for their students in order for the school to become eligible to receive funding. The secondary-to-postsecondary program of study must blend a dual track of rigorous academic and relevant technical education coursework with an emphasis on applied learning. The program of study should contain a logical sequence of high

school and college courses that leads to an industry certification or postsecondary credential (Alfeld & Bhattacharya, 2012; Southern Regional Education Board, 2007; Stipanovic et al., 2012; Threeton, 2007).

Career clusters and pathways. In 1996, OVAE, the National School to-Work Office, and the National Skill Standards Board partnered to establish linkages among state educational agencies, secondary and postsecondary educational institutions, employers, industry groups, other stakeholders, and federal agencies to develop career clusters. The National Career Technical Education Foundation carried on the previous linkages initiative to create curricular frameworks within broad career clusters to help students transition successfully from secondary to postsecondary education, employment within a career cluster, or both (Career Clusters, 2000).

NASDCTEC carried on this earlier development of career clusters and pathways. Today, the National Career Clusters™ Framework (NASDCTEC, 2013a) supports the development of programs of study by providing the organizational structure. The 16 occupational groupings, known as career clusters, define academic, technical, and employability knowledge and skills. The cluster-level skill statements are very broad, providing students with foundational knowledge and skills that could be applied in numerous careers within the cluster. Each cluster is subdivided into two to seven career pathways. The pathways are narrower and define specific types of career opportunities within the clusters. For example, the education and training cluster is divided into three pathways: (a) teacher and training, (b) administration and administrative support, and (c) professional support services. A total of 79 pathways have been developed across the 16 career clusters (ACTE, 2010; NASDCTEC, 2013a). The career-cluster framework encompasses all occupations identified by O*NET and the SOC codes (National Career

Technical Education Foundation, 2007a). Through crosswalks of SOC and CIP codes, academic programs can be organized within this framework.

Programs of study. Stipanovic et al. (2012) pointed out that previous reform initiatives have not taken hold because they typically fall apart at the implementation stage. Any reform is challenging; changing education through the development of programs of study is no different. OVAE (Perkins Collaborative Resource Network, n.d.b) created a design framework for developing and implementing programs of study consisting of 10 components: (a) legislation and policies, (b) partnerships, (c) professional development, (d) accountability and evaluation systems, (e) college and career readiness standards, (f) course sequence, (g) credit transfer agreements, (h) guidance counseling and academic advisement, (i) teaching and learning strategies, and (j) technical skills assessments (see Figure 5).

The WDPI and WTCS (2011) guide supported program-of-study development and implementation. The guide utilized OVAE's program-of-study components and the career clusters framework.

Stipanovic et al. (2012) listed four specific challenges that must be addressed if Perkins IV is to effect change: (a) alignment of secondary and postsecondary curriculum; (b) a coherent sequence of courses that combines both rigorous academic and relevant career and technical education components; (c) opportunities for dual enrollment; and (d) a workplace credential or postsecondary certificate, associate degree, or baccalaureate degree as the end result. Various components of programs of study have been in place for several years, but Alfeld and Bhattacharya (2012) pointed out that the concept of programs of study is "relatively new" and "research evidence on their implementation and effectiveness has not yet borne results" (p. 121).

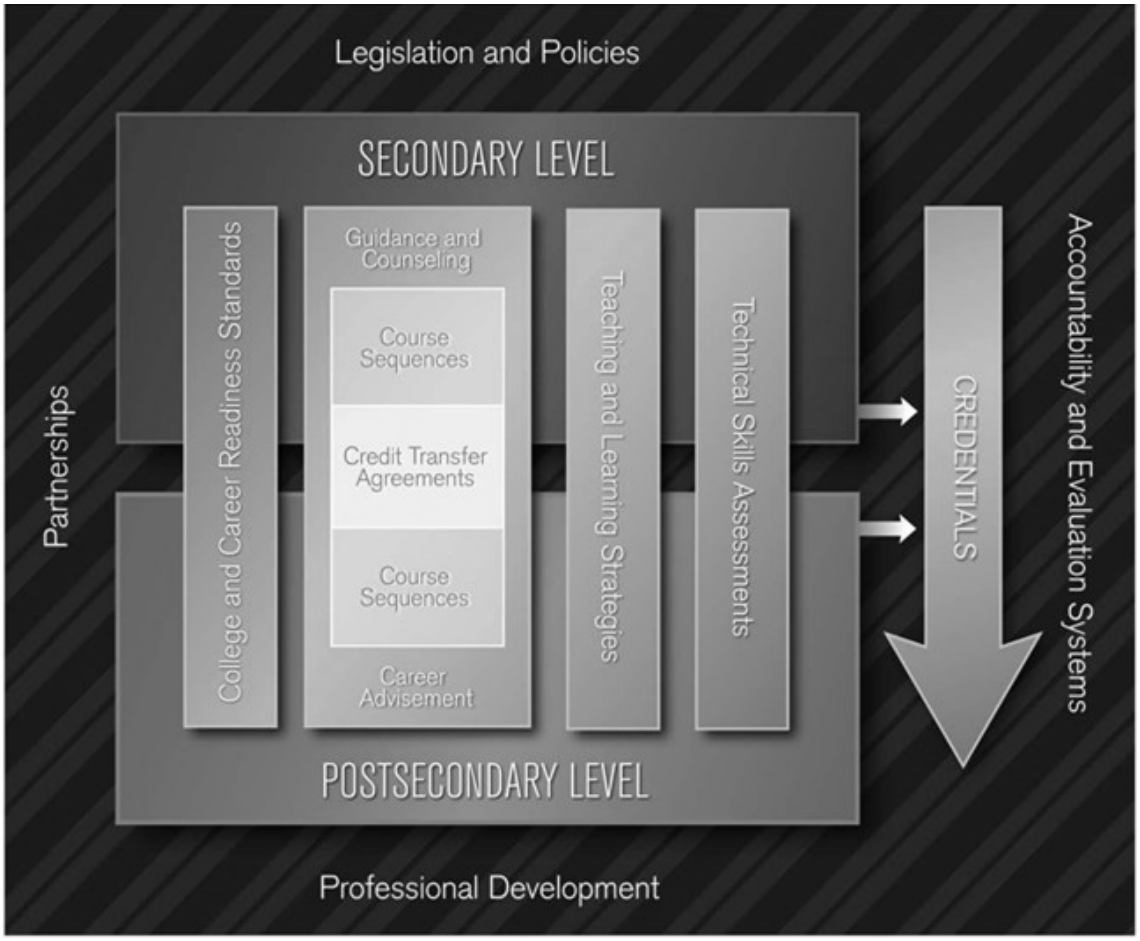


Figure 5. Office of Vocational and Adult Education program of study design framework. From *Programs of Study Design Framework*, by Perkins Collaborative Resource Network, n.d.b. Retrieved from http://cte.ed.gov/nationalinitiatives/rposdesignframework.cfm

Programs of study research. By studying three community colleges, each with strong collaborative partnerships with local high schools, Alfeld and Bhattacharya (2012) sought to understand programs of study better. The first stage of their multistage mixed-methods design incorporated case-study research. Data from focus groups with high school students, teachers, counselors, and administrators, as well as postsecondary staff and instructors, were collected. According to Alfeld and Bhattacharya, a "backward mapping approach" (p. 124), which looks at the end goal of the process first and follows with how implementation affected the goal, was utilized.

The results uncovered common elements across all three sites. All three colleges

provided resources to support dedicated staff who worked with the high schools to create and maintain seamless secondary-to-postsecondary transitions. Active advisory committees supported the programs of study. Each college developed dual-credit opportunities for high school students to earn college credit offered at the college. In many cases, transportation was provided, and scheduling between the high schools and college was aligned. If dual-credit courses were taught at the high school by the high school teachers, those teachers were properly credentialed to teach the college course. Students in dual-credit courses were enrolled at the college, and the credits earned were posted to a college transcript (Alfeld & Bhattacharya, 2012).

Despite evidence of the lack of systematic integration of academic and career and technical education curriculum at the secondary level and lack of alignment and integration between secondary and postsecondary curriculum, all programs of study led to an industry-recognized credential or postsecondary degree. In addition, evidence of components identified by the program-of-study framework developed by OVAE, such as technical-skills assessments, career and technical education student organizations, work-based learning, and career counseling, was observed (Alfeld & Bhattacharya, 2012).

According to Alfeld and Bhattacharya (2012), data collected from the surveys revealed that only about half the students reported the program of study they were in was of the most interest to them, yet most students agreed or strongly agreed that being in a program of study "made them more engaged in school and in preparing for a career . . . [and] made me focus my studies so I know where I am headed" (p. 130). Seventy percent of students planned to enroll in a technical school or 4-year college. A follow-up survey of students who were still in high school 1 year later revealed that most remained positive about involvement in a program of study and their academic achievement. Only 17% of

students graduated enrolled in college in the same program of study. Although not in the same program of study, a survey administered to the remaining graduates found that most were either in 2-year colleges or 4-year universities. Most agreed their high schools had adequately prepared them for college or work. Alfeld and Bhattacharya concluded that there are no guarantees that students will transition into the same program of study at the postsecondary level and cautioned that measuring success of programs of study by this result is too narrow. A better indicator of success would be whether the students made future college and career decisions using the academic, technical, and employability skills they gained through the program of study.

Castellano, Sundell, Overman, and Aliaga (2012) conducted a longitudinal study of two school districts to determine if programs of study improved student engagement and achievement. Castellano et al. searched for districts that established enrollments of schools with career-focused reforms based on a random public drawing known as a lottery. Two districts, one in a large city in a Western state identified as West District and the other in a large city in the eastern United States identified as East District, were selected. This comprehensive study included classroom observations and interviews with teachers, students, and administrators during site visits of the treatment and comparison schools. The achievement outcome was quantitatively measured with career and technical education grade point average (GPA) and academic GPA for ninth- and 10th-grade students. Tenth graders were also measured on achievement test scores and whether they were on track to graduate. Castellano et al. reported on the first 2 years of the 4-year study.

In the West District, the treatment group included students who were attending three schools with programs of study. One was a new high school with units that included

both academic and career and technical education teachers. The second school, housed in a renovated career center, had upgraded their academic and career and technical education offerings to provide greater rigor. The third school, a magnet career academies school, had a reputation as a high-performing school. The comparison group consisted of students who applied to the treatment schools but were not selected for enrollment (Castellano et al., 2012).

The qualitative findings reflected West District's three treatment schools met most of the minimum program-of-study requirements set forth by Perkins IV (2006). On the other hand, the comparison schools fell short in meeting program-of-study requirements with most lacking coherent course sequences and postsecondary options. None showed alignment of academics to career and technical education. Fewer resources supporting career and technical education were available in the comparison schools. According to Castellano et al. (2012), the treatment schools used "innovative teaching techniques to include applying academic learning to career contexts and developing a sense of identity around programs of study" (p. 106). The techniques included integrated technology, project-based learning, teacher mentoring and advising, familial culture, hands-on learning, school skills and professional standards, reputation of high achievement, and student self-awareness. The researchers found little evidence of these practices in the comparison schools.

The quantitative findings reflected that the career and technical education GPA of ninth graders at the treatment schools were significantly lower than those at the comparison schools. However, by the end of 10th grade, no significance in career and technical education GPA was found. No significant differences were found between the treatment and comparison students' ninth-grade academic GPA or ninth- and 10th-grade

cumulative academic GPA. However, treatment students were significantly more likely to be on track to graduate than comparison students, and 10th-grade achievement-test scores were significantly higher than the comparison students (Castellano et al., 2012).

The treatment school in the East District was a state-of-the-art high school featuring career academies in engineering, medical sciences, and information technology. All academies contained rigorous academics and articulated courses that could be applied to an associate degree or postsecondary certificate program. The comparison group consisted of students from four other high schools in the East District (Castellano et al., 2012).

Qualitative findings showed that East District's treatment school met Perkins IV (2006) requirements but struggled due to state funding cuts affecting tuition waivers for treatment students to attend community college. Local funding cuts affected students taking industry-recognized credentialing exams. Opportunities still existed, but not as many students could take advantage of them.

Castellano et al. (2012) found that the treatment students enjoyed a school culture that supported career and technical education as a pathway to college, up-to-date equipment, and teachers with recent workforce experience. The treatment school exhibited a culture of caring and collaboration, high expectations, and college and career planning. Career and technical education at the comparison schools varied in quality and academic rigor, and there was a lack of connection to "the real world" (p. 110), according to Castellano et al. Some students were placed in career and technical education courses due to scheduling rather than interest.

There were no significant differences between the treatment and comparison students' ninth-grade career and technical education GPA or in the ninth- or 10th-grade

cumulative GPA. No significant differences were found in ninth-grade academic GPA. However, cumulative ninth- and 10th-grade GPA significantly favored the treatment group. By the end of 10th grade, treatment students were significantly more likely to be on track to graduate on time than the comparison students even though there was little difference between the treatment and comparison schools on state achievement exam scores. Based on the findings that differences between treatment and comparison students were beginning to appear by the end of 10th grade, Castellano et al. (2012) concluded that the results were promising for students in rigorous programs of study.

School Career Counseling

This section provides a historical and theoretical perspective of career guidance and recent research on school career counseling. The current national school counseling model is also reviewed.

Historical and theoretical perspective. Historically, debates on vocational guidance paralleled vocational education. Gysbers (2001), based on the philosophy of education for occupations, defined *vocational guidance* as "being a way to sort individuals to their various capacities preparing them to obtain a job" whereas the other approach focused on helping "students to make educational and occupational choices" (p. 97).

During the first 2 decades of the 20th century, vocational guidance and counseling were assigned to teachers. In addition to regular teaching duties, these individuals provided guidance without any organizational structure. By the early 1920s, guidance shifted from social and industrial issues to the personal and educational aspects of individuals. In the 1930s and 1940s, personal counseling and educational guidance took hold, and the concept of pupil personnel work emerged as an organizational framework

for education. Attendance officers, visiting teachers, school nurses, school physicians, and vocational counselors were grouped under the structure of pupil personnel work to assist in the development of pupils (Gysbers, 2001; Gysbers & Henderson, 2001).

During the second half of the 20th century, guidance expanded to a more psychological perspective with an emphasis on counseling and testing. In the 1950s, counseling the college-bound student became a priority. By the 1960s, teacher counselors were replaced with full-time school counselors who performed guidance and counseling services. By focusing on the position of counselor, rather than a program of guidance and counseling, the role of counselors was viewed as supportive; therefore, administrative-clerical duties continued to be assigned to counselors (Gysbers, 2001; Gysbers & Henderson, 2001).

Guidance and counseling began to shift from a focus on the individual position to a comprehensive program in the 1970s. During this time period, there was a concern about guidance and counseling results. The idea of a comprehensive guidance and counseling program continued into the 1980s and 1990s. There was also renewed interest in vocational-career development and developmental guidance and counseling (Gysbers, 2001; Gysbers & Henderson 2001).

School career counseling research. Bardick, Bernes, Magnusson, and Witko (2004) explored the career-planning perceptions of junior and senior high school students to gain an understanding of the importance of career planning and determine which students were most likely to seek career-planning advice. Bardick et al. reported that participants perceived career planning as either important or becoming important in a year or two. Younger participants preferred approaching parents, friends, relatives, or someone working in the field for career-planning assistance rather than teachers or school

counselors. Older participants were more likely to approach someone working in the field, teachers, and school counselors. All participants wanted help with career exploration and career decision making (Bardick et al., 2004).

A study by Gibbons, Borders, Wiles, Stephan, and Davis (2006) focused on the perspectives of ninth graders' career and college-planning needs. Ninth grade is a time when students are considering high school coursework relevant to postsecondary education. Participants reported talking with parents and family was the most helpful, but talking with counselors was rated among the least helpful. Gibbons et al. suggested this may be because participants did not have much contact with their counselors or may be more aware of their career discussions with parents.

Despite participants' enrollment in a college-preparation track and reporting plans to attend college, most students, according to Gibbons et al. (2006), "had not taken a career interest survey, talked with the school counselor, written a resume, worked/volunteered in their career interest, nor taken classes related to their career interests" (p. 173). Participants expressed a need for career options and college-planning information. Gibbons et al. suggested school counselors provide more information to ninth graders and involve parents earlier in the process. School counselors could recommend, according to Gibbons et al., "reliable sources of information, including Web sites describing colleges and guiding educational and career planning" (p. 176).

Researchers Domene, Shapka, and Keating (2006) investigated the characteristics of Canadian students in ninth and 10th grades that predicted whether or not students would turn to counselors for assistance. Domene et al. uncovered that the participants preferred to seek career-planning advice from family members but turned to counselors for assistance in educational planning needs. The Domene et al. study revealed that

academic achievement did not predict help seeking, but it did expose a reverse relationship between educational and occupational aspirations: "educational aspiration levels predicted career-related help-seeking while occupational aspiration levels predicted educational help-seeking" (p. 154).

Coogan and DeLucia-Waack (2007) explored student perceptions of school counseling programs and the role of counselors. Participants were between 18 and 25 years old and were asked to reflect back on their high school experiences. The majority of students reported that the most important role of school counselors was to assist with college selection and college decision making. Academic-related issues came in second. Coogan and DeLucia-Waack considered this to be a move in the right direction for school counselors to expand into the academic domain, a positive shift from the historic and limited role of counselors as providing vocational guidance.

Current school counseling model. Today, many states and K-12 schools have adopted school counseling programs based on the ASCA national school counseling model (Bowers & Hatch, 2005). According to Bowers and Hatch (2005), this comprehensive model "supports the school's academic mission by promoting and enhancing the learning process for all students through an integration of academic, career and personal/social development" (p. 15). Delivery of the systematic counseling program includes guidance curriculum and individual student planning. Bowers and Hatch said school counselors "help all students plan, monitor and manage their own learning as well as meet competencies in the area of academic, career and personal/social development" (p. 41).

For students to make good educational and career choices, they need professional counseling and guidance (Withington et al., 2012). A counseling and guidance element is

a significant component in the program-of-study design framework (Perkins Collaborative Resource Network, n.d.b). Administrators in schools that emphasize programs of study can facilitate a relationship between the goals of programs of study and counseling programs. Counselors and advisers can provide students with comprehensive guidance services to help them explore postsecondary options and careers.

Career Development

This section provides an overview of various career-development theories. Recent research relating to career readiness through career exploration and planning is reviewed. An examination of individualized learning plans to support college and career development is included.

Historical and theoretical perspective. Several theories relating to different aspects of career behavior have been developed in various disciplines. Gray and Herr (1998) divided these theories into five distinct categories: (a) trait and factor, (b) decision making, (c) situational or sociological, (d) personality, and (e) developmental.

Trait and factor theory is based on differential psychology. According to Gray and Herr (1998), this theory stresses identifying the "traits, aptitudes, interests, values, psychomotor abilities, energy levels, and temperaments" by which people are unique (p. 116). Occupations and education can be matched with individual essential behaviors to perform whatever is required. The closer an individual's characteristics match an occupational profile, the more likely the individual will adjust to the occupation and be successful.

Originally based in economics, career-decision theory approaches focus on the process of how individuals make career decisions. Adequate information and processing

of that information is essential. Individuals make career decisions if they first explore alternatives available and then decide which one is best based on what they know about themselves and their personal values (Gray & Herr, 1998).

Sociological career-development theories emphasize that culture or social class influences an individual's educational, occupational, and lifestyle choices. Career development is not a smooth progression, but rather each individual follows a different path based on such external factors as their socioeconomic status, family history, community, geographic location, gender, and race (Gray & Herr, 1998).

Personality theories focus on how personality motivates individuals to choose careers. The most empirically based personality approach was developed by Holland (1985). This approach assumes that an individual's behavior is based on the interaction between personality and environment, and career choices are an expression of an individual's personality.

The perspective that career choices are rooted in early childhood and take place over the period of an individual's life is the foundation of developmental theories. One of the most comprehensive and influential of these is Super's (1990) life-span life-space theory. This theory incorporated the trait-and-factor, sociological, and personality approaches (Gray & Herr, 1998). The core of Super's theory is that career development occurs during stages in a person's life. The stages are growth, exploration, establishment, maintenance, and disengagement. Career exploration typically begins during adolescence. Individuals in this stage seek opportunities to explore careers through education and work experiences. This exploration process helps an individual narrow his or her career choices, select a career, and then actively pursue it through education, training, and work (Kosine & Lewis, 2008).

An influential approach builds upon existing career theories and utilizes a framework known as social cognitive career theory (Lent & Brown, 1996). The theory implies that academic and career interests are created from self-efficacy beliefs and outcome expectations with personal goals playing an important role.

Career development research. Skorikov (2007) examined adolescent career preparation and its relationship with adjustment. Data results from Skorikov provided evidence in support of the importance of career preparation during adolescence and were consistent with the researcher's expectation that career development is a "highly continuous process, which represents a significant factor of adjustment during the transition to adulthood" (p. 17). Participants in the study became more career decided and gained slow but steady growth in career confidence from 11th grade to 6 months after high school graduation.

Stringer, Kerpelman, and Skorikov (2011) assessed the development of career identity by considering three dimensions of career preparation: career decision making, career planning, and career confidence. The researchers examined how each dimension develops over time and the interrelations among dimensions of career preparation from 12th grade in high school to 4.5 years after high school. Stringer et al. reported that young adults are simultaneously making career decisions, developing career plans, and becoming more confident in their career choices. As hypothesized, career decision making and career planning were positively linked, and career planning and confidence were negatively related to career indecision.

A longitudinal study by Creed, Patton, and Prideaux (2007) examined changes in the career maturity of Australian high school students over a 2-year time period, first in eighth grade and then in 10th. The researchers found that "students with higher levels of

career decision-making confidence, paid work experience and more ability reported higher career planning/exploration" (p. 387). Creed et al. concluded that enhancing self-efficacy will lead to increased career exploration and recommended including work experience in school programming and requiring more help in career exploration and planning for students with less ability.

Rogers, Creed, and Glendon (2008) examined the role of personality in high school career planning and exploration from a social cognitive perspective. Their results showed that personality and social supports are directly and indirectly related to the career-development process. Rogers et al. found these results suggested that "individuals who are conscientious and open to experiences are more likely to engage in career planning" (p. 139). Findings also showed a relationship among supports, goal setting, and planning, suggesting that such supports "will result in greater career planning activity" (p. 141).

A study by Gabriele (2008) examined the relationship between orientations to happiness and critical factors in an adolescent's educational life and how these orientations to happiness impacted academic motivation, community involvement, extracurricular involvement, and clarity of career plans. Of significance were the connections with academic motivation and clarity of career planning. Gabriele suggested that adolescents may find it easier to set goals for their future if they believe life has a purpose and what they do matters to society. Further, adolescents may be more inspired to explore multiple career options. School counselors should help students develop meaning by assisting them in recognizing what has relevance in their lives. Educators should develop curriculum that helps students take ownership of their academic work to create a sense of engagement and meaning.

Vasalampi, Salmela-Aro, and Nurmi (2010) examined the impact of middle or junior high school students' transition into secondary programs that were more in line with their academic skills (academic versus vocational track). They found students' intrinsic reasons for goal strivings and goal progress increased, contributing to self-esteem. Self-esteem also predicted goal progress. Although programs of study combine academic and career and technical education courses, which is very different than the two-track educational model examined in this study, Vasalampi et al. showed that students who chose a pathway that was in line with their skills and abilities were more likely to set goals and make progress towards those goals. Their self-esteem was also likely to increase.

Staff, Harris, Sabates, and Briddel (2010) used nationally representative data from the U.S. National Education Longitudinal Study to investigate how uncertainty in career aspirations at age 16 affect wage attainments at age 26. The results of the study reflected that 16 year olds who reported uncertain career aspirations had significantly lower wages at age 26 than those with career aspirations. The effects remained significant even when the correlations were reduced to take into account academic ability, school effort, socioeconomic status, race or ethnicity, and measures of educational attainment and family formation in young adulthood (Staff et al., 2010).

A study of eighth-grade Swiss students by Hirschi, Niles, and Akos (2011) investigated four factors (positive emotions, self-efficacy beliefs, social support, and goals) that encourage the development of career readiness over time in adolescents. The results reflected that all four factors predicted achievement in career readiness. Hirschi et al. claimed that their findings not only emphasized the importance of these factors in determining career readiness but also supported positive overall well-being of youth.

A longitudinal study by Rogers and Creed (2011), which drew upon social cognitive career theory, attempted to identify the most important predictors of high school student career planning and exploration. They reported that self-efficacy and career goals were associated with career planning and encouraged counselors "to design and implement interventions that focus on strengthening career decision confidence and increasing goal-setting behaviors during the final years of school" (p. 169).

Individualized learning plans. Ongoing career development helps students transition between secondary and postsecondary education and from education to work (Kalchik & Oertle, 2010). More than 20 states require high school students to develop an individualized learning plan to help them become more engaged in learning and prepared to transition to postsecondary education successfully (Solberg, Phelps, Haakenson, Durham, & Timmons, 2012). An individual learning plan, according to Solberg et al. (2012),

> is a personalized strategy that supports college and career readiness by assisting students in selecting courses that align to self-defined career goals, a process that facilitates career development and career exploration activities, and a portfolio document that organizes these course plans and career development activities as well as serves as a repository of record for personal accomplishments and workforce readiness skills. (p. 502)

Results of an earlier study by Budge, Solberg, Phelps, Haakenson, and Durham (2010) indicated that parents, teachers, and students perceived that individualized learning plans contributed to the selection of more demanding coursework; improved connections between the school, teachers, parents, and students; increased activities related to career exploration and postsecondary options; and increased academic motivation, goal-setting, and career-search skills. Kuijpers, Meijers, and Gundy (2011) found that students who make use of a personal-development plan take more action in

directing their careers than students who do not use such a plan. Frenette (2010) discovered 15- and 17-year-olds who knew that a university degree was required for their intended career were more likely to attend a university.

Withington et al. (2012) presented findings from an in-depth multiyear study of the South Carolina Education and Economic Development Act (2005), which was designed to increase student achievement, graduation rates, and college and career readiness through reforms similar to programs of study as defined by OVAE in its program-of-study design framework (Perkins Collaborative Resource Network, n.d.b). South Carolina's policy is considered to be innovative in that all students would be provided high academic standards, integrated academics and career and technical education, and greater career guidance. According to Withington et al., the policy calls for each student to "select a career cluster of interest and create an individual graduation plan" (p. 143) that maps out plans for high school coursework, work-based learning, postsecondary education, and career goals. Although the policy was not fully implemented, Withington et al. reported on that portion of the study that involved observations of overall policy implementation, differences in career and technical education course taking, changing attitudes toward career and technical education, and ways in which the policy is changing career counseling and guidance.

The comprehensive study focused on eight high schools at different levels of program-of-study implementation, yet several commonalties existed. Withington et al. (2012) noted that all schools had implemented some of the key elements of the Southern Regional Education Board's (n.d.) strategic reform model, High Schools That Work, prior to or during 2005. The schools were sharing information on career and technical education, career planning, individual graduation plans, career clusters, and work-based

learning with students, parents, and staff. Withington et al. found that the individual graduation-planning process increased counseling activities with students. During focus-group sessions with students, many indicated that their parents were involved in the individual graduation-plan process. Counselors reported an increase in career guidance activities, such as helping students with their career plans and individual graduation plans. Unfortunately, counselors also reported increased workloads as they continued to be pulled into student registration and scheduling, master course scheduling, and maintaining and preparing educational records and reports (Withington et al., 2012).

Qualitative analysis of data collected produced several themes related to an increased positive attitude toward career and technical education and career counseling since policy implementation. One significant theme that emerged was that individual graduation plan discussions about careers and programs of study facilitated a positive change in perceptions about career and technical education, leading to an increase in counselor awareness and greater promotion of career and technical education courses to students, parents, and staff. Another important theme was that the statewide policy's individual graduation plan increased the opportunities for counselors to work with more students. According to Withington et al. (2012), the individual graduation plan was seen as a "valuable tool for guiding students in developing career goals and developing strategies for achieving their goals" (p. 154).

Computer and Web-Based Career Information Systems

Computer-based career information and guidance systems had their beginnings shortly after a device known as a cathode ray tube was invented. This device, according to Harris-Bowlsbey and Sampson (2005), "allowed a system user to be physically separated from a computer to respond to scripted messages, thus simulating an interview"

(p. 48). Early developers of these systems saw this technology as an ideal resource to deliver career information and put career development theories to practice in an interactive format that appealed to users (Harris-Bowlsbey & Sampson, 2005; Imel, 1996). Gati (1994) described these systems as "an implementation of accumulated knowledge about career information and guidance that facilitates better career decision making" (p. 51). The use of this technology supported career counselors and end-users (Harris-Bowlsbey, 2003; Harris-Bowlsbey & Sampson, 2001).

Imel (1996) differentiated two types of computerized career systems: career information and career development. Computer-based career-information systems focused on information about career preparation, education and training, and labor-market information relating to occupations, specific jobs, work environments, job behavior, and job-search skills. Gore, Bobek, Robbins, and Shayne (2006) realized the important role career exploration plays in the process of developing a career. Computer-based career-development systems focused on teaching concepts related to career development. According to Harris-Bowlsbey and Sampson (2001), this process "includes learning about self through assessment, identifying occupational options, learning in detail about those options, valuing and prioritizing options, making tentative choices, and making a compatible educational or employment plan for implementation" (p. 253). System features included online assessments, delivery of a career-development process, searchable databases of information on occupations and colleges, and a user record that allowed counselors to monitor the student's activities (Harris-Bowlsbey, 2003; Harris-Bowlsbey & Sampson, 2001).

In the 1990s, the World Wide Web became a reality, and the first Web-based versions of career information and guidance systems appeared (Harris-Bowlsbey, 2003;

Harris-Bowlsbey & Sampson, 2005). The systems grew in popularity because of the quantity and quality of labor-market information and related resources available (Gore et al., 2006). New technology allowed for Web sites to be enhanced by combining multiple forms of media such as text, color, graphics, audio, and video. Capabilities increased while costs decreased. By the end of the decade, hundreds of Web sites provided career-related information. The acceptance of technology as a useful resource for working with students and adults in career planning increased (Harris-Bowlsbey, Dikel, & Sampson, 2002; Harris-Bowlsbey & Sampson, 2001, 2005).

By the mid-2000s, the leading career information and guidance systems were delivered via the Web (Gore et al., 2006). Most high schools included a computer-assisted career-guidance system as part of their career-guidance activities (Fowkes & McWhirter, 2007). During this time, a shift occurred in how services and software applications provided through the Web were being used, designed, and delivered. This change has been referred to as Web 2.0 because these applications were very different from previous generations of Web applications, now referred to as Web 1.0. Web 2.0 applications have a similar look and feel as desktop applications, increase usability, provide a superior user experience, and are more data driven and dynamic. Web 2.0 sites use information contributed by the users to build up the site (Fowkes & McWhirter, 2007; Ullrich et al., 2008; Wang & Zahadat, 2009). According to Wang and Zahadat (2009), Web 2.0 applications and services are in a "perpetual beta" stage of refinement and improvement (p. 80).

Many career-information systems now have an electronic portfolio feature to help students develop individualized learning plans (Solberg et al., 2012). Without it, students may develop a career goal but not clearly understand the career or educational pathways

needed to enter the career. In a qualitative study of career decision-making patterns, over 50% of the high school students who identified a career goal were unable to describe the content of the career or educational pathways needed to enter the career (Budge et al., 2010). Developing a plan, according to Solberg et al. (2012), "is predicated on having access to robust and engaging career information systems with capabilities to store the results of self-exploration, career exploration, and career planning and management activities" (p. 504).

WICareerPathways Web Site

The development of the WICareerPathways Web site at www.WICareerPathways .org supports high school implementation of programs of study in Wisconsin and Wisconsin's comprehensive school-counseling model. The Web site is an engaging career-information system organized by the career clusters framework through crosswalks matching SOC and CIP codes. Programs of study form the basis of student academic career plans on the Web site. The executive director of NASDCTEC (personal communication, October 11, 2012) stated, "Through programs of study, students are able to select their individual plans based on their personal interests and have an understanding of what academic and technical demands they must meet in order to prepare for the workforce."

Utilizing a dynamic data-driven Web 2.0 application, the development of secondary-to-postsecondary programs of study are integrated with individualized academic and career planning within Wisconsin's career clusters framework. The Web 2.0 technology aids secondary educators in the development of secondary-to-postsecondary programs of study and provides a graphical user interface to display the programs. Programs of study are published from a repository of programs developed

throughout Wisconsin. The Web site assists middle and high school students in career exploration and academic planning by providing access to careers, postsecondary options in Wisconsin, and high school programs of study. The Web 2.0 technology allows students to convert electronically a program of study developed by their high school to an academic career plan that can be personalized based on their academic needs and career interests. Middle and high school counselors can guide students for success in careers and college by providing them with access to school-wide and individual student Web-site activity. Career-prep administrators manage high school users and technical college programs on the Web site and can use it as a resource to connect with and support high schools in their technical college district.

Professional Evaluation Standards

The Joint Committee on Standards for Education Evaluation (JCSEE, 2011) published widely recognized evaluation standards grouped into four elements: utility, feasibility, proprietary, and accuracy. Utility standards center on providing stakeholders with information about processes and products to meet their needs. A useful evaluation identifies important strengths and weaknesses of the evaluand and effectively reports and applies the findings (Stufflebeam & Shinkfield, 2007). The intent of feasibility standards is to increase the effective and efficient use of resources (JCSEE, 2011). According to Stufflebeam and Shinkfield (2007), an evaluation is feasible if it is "workable in real-world settings" (p. 88). Propriety standards were developed to respect and protect the rights of the participants and ensure the evaluation is conducted legally, ethically, and fairly in addressing stakeholder needs. Accuracy standards set forth expectations that the evaluator will gather sound information, analyze and interpret it correctly, and report valid and reliable findings (JCSEE, 2011; Stufflebeam & Shinkfield, 2007). The JCSEE

statements on evaluation accountability encourage documentation and a meta-evaluative point of view.

Evaluation Approaches

Fitzpatrick, Sanders, and Worthen (2011) defined *evaluation* as "the identification, clarification, and application of defensible criteria to determine an evaluation object's value (worth or merit) in relation to those criteria" (p. 7). Numerous evaluation approaches exist today. A study of alternative evaluation approaches helps evaluators consider, choose, and apply the most appropriate approach for an evaluation (Fitzpatrick et al., 2011; Stufflebeam & Shinkfield, 2007). Fitzpatrick et al. conducted a summary and comparative analysis of four broad categories of evaluation approaches. Stufflebeam and Shinkfield (2007) described 26 evaluation approaches. This section explores seven distinct evaluation approaches, each focused on different concepts.

Objectives-based evaluation. Evaluators using an objectives-based evaluation specify the purposes of the activities and then determine if the objectives were achieved. Provus (1971) developed the discrepancy model, which uses an ongoing information-management process designed to watch over program development. This model was one of the earliest evaluation approaches and was originally designed to facilitate the development of programs in large school systems. The discrepancy model follows a three-step process: (a) agree on the objectives; (b) determine if there is a discrepancy between the program objectives and performance; and (c) use data about the discrepancies to improve, maintain, or end the program.

The discrepancy model outlines four required stages and an optional fifth stage. In the initial definition stage, the researcher identifies the objectives of the program and then determines if the program had been delivered as intended. If discrepancies are found, the

installation stage involves changing the definition of the program to match the way it is being utilized or adjusting the program to match its definition. The process stage follows and involves gathering data from program participants to decide whether behaviors changed as expected. If certain gains are not reached, related activities could be conducted to change the program (corrective actions) or the program could be discontinued. The evaluator would determine whether the immediate outcomes of the project have been achieved during the fourth stage, called the product stage. The researcher could undertake the optional fifth stage, which involves a cost-benefit analysis and includes comparing the results with analyses of similar programs (Fitzpatrick et al., 2011).

An evaluation by Aloo, Simatwa, and Nyang'ori (2011), which was guided by the discrepancy model, investigated the implementation of a school-based teacher-recruitment policy in public secondary schools in Kenya's Nyando District. The policy was designed to ensure equitable distribution of teachers and efficiency in recruitment and retention of teachers in public secondary schools. The evaluators looked for gaps between what was intended by the policy and what actually occurred. The provincial director of education and 49 head teachers participated in a quantitative survey research design. The provincial director was interviewed in depth to obtain qualitative data. Data obtained from the head teachers and provincial director were analyzed to determine teacher distribution trends. The evaluation revealed that the teacher-recruitment policy did not achieve its intended objectives. Aloo et al. concluded that teacher retention across schools had improved but not at an acceptable level of efficiency or effectiveness. Several recommendations were made aimed at helping policymakers improve teacher recruitment.

Logic models. One of the shortcomings of objectives-oriented evaluation is that it does not flush out information about how a program achieved or failed to achieve its objectives. Logic models were designed as a learning and management tool to fill in the information between the program and it objectives (Fitzpatrick et al., 2011, W. K. Kellogg Foundation [Kellogg], 2004). Logic models present stakeholders with a graphic or tabular visual representation depicting how a program should work to reach intended outcomes (Fitzpatrick et al., 2011; Gugiu & Rodriguez-Campos, 2007; Kellogg, 2004; McLaughlin & Jordan, 1999). Logic models are also helpful to stakeholders in the planning, implementation, and evaluation of programs (Kellogg, 2004).

The typical elements of a logic model include program inputs, activities, outputs, and short- and long-term outcomes (Fitzpatrick et al., 2011; Gugiu & Rodriguez-Campos, 2007; Kellogg, 2004). A logic model reflects the relationship of the program components to each other and as a whole. Program inputs are the resources needed to achieve program outcomes. Inputs may include staff, operational and capital budgets, and the organizational or community support needed to run the program. Program activities are the key components of the program. Activities are what the staff does with available resources to plan, implement, and run the program. Activities may include products and services such as curriculum, newsletters, promotional materials, education and training events, counseling, and screening. The direct results of activities are program outputs. Outputs are the performance results of the products and services of the program and reflect the reach of the program to the intended participants. Program outcomes are specific changes in participants' attitudes, behavior, knowledge, or skills as a result of the program activities (Fitzpatrick et al., 2011; Gugiu & Rodriguez-Campos, 2007; Kellogg, 2004).

Sandoval et al. (2012) reported the development of an evaluation approach based on a logic model for community-based participatory research (CBPR) projects. The logic model was used to frame the current state of CBPR and describe how projects could be implemented in various locations. Major components of the model included contexts, group dynamic processes, intervention or research design, and outcomes. The logic model was then used by Sandoval et al. to provide an evaluation framework leading to the future direction for research on what makes up a successful CBPR. CBPR instruments and measures located through a comprehensive literature search were organized based on the logic model, resulting in a large list of available research tools categorized by context, group dynamics, and outcomes (Sandoval et al., 2012).

Theory-based evaluation. The central element of theory-based evaluation is to begin with a theory of why the program achieved its intended outcomes (Fitzpatrick et al., 2011; Stufflebeam & Shinkfield, 2007). This approach involves a process that relies on stakeholder input, existing theories, and the evaluator's knowledge and expertise. The evaluators set out to develop a theory or select an existing theory to guide the evaluation. One of the main procedures is the development of a visual model that presents the details of the program's reasoning. According to Stufflebeam and Shinkfield (2007), this is not the same as a logic model. The logic model follows with program input once the theory has been developed. An alternative procedure is grounded theory, a qualitative process wherein a theory emerges from analysis of actual program evaluations that explains the reasoning of the programs (Creswell, 2008; Stufflebeam & Shinkfield, 2007).

Rollison et al. (2012) based an evaluation of the federal Safe Schools/Healthy Students (SS/HS) initiative on a program theory model. SS/HS is a complex multifaceted grants program designed to create healthy and safe school climates. A visual model of the

program theory was developed with the assistance of federal program staff and based on a literature review. According to Rollison et al., the SS/HS hypothetical program model reflects the "initiative's unique approach to changing how communities plan and implement youth-related services" (p. 274). Core components of the model include the pregrant environment, grant operations, near-term outcomes, and long-term outcomes. The model guided the development of the evaluation questions. Qualitative and quantitative data were collected and analyzed based on the model's components. Rollison et al. concluded that the evaluation findings were consistent with the program theory model, that is, the program assisted grantees and policymakers in making data-driven decisions and communicating the success of the initiative to the public. The model continues to be used in ongoing evaluations of the SS/HS initiative.

Consumer-oriented evaluation. The consumer-oriented approach has been used by government agencies and independent consumer advocates to provide information on products (Fitzpatrick et al., 2011). This approach requires the evaluator to first understand the product, then establish the criteria to judge its value or worth, and finally develop the standards to measure and judge the product compared to its competitors (Fitzpatrick et al., 2011; Stufflebeam & Shinkfield, 2007). Stufflebeam and Shinkfield (2007) affirmed goal-free evaluation for its usefulness in implementing consumer-oriented approaches as it adds sources of evaluation information and is appreciated by stakeholders. Goal-free evaluation offers a practical approach to increase objectivity by reducing the bias that comes from knowing the expected outcomes (Fitzpatrick et al., 2011). Goal-free evaluation involves the evaluator investigating all outcomes of a program, including those that were not anticipated or would be overlooked by focusing on only stated goals (Fitzpatrick et al., 2011; Stufflebeam & Shinkfield; 2007).

Ross, Narayanan, Hendrix, and Myneni (2011) chose a consumer-oriented approach to evaluate a National Science Foundation grant-funded project in computer science at Auburn University known as studio-based instruction. Studio-based instruction involves assigning problems for which there are multiple solutions, working in pairs or large groups, and critiquing solutions by peers. This approach was chosen because it aligned well with the evaluation purpose. The studio-based instruction program work group defined program goals but adhered to the consumer-oriented approach by recognizing that attainment of goals does not necessarily address the quality of the program.

Decision-oriented evaluation. Decision-oriented evaluations focus on the role of the evaluation to improve the quality of decisions made. The main purpose of the decision-oriented context, input, process, and product (CIPP) model developed by Stufflebeam (1971) is to provide useful information to help program providers improve services and deliver them effectively and efficiently to meet the needs of beneficiaries. The model emphasizes involving stakeholders, strengthening and improving the program, conducting the evaluation objectively, and meeting professional standards of evaluation to facilitate decision making (Stufflebeam & Shinkfield, 2007).

The CIPP model takes a systems approach for improvement of the evaluand and includes four components of decisions at the formative and summative stages (Fitzpatrick et al., 2011; Stufflebeam & Shinkfield, 2007). The first component, known as context, centers on studying the context for a program that has not yet been planned at the formative stage. A summative evaluation compares program goals and priorities to assessed needs, problems, and assets (Fitzpatrick et al., 2011).

The second component of the CIPP model is known as input evaluation. At the

formative stage, input evaluation assists program administrators in selecting strategies related to resolving problems and deciding on how to implement those strategies. A summative evaluation compares the program's strategy, design, and budget to those of critical competitors and the targeted needs of beneficiaries (Fitzpatrick et al., 2011).

Process evaluation is the third component of the CIPP model. The evaluation at the formative stage will lead to decisions on how to modify its implementation. Throughout this stage, procedures can be monitored, adapted, and refined. A summative evaluation fully describes the program's processes and costs and compares them with the designed processes and costs (Fitzpatrick, et al., 2011).

The fourth component of the CIPP model is product evaluation. The evaluation at this stage compares goals to intended needs and results of competitors as well as an analysis of results against context, input, and process assessments. The CIPP model follows logical steps, starting with collecting information; then organizing, analyzing, and reporting information; and finally, administering the evaluation (Fitzpatrick et al., 2011).

Zhang et al. (2011) utilized the CIPP model as the framework to guide the planning, implementation, and assessment of a teacher-education service-learning tutoring project. The context-evaluation component helped identify the needs of the university initiating the project, preservice elementary education teachers, and at-risk readers. Input evaluation was collected from stakeholder meetings, an extensive literature review, and experts prior to implementation of the project. Progress was monitored using process evaluation through project updates, student observations, faculty debriefings, and preservice teacher self-reflection and reports.

Product evaluation focused on two areas: the needs of preservice teachers and

achievement of at-risk readers. Various assessments were utilized to measure preservice teachers' learning and at-risk readers' achievement. The results indicated that preservice teachers demonstrated a higher quality of academic work than preservice teachers who were not involved in service learning. At-risk readers also benefited from the project (Zhang et al., 2011).

Responsive evaluation. Stake (1973) introduced responsive evaluation as an alternative to the existing evaluation approaches, which typically follow a prescribed plan and predefined objectives. The role of the evaluator is that of a facilitator to assist others in reaching their own judgments. Communications between the evaluator and participants are informal, frequent, and ongoing. Responsive evaluation incorporates multiple views of the program as seen by the practitioners involved; natural, flexible methods allowing adaptation as the evaluation progresses; and specific knowledge, theories, and particulars of an individual program rather than generalizations. Case studies and qualitative methods are the preferred methodologies. Reports present rich data in narrative form and convey the complexity of the program (Fitzpatrick et al., 2011).

A study by Durdella (2010) examined responsive evaluation as a model for instructional program evaluation in two community colleges. The two programs were selected as cases because both served underrepresented and educationally disadvantaged students, the majority of whom were Latino students. Interviews were held with students, program faculty, program staff, and college administrators. Selected students also wrote journal entries. The data from each program were organized separately. Program A staff uncovered two serious issues relating to a lack of support by administrators and faculty outside the program. Despite students reporting positive experiences and program faculty conveying passion for the program, resistance to the program increased. Results of

Program B revealed a well-developed and supported program. Student achievement and development were identified as the most important outcomes to examine. Unlike Program A, Program B staff constructed a communication strategy among themselves, instructors, and students. Durdella concluded that responsive evaluation uncovered issues that normally would not be addressed in an objectives-based evaluation.

Developmental evaluation. According to Patton (1994, 1996, 2011), developmental evaluation supports innovative programs in their ongoing development and improvement. The approach may involve engaging participants in setting and achieving goals. However, participants realize that issues may arise along the way, and they will want to explore possible solutions. They may move in a different direction based on changing conditions, which may be different for different participants. Common approaches to evaluation, such as formative evaluation, which focuses on assisting programs while in the developmental stage, and summative evaluation at the end of the development, do not apply (Fitzpatrick et al., 2011, Patton, 1996; Stufflebeam & Shinkfield, 2007). Those involved with developmental evaluation never expect to reach summative evaluation, according to Patton (1996), because "they aspire to continuous progress, ongoing adaptation, and rapid responsiveness" (p. 135). They expect to be in a constant state of ongoing development and change wherein the evaluation supports long-term development, improvement, and changes to the program due to a changing environment. Improvements reflect the changing environment rather than a correction of prior actions. Patton (2011) believed in a wide variety of methodological options and design choices based on the utility needs of intended users.

The evaluator becomes part of the team to assist in monitoring processes and outcomes in a changing environment. Patton (1996) described developmental evaluation

as a relationship rather than an evaluation model. The team, which includes the evaluator, judges the program and decides how to move forward with the next developmental stage. The evaluator's main role on the team is to facilitate team discussions by asking evaluative questions, gathering data, and drawing out logic to assist in decision making. According to Patton (1996), "much of the impact of evaluation comes from the process of engaging in the evaluation, not from the findings" (p. 136).

Poth, Pinto, and Howery (2012) reported on a developmental evaluation of a 3-year educational technology leadership program. Developmental evaluation supported the client's need to develop the role of the staff leading the educational technology program and incorporate emerging school practices for managing rapid technology changes. During the evaluation, the project team and evaluation team collaborated to build trust to allow them to identify information needs, access data, and use the findings to inform project decisions. Challenges in introducing developmental evaluation were overcome once developmental evaluation was understood and boundaries of the evaluation team's role were defined.

During the evaluation, the evaluation team underestimated the challenges facing the staff leading the educational technology program in using technology to collect project data. This issue was addressed as the evaluation team began using adaptive communication strategies with the project team. Poth et al. (2012) concluded that (a) greater attention in how to establish and maintain trust between the evaluation team and project team is needed so that issues can be addressed through open and honest communications, (b) an evaluation team member who is technologically savvy and understands the technological environment is helpful, and (c) building capacity to have greater comfort with complexity is necessary as all developmental evaluations involve

change.

Previous evaluations of computer-assisted career-planning systems. Fowkes and McWhirter (2007) explored previous evaluations of the use of computer-assisted career guidance systems in middle and secondary education and pointed out that these systems are typically used in conjunction with other career interventions, such as individual or group counseling, and individual discovery through activities, such as self-exploration, course work, or work-based learning. Therefore, little is known about how career information and development systems actually achieve specific outcomes. Although a logic model (see Appendix B) may be useful in identifying desired outcomes, those outcomes may not be solely attributable to a resource such as the WICareerPathways Web site. Evaluation of such systems has been focused on attractiveness, effectiveness, or user satisfaction rather than college and career-related outcomes (Fowkes & McWhirter, 2007). Harris-Bowlsbey et al. (2002) suggested criteria, such as overall impressions and presentation, authority, usability, content, information maintenance, availability, and cost, for judging online career-counseling resources.

Summary

Over a century ago, vocational education was separated from academics at the secondary level. This divide was upheld through national legislation beginning with the Vocational Education Act of 1917. More recent legislation focused on integrating academic and career and technical education, first through tech-prep initiatives and then through programs of study as set forth in Perkins IV (2006). The National Career Clusters™ Framework provides the organizational structure for programs of study (ACTE, 2010; NASDCTEC, 2013a). National and state efforts, such as OVAE's design

framework (Perkins Collaborative Resource Network, n.d.b) and the WDPI and WTCS (2011) guide, supported the development and implementation of programs of study.

The literature review provides evidence that students benefit from taking career and technical education in high school. It tends to increase attendance and improve labor-market outcomes (Bishop & Mane, 2004). Even gifted and talented students who are often overlooked for career and technical education benefit (Gentry et al., 2007). The integration of career and technical education with academic courses leads to positive postsecondary outcomes (Fletcher & Zirkle, 2009). The study by Packard et al. (2012) reflected that over one fourth of participants regretted not taking advanced math and sciences courses in high school. Students involved in career and technical education plus college-level math and physics reported confidence in their ability to be accepted into college (Bishop-Clark et al., 2010). The program-of-study concept is a new reform initiative, but early results of a study by Alfeld and Bhattacharya (2012) pointed out that most students believed they were more engaged in school and prepared for a career by partaking in a career-focused program of study. Castellano et al. (2012) sought to determine if programs of study improved student engagement and achievement in two school districts. In both districts, students involved in programs of study were more likely to be on track to graduate than students not participating in programs of study.

At first, vocational guidance was assigned to teachers, but later school counselors provided guidance. Since the 1970s, school counseling shifted to a comprehensive program of guidance and counseling that focuses on the development of the whole student in the academic, career, and social or personal domains (ASCA, 2011; Gysbers, 2001). OVAE recognized that an important component of a rigorous program of study is counseling and guidance (Perkins Collaborative Resource Network, n.d.b). Based on the

literature review, most students expressed a need for career exploration and college-planning information, but students in several studies downplayed the role of the school counselor in career planning. This may be due to the lack of contact with a school counselor rather than a reflection on the counselor (Bardick et al., 2004; Coogan & DeLucia-Waack, 2007; Gibbons et al., 2006).

No one theory covers all aspects of career development, but two theories, Super's (1990) life-span life-space theory and the social cognitive career theory framework of Lent and Brown (1996), emphasize the importance of career exploration and preparation during adolescence. Career development is a continuous process, and career planning is greater for students with high levels of career decision-making confidence, work experience, and academic achievement (Creed et al., 2007; Skorikov, 2007). Personality, positive emotions, social supports, and goals also play a role in adolescent career development (Hirschi et al., 2011).

Goal setting, specifically, will result in greater career planning (Rogers et al., 2008). Students who make use of a personal-development plan take more action in directing their careers than students without a plan (Kuijpers et al., 2011). Solberg et al. (2012) highlighted that not only students but parents and teachers perceived that individualized learning plans increased activities related to exploring postsecondary options and careers and led to increased academic motivation as well as development of goal-setting and career-search skills. Withington et al. (2012) discovered that an individual graduation planning process increased parental involvement and career-guidance activities with school counselors. The process also improved attitudes toward career and technical education.

Career exploration plays an important role in developing a career. Popular

computer-based systems provide information about career preparation and development, education and training, and labor-market information and include online assessments, searchable databases, and student activity records that can be monitored by counselors. Some use Web 2.0 technology that offers a superior and dynamic user experience. Many now have an electronic portfolio feature to help students develop individualized learning plans (Solberg et al., 2012).

The development of the WICareerPathways Web site supports high school implementation of programs of study in Wisconsin and Wisconsin's comprehensive school counseling model. The Web site is an engaging career-information system organized by the career clusters framework. Career-prep administrators manage high school users and technical college programs on the Web site and can use it as a resource to connect with and support high schools in their technical college district. The Web 2.0 technology aids secondary educators in the development of secondary-to-postsecondary programs of study and allows students to convert electronically a program of study developed by their high school to an academic career plan that can be personalized based on their academic needs and career interests and provides middle and high school counselors with access to school-wide and individual student Web-site activity.

The literature review uncovered several evaluation models for consideration. Objectives-based evaluation determines if the evaluand's objectives were achieved (Fitzpatrick et al., 2011). Logic models are visual tools that help stakeholders plan, implement, and evaluate programs (Fitzpatrick et al., 2011; Gugiu & Rodriguez-Campos, 2007; Kellogg, 2004; McLaughlin & Jordan, 1999). Theory-based evaluations begin with an existing theory or develop a theory to guide the evaluation process (Fitzpatrick et al., 2011; Stufflebeam & Shinkfield, 2007). A consumer-oriented evaluation approach

provides information on how a product measures up compared to its competitors (Fitzpatrick et al., 2011). The most well-known decision-oriented evaluation approach is Stufflebeam's (1971) CIPP model, which helps program providers improve the efficiency and effectiveness of services delivered to beneficiaries. Responsive evaluation approaches use case studies and qualitative methods to incorporate multiple views of the program. The evaluator relies on flexible approaches that can be adapted as the evaluation progresses and specific knowledge of an individual program, not generalizations (Fitzpatrick et al., 2011). Developmental evaluation supports innovative programs that stakeholders expect to be in a constant state of ongoing development and change (Patton, 2011). Previous evaluations of computer-assisted career-guidance systems have typically been carried out in conjunction with other career interventions, making it difficult to know how the systems actually achieve specific outcomes. Evaluations have focused on attractiveness, effectiveness, or user satisfaction (Fowkes & McWhirter, 2007).

Evaluation Framework

Numerous evaluation approaches exist today. Following a critique and careful consideration of seven evaluation approaches, the developmental evaluation approach was chosen (Patton, 1994, 1996, 2011). One reason was that the concept of programs of study was a relatively new and emerging reform initiative, especially in Wisconsin where each school district made its own decisions about development and implementation of programs of study (Alfeld & Bhattacharya, 2012). Early on, a central Web site organized by career clusters and pathways was seen as an essential resource for Wisconsin stakeholders. Since the initial planning stage, the Web site evolved into a dynamic data-driven 2.0 Web-based resource that aids secondary educators in the development of

secondary-to-postsecondary programs of study, assists middle and high school students in career exploration and academic planning, and helps middle and high school counselors guide students for success in careers and college. Career-prep coordinators serve as administrators of their specific technical college's programs and manage high school users on the Web site.

The WICareerPathways Web site is new and evolving, and the project team is open to exploring new possibilities to further its development. The Web site has been in a constant state of development, expansion, upgrade, and improvement since its inception. There is no expectation to ever reach summative evaluation because those involved in the project, according to Patton (1996), "aspire to continuous progress, ongoing adaptation, and rapid responsiveness" (p. 135). Identifying the satisfactory components as well as unmet needs as perceived by the stakeholder groups who use the Web site produced data that led to the development of a comprehensive plan for ongoing development and improvement of the WICareerPathways Web site.

Research Questions

The purpose of this researcher's evaluation was to develop a plan for the ongoing development of the WICareerPathways Web site. This researcher asked the following research questions:

1. What are the expected outcomes of the WICareerPathways Web site?

2. What are the satisfactory components of the WICareerPathways Web site as reflected in data collected by the researcher from technical college career-prep administrators, middle and high school counselors, and high school program-of-study builders?

3. Which stakeholder needs are not being met by the WICareerPathways Web site

as reflected in the data collection by the researcher from technical college career-prep administrators, middle and high school counselors, and high school program-of-study builders?

4. Based on the data collected, what is the researcher's comprehensive plan for ongoing development and improvement of the WICareerPathways.org Web site?

Chapter 3: Methodology

Program

The WICareerPathways Web site aids secondary educators in the development of secondary-to-postsecondary programs of study, assists middle and high school students in career exploration and academic planning, and helps middle and high school counselors guide students for success in college and careers by providing them with access to school-wide and individual student Web-site activity. Career-prep coordinators serve as administrators of their specific technical college's programs and manage high school users on the Web site. The Web site was developed in phases following a year of planning during the 2008-09 fiscal year.

The initial focus of the WICareerPathways Web site was to organize occupations as well as postsecondary programs and majors of Wisconsin's three educational sectors by career clusters and pathways. Administrative tools were created to assist career-prep coordinators in organizing and displaying technical college programs as well as managing high school accounts. The first phase, which occurred during the 2009-10 fiscal year, also included the development of a Web-based interactive tool to assist secondary educators in the development of programs of study linking secondary coursework to postsecondary educational programs.

The second phase, which occurred during the 2010-11 fiscal year, called for the development of specific features aimed at middle and high school students. By setting up an account, students can log in to a secure portal; take the career cluster interest inventory; and explore careers, postsecondary programs, and programs of study at their high school based on inventory results. Students can select a program of study and convert it to their individual academic career plan, which they can then personalize to

meet their academic and career needs.

During the 2011-12 fiscal year, the third phase was developed based on requests received from high school counselors to access student activity on the WICareerPathways Web site. Viewing student Web site activity would help them guide students as they explore careers, high school programs of study, and postsecondary programs and majors.

Participants. Stakeholder participants from three target populations participated in the study: technical college career-prep coordinators, high school program-of-study builders, and middle and high school counselors and advisers. This section provides a brief description of the three target populations, an explanation of how the stakeholders used the Web site, and the sampling strategy for each.

Wisconsin technical college career-prep coordinators perform administrative duties on the WICareerPathways Web site through a secure portal. Career-prep coordinators are provided access to the secure portal by the web developer who assigns a username and password. The username and password are communicated to the career-prep coordinator via an automated e-mail generated from info@wicareerpathways.org. Once career-prep administrators log in using their e-mail address as their user name and password, they enter the portal wherein they can manage college programs and high school accounts. Career-prep administrators maintain an online database of current associate degree, technical diploma, and apprenticeship programs offered by their technical college on the Web site. The career-prep administrators assign programs into one or more career pathways. By adding the universal resource locator address of a program Web page located on their college Web site, program information within a career pathway is linked directly to the college Web page (see Figure 6).

In addition to this college-level administrative responsibility, career-prep

administrators create accounts for secondary program-of-study builders and middle and high school counselors within their technical college district. Career-prep administrators also promote the WICareerPathways Web site and assist program-of-study builders, middle and high school counselors and advisers, and middle and high school students in its use. They may also monitor Web-site activities in their districts.

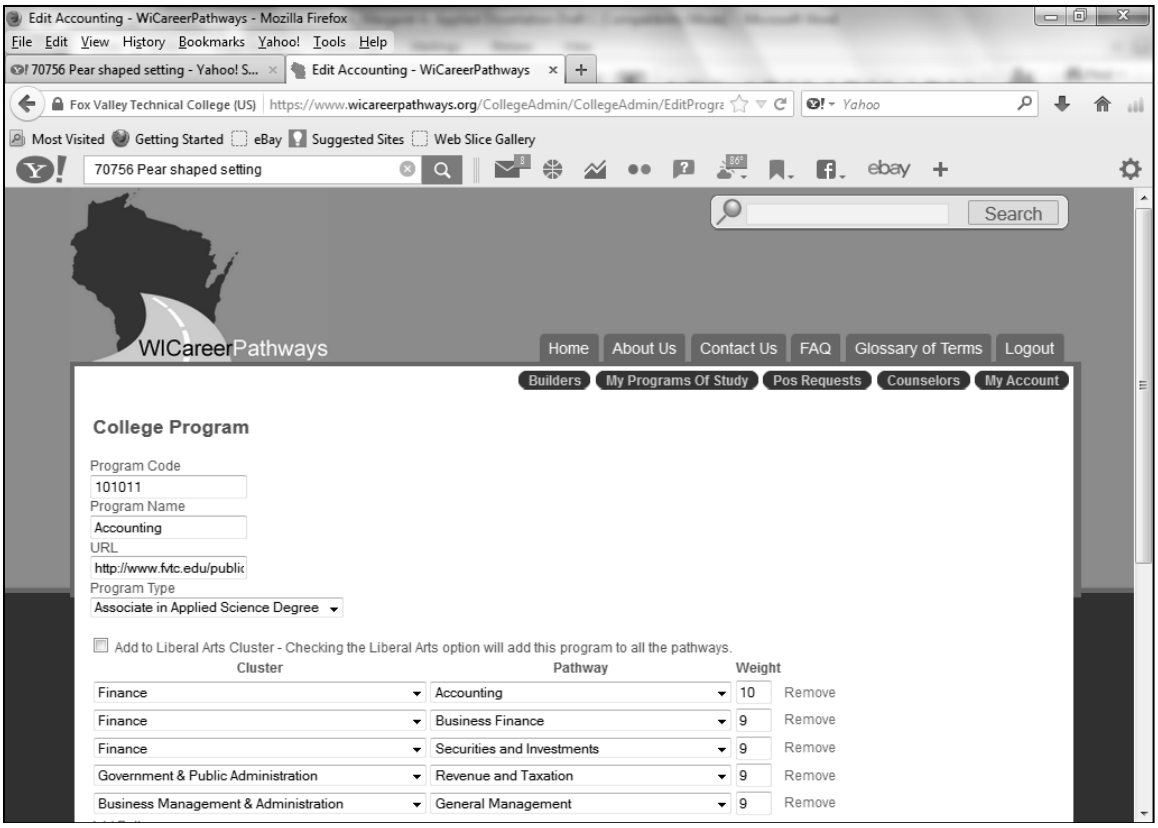


Figure 6. College program data-entry Web page.

All 15 technical college career-prep coordinators who fulfill the administrative role on the WICareerPathways Web site were asked to participate in the first phase of the study. This researcher requested the Web site's Web developer to provide a list of the e-mail addresses of the career-prep administrators. A small subsample of five career-prep administrators agreed to participate in the second phase.

Based on local control at the school district level, administrators at each high

school determine who will be assigned the counselor role on the WICareerPathways Web site. In addition to counselors, teachers who advise students in career exploration may have access to the counselor site.

Middle and high school counselors and advisers can view school-wide data as well as individual student profiles and academic career plans on the Web-site counselor and adviser portal. To gain access to this information, middle and high school counselors and advisers are directed to contact the career-prep administrator at their local technical college. A Contact Us button can be accessed from the Web site's home page. Once a counselor and adviser account has been established by the career-prep administrator, an automated e-mail from info@wicareerapathways.org with log-in information is sent to the counselor. The counselor and adviser can then log in using his or her e-mail address and password to access the school-wide data and individual student profiles within his or her school district. Counselors and advisers may also guide students as they use the student site, help students create an online academic career plan, and share the student site during student or parent conferences.

This researcher requested the Web developer to generate an e-mail list of high school educators who have a counselor account and randomly choose by computer approximately 50% of the 400 middle and high school counselors and advisers who have an account to access the counselor and adviser portal on the WICareerPathways Web site. A random probability sample of 55% or 221 middle and high school counselors and advisers were asked to participate in this study. A small subsample of three counselors and advisers agreed to participate in the second phase.

Program-of-study builders were participants. Based on local control at the school-district level, administrators at each high school determine who will input programs of

study onto the WICareerPathways Web site. Some district administrators assign a single staff person; others have multiple staff. Program-of-study builders could be high school teachers, counselors, or administrators. The Web site offers a Web-based interactive tool to assist builders in the mapping of programs of study within a secure environment. To access the Web-based interactive tool, the high school program-of-study builder is prompted to contact the career-prep administrator at the local technical college. A Contact Us button can be accessed from the Web site's home page or login page. Once a program-of-study builder account has been established by the career-prep administrator, an automated e-mail from info@wicareerapathways.org with log-in information is sent to the program-of-study builder. A builder can then log in using his or her e-mail address and password to begin building a program of study.

Programs of study may be saved in draft form or published (see Figure 7). If saved, the program of study is stored on the WICareerPathways Web-site server and available to the builders at that high school at any subsequent time to edit, delete, or publish. If published, the program of study is available on the public portion of the Web-site's homepage. An online searchable repository of all the published programs of study serves as a resource for other program-of-study builders to view similar programs of study and connect with other builders.

This researcher requested the Web site's web developer to generate an e-mail list of high school educators who had a program-of-study builder account and had built at least one program of study and randomly choose by computer approximately 25% of the 1,759 program-of-study builders. A random probability sample of approximately 22% or 384 secondary program-of-study builders were asked to participate in the first phase of this study. A small subsample of four program-of-study builders who participated in the

first phase of the study agreed to participate in the second phase.

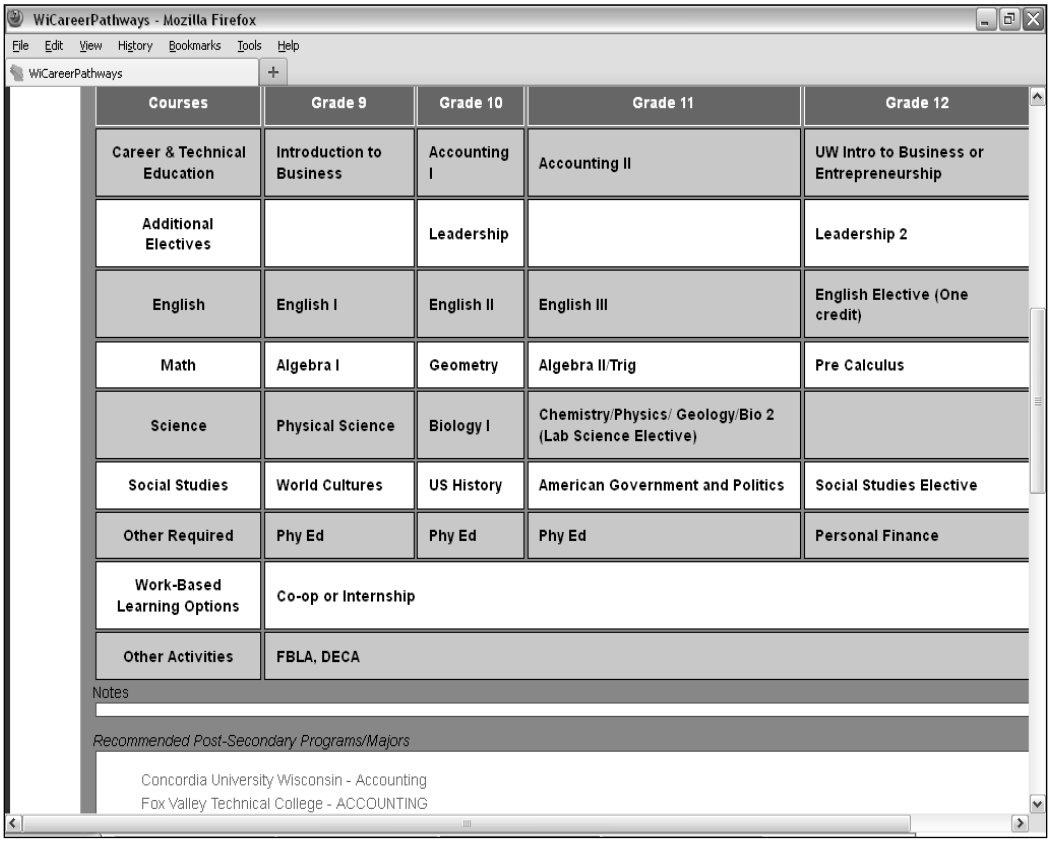


Figure 7. Published program of study.

The various components of the WICareerPathways Web site are integrated within the career cluster framework. The college programs posted by the career-prep administrators can become part of a program of study if selected by the program-of-study builder while utilizing the interactive builder tool. The programs of study are displayed on the student Web site, and students can convert a published program of study into an academic career plan. Counselors and advisers can view students' academic career plans. This integration led the researcher to seek a balanced mix of 9 to 12 career-prep administrators, program-of-study builders, and counselors and advisers to be represented as focus-group session participants.

Evaluation Model

The developmental-evaluation approach was chosen (Patton, 1994, 1996, 2011). The concept of programs of study is a relatively new and emerging reform initiative, especially in Wisconsin where each school district makes its own decisions about development and implementation of programs of study (Alfeld & Bhattacharya, 2012). Early on, a user-friendly Web site organized by career clusters and pathways was seen as an essential resource for Wisconsin stakeholders. Since the initial planning stage, the Web site has evolved into a dynamic data-driven 2.0 Web-based resource that aids secondary educators in the development of secondary-to-postsecondary programs of study, assists middle and high school students in career exploration and academic planning, and helps middle and high school counselors guide students for success in college and careers. Career-prep coordinators serve as administrators of their specific technical college's programs and manage high school users on the Web site.

The WICareerPathways Web site is new and evolving, and the project team is open to exploring new possibilities to further its development. Since its inception, the Web site has been in a constant state of development, expansion, upgrade, and improvement. According to Patton (1996), there is no expectation to ever reach summative evaluation because those involved in the project "aspire to continuous progress, ongoing adaptation, and rapid responsiveness" (p. 135). Identifying the satisfactory components as well as unmet needs as perceived by the stakeholder groups who use the Web site produced data that led to the development of a comprehensive plan for ongoing development and improvement of the WICareerPathways Web site.

Data-Collection Instruments

This section describes the data-collection instruments developed for this study.

Three online surveys were administered using the survey software SurveyMonkey© Gold (SurveyMonkey©, n.d.). A focus-group session was conducted using a semistructured interview protocol.

Surveys. A survey can be used as a means to collect information from individuals to describe, compare, or explain their knowledge, attitudes, and opinions about any topic. Lynch and Horton (2008) suggested surveys are useful for collecting information from Web-site users. According to Sue and Ritter (2012), "online and mobile survey research offers the promise of speed, economy, and improved data quality" (p. 212). The main objective of a Web-site survey is typically to determine which features are used most often and assess the satisfaction derived from using them (Lynch & Horton, 2008).

Creating a user-friendly Web site was one of the WICareerPathways Web-site project's earliest goals. Creswell (2008) advised that designing a survey instrument is more difficult than using an existing instrument. This researcher conducted a search for existing survey instruments and reviewed several questionnaires. The Software Usability Measurement Inventory and Web Site Analysis and Measurement Inventory (Stone, Jarrett, Woodroffe, & Minocha, 2005) were designed to measure the usability of a Web site. Tullis and Stetson (2004) compared five questionnaires for assessing Web-site usability: (a) System Usability Scale, (b) Questionnaire for User Interface Satisfaction, (c) Computer System Usability Questionnaire, (d) Words (adapted from Microsoft's Product Reaction Cards), and (e) their own questionnaire. Lund (2001) developed a practical survey tool called the Usefulness, Satisfaction, and Ease of Use (USE) Questionnaire with the goal of making the items as simply worded and general as possible. Following each study, the findings reflected that users were primarily evaluating products based on usefulness, satisfaction, and ease of use (Lund, 2001).

This researcher appreciated the simply-worded items on the USE Questionnaire (Lund, 2001) and sought permission to use and modify it. The manager of STC Usability and User eXperience Community and author of an article on the *STC UUX Community Newsletter* was contacted by e-mail on September 30, 2012, with a request for information regarding the USE Questionnaire. The STC Usability and User eXperience Community manager responded on October 1, 2012, via e-mail that she would send a query to Mr. Lund. No response was received from Mr. Lund. This researcher then mailed Arnold M. Lund a letter with draft surveys enclosed via U.S. Post Office on February 4, 2013. On February 13, 2013, the letter was returned to sender as not deliverable as addressed with an unable-to-forward message.

Surveys were created by this researcher modeled on Lund's USE Questionnaire. They contained simple and straightforward items relating specifically to the WICareerPathways Web site using the survey software SurveyMonkey Gold: (a) WICareerPathways.org Career-Prep Administrator Survey (see Appendix C), (b) WICareerPathways.org Program-of-Study Builder Survey (see Appendix D), and (c) WICareerPathways.org Counselor and Adviser Survey (see Appendix E).

The survey instruments were designed to collect quantitative and qualitative data. Multiple-choice questions were asked of the program-of-study builders and counselors and advisers to obtain demographic information relating to the respondents' type of school, gender, and age. The next section of the online survey instruments includes items with a 5-point Likert rating scale (*strongly disagree, disagree, undecided, agree,* and *strongly agree*). These items were subdivided into three sections to collect quantitative data relating to usability (ease of use), usefulness, and satisfaction. The career-prep administrator survey has 24 scaled items; counselor survey has 40 scaled items of which

22 items relate to the student Web site and 18 items relate to the counselor components; and builder survey has 22 scaled items. The survey instruments concluded with open-ended questions, allowing respondents to provide additional comments or ideas for ongoing development and improvement in their own words.

Semistructured focus-group interview protocol. The researcher developed a semistructured focus-group interview protocol (see Appendix F) to guide her in facilitating a follow-up focus-group session. The objective of the focus-group session was to obtain in-depth information about the participants' experiences with the WICareerPathways Web site, their reactions to the survey results, and the researcher's preliminary plan for ongoing development and improvement.

Procedures

This section describes the design of this evaluation beginning with the establishment of an evaluation committee. Data collection and analysis using a mixed-methods approach with a two-phase explanatory sequential design are described in chronological order.

Design. This research study was an evaluation of the WICareerPathways Web site conducted by the researcher who was the project coordinator and led the planning and development of the Web site. The researcher was an employee of a technical college district and had no authority over any participant who was surveyed or involved in the follow-up focus-group session.

An evaluation committee was established (see Appendix G) to validate the data-collection instruments, related e-mail communications, and preliminary WICareerPathways Web-site development and improvement plan prior to the follow-up focus-group session. The evaluation committee also reviewed and critiqued the finalized

plan. This researcher invited the Web-site developer, a representative from the WTC System, a representative from the WDPI, and an experienced evaluator from the researcher's technical college to serve on the committee. All agreed to serve on the evaluation committee.

Data collection and analysis. This researcher conducted the study utilizing a mixed-methods approach with a two-phase explanatory sequential design to answer the stated research questions. According to Fitzpatrick et al. (2011), a mixed-methods approach is typical in evaluation "because few questions can be answered by only one strategy" (p. 384). This explanatory sequential design placed a priority on the quantitative and qualitative data collected through the survey instruments. The follow-up focus-group session provided qualitative data.

Prior to developing the online surveys and focus-group session protocol, the researcher conducted a review of the WICareerPathways Web-site project documentation, including grant applications; reports; meeting notes; newsletters; and meeting, training, and presentation evaluations.

A review of the literature was conducted to gather important information to evaluate the WICareerPathways Web site. This review included research related to the conceptual and current framework of career and technical education at the secondary level, program-of-study development, career guidance; career development, computer-assisted career guidance systems, principles of Web-site design, evaluation models considered for application, and evaluation framework to be utilized in this study.

The researcher developed online survey instruments and related e-mail communications. The survey instruments and e-mail communications were forwarded to the evaluation committee. Based on the committee's review and feedback, the draft

documents were modified until confidence was reached that the survey instruments were valid and e-mail communications were acceptable.

The researcher sent three e-mail communications to the sample survey populations. Approximately 2 weeks prior to the administration of the survey, the researcher sent an e-mail communication (see Appendix H) prenotifying the participants that they would be invited to complete an online survey. Approximately 2 weeks later, the researcher sent an e-mail communication inviting the participants to complete the online survey within 2 weeks. Two weeks after the e-mail invitation was sent, the researcher sent an e-mail communication (see Appendix I) with the survey link to target participants reminding them to complete the survey.

On August 13, 2013, this researcher sent the career-prep administrator sample population (n = 15) the e-mail communication prenotifying them that they would be invited to complete the WICareerPathways.org Career-Prep Administrator Survey. The survey invitation e-mail communication was sent on August 26, 2013, and the reminder e-mail communication was sent on September 9, 2013. As of September 23, 2013, 14 career-prep administrators participated in the survey, at which time the researcher forwarded the reminder e-mail communication to the career-prep administrator sample population as a second reminder. All 15 career-prep administrators participated in the career-prep administrator survey.

On September 10, 2013, this researcher sent the counselor and adviser sample population (n = 221) the e-mail communication prenotifying them that they would be invited to complete the WICareerPathways.org Counselor/Advisor Survey. Delivery of approximately 16 e-mail communications failed. The survey invitation e-mail communication was sent to 202 counselors and advisers on September 23, 2013, and the

reminder e-mail communication was sent on October 7, 2013. As of October 21, 2013, 49 respondents participated in the survey, at which time this researcher forwarded the reminder e-mail communication to the counselor and adviser sample population as a second reminder. Sixty-eight counselors and advisers or approximately 34% of the 202 counselors and advisers who received a survey invitation participated in the survey.

On September 16, 2013, this researcher sent the program-of-study builder sample population (n = 384) the e-mail communication prenotifying them that they would be invited to complete the WICareerPathways.org Program-of-Study Builder Survey. Delivery of approximately 50 e-mail communications failed. The survey invitation e-mail communication was sent to 336 program-of-study builders on September 30, 2013, and the reminder e-mail communication was sent on October 15, 2013. As of October 28, 2013, 48 respondents participated in the survey, at which time this researcher forwarded the reminder e-mail communication to 336 program-of-study builders as a second reminder. Eighty-eight program-of-study builders or approximately 26% of the 336 program-of-study builders who received a survey invitation participated in the survey.

As an incentive, $15 Barnes and Noble gift cards were randomly awarded to approximately 5% of each stakeholder group of respondents who completed the survey. As an additional inducement, the results of the study were made available exclusively to the participants. The participants received the results via an e-mail from the researcher.

Quantitative and qualitative data were collected from the responses to the online surveys instruments. The quantitative data from the SurveyMonkey© Gold software (SurveyMonkey©, n.d.) was electronically downloaded into the IBM SPSS (Version 20.0) software. The responses to the multiple-choice questions relating to demographic information were analyzed by computing descriptive statistics to determine the

distribution of responses to each question. The Likert-scale items relating to usability, usefulness, and satisfaction were also analyzed using descriptive statistics to compute the minimum and maximum scores, means, and standard deviations. The researcher conducted an internal reliability analysis of the scaled items. The qualitative responses to the open-ended questions were organized with a coding process to categorize them and reduce them down to themes.

Within a very brief period of time following the e-mail survey invitation, the researcher sent a separate e-mail communication (see Appendix J) with a consent form to the target career-prep administrators, counselors and advisers, and program-of-study builders, inviting them to participate in a focus-group session. On August 13, 2013, this researcher sent the career-prep administrator sample population (n = 15) the e-mail communication inviting them to participate in a follow-up focus-group session. On September 10, 2013, the counselor and adviser sample population (n = 202) was sent the e-mail communication inviting them to participate in a follow-up focus-group session. On September 16, 2013, this researcher sent the program-of-study builder sample population (n = 336) the e-mail communication inviting them to participate in a follow-up focus-group session (see Appendix K).

This researcher strived for a balanced mix of nine to 12 career-prep administrators, program-of-study builders, and counselors and advisers to be represented as focus-group session participants. Five career-prep administrators, three counselors and advisers, and four program-of-study builders responded to the initial invitation.

Based on the data collected and analyzed through the survey instruments, this researcher developed a preliminary plan for ongoing development and improvement of the WICareerPathways Web site. The preliminary plan was forwarded to the evaluation

committee. Based on the committee's review and feedback, the documents were modified until the plan was deemed acceptable.

This researcher also developed a semistructured focus-group interview protocol and related e-mail communications establishing the date, time, and location of the focus-group session. The preliminary plan, protocol, and e-mail communications were forwarded to the evaluation committee. Based on the committee's review and feedback, the documents were modified until consensus was reached that the documents were acceptable.

On November 4, 2013, the five career-prep administrators, three counselors and advisers, and four program-of-study builder participants who expressed an interest in participating in the follow-up focus-group session received an e-mail communication (see Appendix L) requesting them to participate in an online scheduling poll to assist the researcher in setting a time and date for the focus-group session. The e-mail communication included a link to an online scheduling poll. Polling results reflected the afternoon of November 22, 2013, was the best date to schedule the focus-group session.

On November 6, 2013, the researcher sent an e-mail communication with the proposed time and location of the focus-group session. Of the five career-prep administrators, four indicated their availability to participate in the scheduled focus-group session. Of the four program-of-study builders, three indicated their availability to participate. Of the three counselors and advisers, all indicated they could not participate in the focus-group session. Consequently, this researcher forwarded the initial e-mail communication to the counselor and adviser survey sample population on November 8, 2013, inviting them to participate in the November 22, 2013, focus-group session. One counselor expressed interest. This researcher then sent a separate e-mail communication

on November 11, 2013, to an adviser at a local high school who the researcher knew to be an active user of the WICareerPathways Web site inviting participation in the scheduled focus-group session. No response to the invitation was received.

The researcher sent an electronic meeting notice to the prospective focus-group participants on November 11, 2013. On November 19, 2013, the survey results and preliminary plan were sent as an electronic attachment to an e-mail communication reminding participants of the scheduled focus-group session.

The focus-group session was conducted on November 22, 2013, at 1 p.m. in a comfortable classroom at the researcher's technical college. Approximately 15 minutes prior to the focus-group session, the adviser from a local high school who the researcher knew to be an active user of the WICareerPathways Web site arrived. The adviser indicated the consent form with the adviser's signature was returned via fax. The researcher had not received the fax but provided another consent form to the adviser. Consent was obtained from all eight participants before starting the session, and each participant received a copy of his or her consent form signed by the researcher prior to departure.

The focus-group session lasted approximately 1.5 hours. Copies of the preliminary plan including the survey results were available to the group. This researcher presented herself in a professional but friendly manner as she provided an overview of the research study and preliminary plan. This researcher interviewed the focus-group session participants following the semistructured interview protocol. An attempt was made to strike a balance by adhering to the protocol, but this researcher asked probing questions when needed to gather additional information. The researcher typed notes during the session into the open protocol Microsoft Word 2010 software application

document on a computer in the classroom. As the notes were typed, they were electronically projected onto a screen for all to view. The focus-group sessions concluded cordially with a thank you and token of appreciation.

The notes typed into the protocol document were formatted into a memorandum. The researcher first explored the text data collected to get an overall sense of the data. The data were organized and analyzed utilizing the Microsoft Word 2010 software application. The researcher coded the data by going through and reviewing the text data to label text into different codes (i.e., codes A1, A2, B2, C1) and then recognized the text based on the codes by performing a word search to locate all the text fitting specific label codes. Next, the researcher reduced the codes into common themes. To increase the validity and reliability of the qualitative research, this researcher followed the recommendation of Creswell (2007) by "taking data, analyses, interpretations, and conclusions back to the participants so that they can judge the accuracy and credibility of the account" (p. 208).

Based on the analysis of qualitative data collected at the follow-up focus group session, the researcher finalized the preliminary plan. The final plan includes a discussion of the data collected and analyzed as well as recommendations for ongoing development and improvement of the Web site. The modified plan was forwarded to the focus-group session participants. Based upon review and feedback received from the focus-group session participants, the researcher modified the plan and forwarded it to the evaluation committee. The plan was modified until confidence was reached that the final plan was acceptable.

Challenges and Limitations

There were a number of challenges facing an evaluative study of this nature. The

researcher had difficulty with a lack of participants and lost participants during the research process. The study could be transferable to other states' Web-based career pathways initiatives, but not all states would find it easy to transfer or useful based on their needs. One of the key stakeholder groups utilizing the WICareerPathways Web site is middle and high school students, but it was not feasible for this study to include students under the age of 18. The counselor portion of the Web site was new, and some counselors were not familiar enough with its features. The results of the research are limited to only those participants who use the Web site and did not inform the researcher of why key stakeholders may not be using the site.

Chapter 4: Results

Overview

The purpose of this evaluative research study was to develop a comprehensive plan for ongoing development and improvement of the WICareerPathways Web site based on data collected from stakeholder sources. Results of this chapter are presented based on a review of project documentation and literature to identify expected outcomes, quantitative and qualitative analysis of three online survey instruments, and qualitative analysis of data collected through a semistructured focus-group interview protocol.

The review of the project documentation included grant applications; reports; meeting notes; newsletters; and meeting, training, and presentation evaluations. The literature review included research related to the conceptual and current framework of career and technical education at the secondary level, program-of-study development, career guidance, career development, computer-assisted career guidance systems, principles of Web-site design, evaluation models considered for application, and evaluation framework to be utilized in this study.

The researcher used a mixed-methods approach with a sequential explanatory design. In the initial phase, quantitative and qualitative data were collected from three stakeholder groups (technical college career-prep administrators, middle and high school counselors and advisers, and secondary program-of-study builders) to determine the satisfactory components of the WICareerPathways Web site and which stakeholder needs were not being met. The survey software SurveyMonkey© Gold (SurveyMonkey©, n.d.) was used to administer three surveys: (a) WICareerPathways.org Career-Prep Administrator Survey, (b) WICareerPathways.org Counselor and Adviser Survey, and (c) WICareerPathways.org Program-of-Study Builder Survey. The online survey instruments

were designed to collect both quantitative and qualitative data. Fifteen career-prep administrators participated in the career-prep administrator survey. Sixty-eight counselors and advisers participated in the counselor and advisor survey. Eighty-nine program-of-study builders participated in the program-of-study builder survey.

The main section of each of the survey instruments included items with a 5-point Likert rating scale (*strongly disagree*, *disagree*, *undecided*, *agree*, and *strongly agree*). The scaled items from the career-prep administrator survey were subdivided into three sections: usability (Items 1 through 9), usefulness (Items 10 through 14), and satisfaction (Items 15 through 24). Counselors and advisers were asked to rate survey items based on two separate Web-based applications, the student Web site, and counselor components. The scaled items from the student Web-site portion were subdivided into three sections: usability (Items 6 through 15), usefulness (Items 16 through 20), and satisfaction (Items 21 through 27). The scaled items from the counselor components portion were subdivided into three sections: usability (Items 28 through 33), usefulness (Items 34 through 36), and satisfaction (Items 37 through 45). The scaled items from the program-of-study builder survey were subdivided into three sections: usability (Items 6 through 14), usefulness (Items 15 through 17, and satisfaction (Items 18 through 27). The researcher statistically analyzed the quantitative data using IBM SPSS (Version 20) software.

The results (response numbers and percentages) of each scaled item by section for each of the three survey instruments can be found in Appendices M, N, and O. Descriptive analysis (the minimum and maximum scores, means, and standard deviations) of each scaled item from each of the surveys is set forth in Appendices P, Q, and R. To determine the internal reliability of the scaled items by section on the three

surveys, Cronbach's alpha tests for reliability were conducted. These tests compared scaled items within each section of the three surveys. Reliability coefficients ranged from .785 to .938 (see Appendix S).

Each of the three survey instruments concluded with open-ended questions allowing respondents to provide additional comments or ideas in their own words. The career-prep administrator survey concluded with the following seven open-ended questions:

24. "What do you like best about this website?"

25. "How can this website be improved?"

26. "What additional information, if any, should be on this website?"

27. "What additional reports, if any should be on this website?"

28. "Is there anything you think is missing from this website?"

29. "What additional training, if any, do you need to use this website?"

30. "What feedback, if any, do you receive from students who use the WICareerPathways.org/Students site?"

The counselor and adviser survey concluded with the following open-ended questions:

46. "What do you like best about the Student site and/or the Counselor/Advisor site?"

47. "How can the Student website and/or the Counselor/Advisor site be improved?"

48. "What additional information, if any, should be on the Student website or the Counselor/Advisor site?"

49. "Is there anything you think is missing from the Student website and/or the

Counselor/Advisor site?"

50. "What additional training, if any, do you need to use the Student website or the Counselor/Advisor site?"

51. "What feedback, if any, do you receive from students who use the WICareerPathways.org/Students site?"

The program-of-study builder survey concluded with the following six open-ended questions:

28. "What do you like best about this website?"

29. "How can this website be improved?"

30. "What additional information, if any, should be on this website?"

31. "Is there anything you think is missing from this website?"

32. "What additional training, if any, do you need to use this website?"

33. "What feedback, if any, do you receive from students who use the WICareerPathways.org/Students site?"

The researcher analyzed the qualitative data with a coding process and organized the data into two categories, satisfaction and unmet needs, to answer Research Questions 2 and 3. The comments reflecting satisfaction were further analyzed and reduced down to themes. The themes from each survey were then aggregated to produce a single listing of themes and were ranked in descending order based on the number of comments relating to each theme. The same process was utilized to produce and present themes representing unmet stakeholder needs.

Multiple-choice questions were asked of the counselors and advisers and program-of-study builders to obtain demographic information relating to the respondents' role, type of school, gender, and age. Although the demographic information was not the

crux of this study, the statistical analysis of these quantitative data may help to identify implications, if any, for the ongoing development and improvement of the WICareerPathways Web site. The results (response numbers and percentages) of each item are set forth in Appendices T and U.

Following quantitative and qualitative data analysis of the three survey instruments, the researcher linked the quantitative and qualitative data results, analyzed how the data complemented each other, and developed a preliminary plan that culminated with recommendations (see Appendix V) for the ongoing development of the WICareerPathways Web site based on a general interpretation of the findings.

The researcher followed up with a focus-group session of interested survey participants representing each of the stakeholder groups. Based on the results of an online meeting poll, the researcher set the focus-group session for the afternoon of November 22, 2013. The results of the data collected in the initial phase and researcher's preliminary plan were shared with the focus group as an attachment to an e-mail communication. The session was held in a classroom at the researcher's place of employment. Consent was obtained from all eight participants before starting the session, and each participant received a copy of his or her consent form signed by the researcher prior to departure. The objectives of the focus-group session were to obtain in-depth information about the participants' experiences with the WICareerPathways Web site, their reactions to the survey results, and the researcher's preliminary plan for ongoing development and improvement.

The researcher projected the semistructured focus-group interview protocol Microsoft Word 2010 document onto a screen. As the participants spoke, the researcher keyed in participant comments for all to view (with no regard to spelling, punctuation,

and format). At the end of the session, the researcher saved the protocol document with keyed comments to a jump drive. Following the session, the researcher reviewed and edited the protocol document and sent each participant a copy as an e-mail attachment to verify and approve their statements. Five participants replied with approval of their statements as set forth in the protocol document; three participants did not reply. The researcher then analyzed the qualitative data collected from the participants at the focus-group session with a coding process and organized the data into two categories: satisfaction and unmet needs.

The researcher linked the quantitative and qualitative data collected from the three survey instruments and qualitative data from the follow-up focus-group session and analyzed how the research questions, methods, and data complemented each other. The researcher then modified the plan and forwarded it to the focus-group session participants. Based upon review and feedback received from the focus-group session participants, the researcher modified the plan and forwarded it to the evaluation committee. The plan was modified until confidence was reached that the final plan was acceptable. The comprehensive plan is set forth in Chapter 5.

Findings for Research Question 1

The first research question asks the following: What are the expected outcomes of the WICareerPathways Web site? A review of project documentation and research literature was conducted to identify the expected outcomes upon which to evaluate the WICareerPathways Web site.

Project documentation. From the beginning of the WICareerPathways Web site project, creating a user-friendly Web site organized by career clusters and pathways was seen as an essential resource for Wisconsin stakeholders. The first expected outcome of

the Web site was that it was an essential user-friendly online tool organized by career clusters and pathways.

Literature review. Based on the literature review, the second expected outcome of the WICareerPathways Web site was that it will be seen as an essential tool to support the development of programs of study and the published programs of study will serve as the foundation for students' academic career plans. The third expected outcome of the WICareerPathways Web site was that it will assist middle and high school students in career exploration and academic planning by providing access to careers, postsecondary options in Wisconsin, and high school programs of study, all within Wisconsin's career cluster framework. The fourth expected outcome of the WICareerPathways Web site was that it is expected to aid counselors and advisers in guiding students in career development and academic and career planning. The fifth expected outcome of the Web site found in the literature review was that the users of the WICareerPathways Web site will find it easy to use, useful, and satisfy their needs based on their role as one of three users: career-prep administrators, counselors and advisers, and program-of-study builders. The sixth expected outcome of the WICareerPathways Web site was that it is expected to undergo further developments and improvements based on user feedback.

Findings for Research Question 2

The second research question asked the following: What are the satisfactory components of the WICareerPathways Web site as reflected in data collected by the researcher from technical college career-prep administrators, middle and high school counselors, and high school program-of-study builders? The researcher analyzed quantitative and qualitative data from the three online survey instruments and a follow-up focus-group session relating to satisfactory components.

Career-prep administrator survey. Career-prep administrators were asked to rate survey Items 1 through 24 with a 5-point Likert rating scale (*strongly disagree*, *disagree*, *undecided*, *agree*, and *strongly agree*). The researcher analyzed this portion of the survey using IBM SPSS (Version 20) software to calculate descriptive statistics. First, Items 1 through 24 with the highest overall mean scores were determined. The results are presented in descending order in Table 1.

Table 1

Career-Prep Administrator Survey Items With the Highest Overall Mean Scores

Item	Section	Min.	Max.	*M*	*SD*
18. I am satisfied with the technical support I receive. (*n* = 15)	Satisfaction	4	5	4.80	.41
23. I would recommend *this* Web site to counselors, teachers, administrators and students at the middle and high schools within my district. (*n* = 14)	Satisfaction	3	5	4.57	.65
6. It is easy to add Program-of-Study Builders and Counselors/Advisors from the high schools in my district to this Web site. (*n* = 15)	Usability	2	5	4.53	.92
15. I am satisfied with the look and feel of this Web site. (*n* = 15)	Satisfaction	3	5	4.40	.74
8. It is easy to add my college's programs to Pathways on this Web site. (*n* = 15)	Usability	2	5	4.40	.83
7. It is easy to add, remove, or edit my college's associate degree, technical diploma and apprenticeship programs on this Web site. (*n* = 15)	Usability	2	5	4.40	.83

Next, items with the highest mean scores within each section (usability Items 1 through 9, usefulness Items 10 through 14, and satisfaction Items 15 through 24) were determined. The results are presented in descending order by section in Table 2. When compared, each analysis produced only slightly different results.

Table 2

Career-Prep Administrator Survey Items With the Highest Mean Scores by Section

Item	Min.	Max.	*M*	*SD*
Usability				
6. It is easy to add Program-of-Study Builders and Counselors/Advisors from the high schools in my district to this Web site. (*n* = 15)	2	5	4.53	.92
7. It is easy to add, remove, or edit my college's associate degree, technical diploma and apprenticeship programs on this Web site. (*n* = 15)	2	5	4.40	.83
8. It is easy to add my college's programs to Pathways on this Web site. (*n* = 15)	2	5	4.40	.83
Usefulness				
13. This Web site provides me with sufficient information to understand how Programs of Study are integrated with students' Academic Career Plans within the Career Clusters framework. (*n* = 15)	2	5	4.07	.88
11. My college's programs provide useful information for middle and high school Students to explore my college's programs on the www.WIcareerPathways/ Students Web site. (*n* = 15)	1	5	3.93	.96
Satisfaction				
18. I am satisfied with the technical support I receive. (*n* = 15)	4	5	4.80	.41
23. I would recommend this Web site to counselors, teachers, administrators and students at the middle and high schools within my district. (*n* = 14)	3	5	4.57	.65
15. I am satisfied with the look and feel of this Web site. (*n* = 15)	3	5	4.40	.74

Counselor and adviser survey. Counselors and advisers were asked to rate survey items based on two separate Web-based applications, the student Web site, and counselor components. They were asked to rate survey Items 6 through 27 relating to the student Web site and Items 28 through 45 relating to the counselor components with a 5-

point Likert rating scale (*strongly disagree*, *disagree*, *undecided*, *agree*, and *strongly agree*).

The researcher analyzed these two portions of the survey separately using IBM SPSS (Version 20) software to calculate descriptive statistics. First, Items 6 through 27 relating to the student Web site with the highest overall mean scores were determined. The results are presented in descending order in Table 3.

Table 3

Counselor and Adviser Survey-Student Web-Site Items With the Highest Overall Mean Scores

Item	Section	Min.	Max.	*M*	*SD*
16. This Student Web site provides useful information to guide my students in college and careers. (*n* = 62)	Usefulness	2	5	4.13	.76
9. It is easy for students to take the Career Cluster Interest Inventory on the Student Web site. (*n* = 68)	Usability	2	5	4.04	.82
6. The Student Web site is user friendly. (*n* = 68)	Usability	2	5	3.96	.82
8. It is easy for students to set up an account on the Student Web site. (*n* = 68)	Usability	1	5	3.93	.97
22. I am satisfied with the speed and reliability of the Student Web site. (*n* = 58)	Satisfaction	1	5	3.90	.85
10. It is easy for students to explore Clusters, Pathways, Careers, High School Programs of Study, and College Majors/Programs based on their Career Clusters Interest Inventory. (*n* = 66)	Usability	1	5	3.89	.79
17. The Student Web site provides me with sufficient information to understand how Programs of Study are integrated with students' Academic Career Plans within the Career Clusters framework. (*n* = 62)	Usefulness	1	5	3.89	.87

Next, items with the highest mean scores within each section (usability Items 6 through 15, usefulness Items 16 through 20, and satisfaction Items 21 through 27) were

determined. The results are presented in descending order by section in Table 4. When compared, each analysis produced only slightly different results.

Table 4

Counselor and Adviser Survey-Student Web-Site Items With the Highest Mean Scores by Section

Item	Min.	Max.	*M*	*SD*
Usability				
9. It is easy for students to take the Career Cluster Interest Inventory on the student Web site. (*n* = 68)	2	5	4.04	.82
6. The student Web site is user friendly. (*n* = 68)	2	5	3.96	.82
8. It is easy for students to set up an account on the Student Web site. (*n* = 68)	1	5	3.93	.97
Usefulness				
16. This Student Web site provides useful information to guide my students in college and careers. (*n* = 62)	2	5	4.13	.76
17. The student Web site provides me with sufficient information to understand how Programs of Study are integrated with students' Academic Career Plans within the Career Clusters framework. (*n* = 62)	1	5	3.89	.87
Satisfaction				
22. I am satisfied with the speed and reliability of the Student Web site. (*n* = 58)	1	5	3.90	.85
26. Overall, I am satisfied with the Student Web site. (*n* = 59)	1	5	3.83	.97
27. The Student Web site meets my expectations. (*n* = 59)	1	5	3.81	1.01

Regarding the counselor components portion of the survey, Items 28 through 45 with the highest overall mean scores were determined. The results are presented in descending order in Table 5. Next, items with the highest mean scores within each section (usability Items 28 through 33, usefulness Items 34 through 36, satisfaction Items 37 through 45) were determined. The results are presented in descending order by section

in Table 6. When compared, each analysis produced only slightly different results.

Table 5

Counselor and Adviser Survey-Counselor Components Items With the Highest Overall Mean Scores

Item		Section	Min.	Max.	*M*	*SD*
44.	I would recommend this Web site to a school counselor or advisor (*n* = 53)	Satisfaction	1	5	3.91	1.04
29.	The Counselor/ Advisor site is easy to navigate. (*n* = 57)	Usability	1	5	3.82	.83
39.	I am satisfied with the speed and reliability of the Counselor/ Advisor site. (*n* = 54)	Satisfaction	1	5	3.80	.86
28.	The Counselor/ Advisor site is user friendly. (*n* = 58)	Usability	1	5	3.79	.79
37.	I am satisfied with the look and feel of the Counselor/Advisor site. (*n* = 56)	Satisfaction	1	5	3.73	.98
30.	I can easily view school-wide data on the Counselor/Advisor site. (*n* = 57)	Usability	1	5	3.72	.80

Program-of-study builder survey. Program-of-study builders were asked to rate survey Items 6 through 27 with a 5-point Likert rating scale (*strongly disagree*, *disagree*, *undecided*, *agree*, and *strongly agree*). The researcher analyzed this portion of the survey using IBM SPSS (Version 20) software to calculate descriptive statistics.

First, Items 6 through 27 with the highest overall mean scores were determined. The results are presented in descending order in Table 7. Next, items with the highest mean scores within each section (usability Items 6 through 14, usefulness Items 15 through 17, and satisfaction Items 18 through 27) were determined. The results are presented in descending order by section in Table 8. When compared, each analysis produced only slightly different results.

Comments to open-ended survey questions. Themes were generated by a

qualitative data analysis of the responses to the open-ended questions from the three surveys relating to satisfactory components. The dominant themes are presented in descending order by number of comments in Table 9.

Table 6

Counselor and Adviser Survey-Counselor Components Items With the Highest Mean Scores by Section

Item	Min.	Max.	*M*	*SD*
Usability				
29. The Counselor/ Advisor site is easy to navigate. (*n* = 57)	1	5	3.82	0.83
28. The Counselor/ Advisor site is user friendly. (*n* = 58)	1	5	3.79	0.79
Usefulness				
34. The Counselor/ Advisor site provides useful information to guide my students in the development of an Academic Career Plan. (*n* = 59)	1	5	3.69	0.73
Satisfaction				
44. I would recommend this Web site to a school counselor or advisor (*n* = 53)	1	5	3.91	1.04
39. I am satisfied with the speed and reliability of the Counselor/Advisor site. (*n* = 54)	1	5	3.80	0.86
37. I am satisfied with the look and feel of the Counselor/Advisor site. (*n* = 56)	1	5	3.73	0.98

In response to the open-ended question, "What feedback, if any, do you receive from students who use the WICareerPathways.org/Students site?", users made 31 positive comments. Comments shared included students loving the site, liking the site, and being impressed with the site. Users conveyed remarks from students relating to simple to use, easy to navigate, useful, and student-friendly. Two comments related to positive feedback from parents.

Findings for Research Question 3

The third research question asked the following: Which stakeholder needs are not

being met by the WICareerPathways Web site as reflected in the data collection by the researcher from technical college career-prep administrators, middle and high school counselors, and high school program-of-study builders? The researcher analyzed quantitative and qualitative data from the three online survey instruments and a follow-up focus-group session relating to unmet stakeholder needs.

Career-prep administrator survey. The researcher analyzed survey Items 1 through 24 of the career-prep administrator survey again, this time focusing on the lowest mean scores representing unmet stakeholder needs. First, items with the lowest overall mean scores were determined. The results are presented in ascending order in Table 10.

Table 7

Program-of-Study Builder Survey Items With the Highest Overall Mean Scores

Item	Section	Min.	Max.	*M*	*SD*
8. It is easy to access Clusters, Pathways, College Majors/ Programs and Careers on this Web site. (*n* = 88)	Usability	1	5	4.03	.70
10. It is easy to search for existing Programs of Study on this Web site. (*n* = 84)	Usability	2	5	4.01	.61
20. I am satisfied with the speed and reliability of this Web site. (*n* = 82)	Satisfaction	2	5	3.98	.65
6. This Web site is user friendly. (*n* = 88)	Usability	1	5	3.97	.79
25. Overall, I am satisfied with this Web site. (*n* = 81)	Satisfaction	2	5	3.93	.69
13. The instructions and prompts to build a Program of Study are helpful. (*n* = 79)	Usefulness	2	5	3.91	.68
7. This Web site is easy to navigate. (*n* = 88)	Usability	1	5	3.91	.77

Next, the items with the lowest mean scores within each section (usability Items 1 through 9, usefulness Items 10 through 14, and satisfaction Items 15 through 24) were determined. The results are presented in ascending order by section in Table 11. When

compared, each analysis produced only slightly different results.

Table 8

Program-of-Study Builder Survey Items With the Highest Mean Scores by Section

Item	Min.	Max.	*M*	*SD*
Usability				
8. It is easy to access Clusters, Pathways, College Majors/Programs and Careers on this Web site. (*n* = 88)	1	5	4.03	.70
10. It is easy to search for existing Programs of Study on this Web site. (*n* = 84)	2	5	4.01	.61
6. This Web site is user friendly. (*n* = 88)	1	5	3.97	.79
Usefulness				
13. The instructions and prompts to build a Program of Study are helpful. (*n* = 79)	2	5	3.91	.68
15. This Web site provides me with sufficient information to understand how Programs of Study are integrated with students' Academic Career Plans within the Career Clusters framework. (*n* = 83)	2	5	3.69	.68
Satisfaction				
20. I am satisfied with the speed and reliability of this Web site. (*n* = 82)	2	5	3.98	.65
25. Overall, I am satisfied with this Web site. (*n* = 81)	2	5	3.93	.69

Counselor and adviser survey. The researcher analyzed the student Web site portion of the counselor and adviser survey Items 6 through 27 again, this time focusing on the lowest mean scores representing unmet stakeholder needs. First, items with the lowest overall mean scores overall were determined. The results are presented in ascending order in Table 12.

Next, items with the lowest mean scores within each section (usability Items 6 through 15, usefulness Items 16 through 20, and satisfaction Items 21 through 27) were

determined. The results are presented in ascending order by section in Table 13. When compared, each analysis produced only slight different results.

Table 9

Qualitative Themes Representing Satisfactory Components

Theme	No.
The Web site is easy to use, easy to navigate, and is user-friendly.	31
The Web site is a good academic and career planning tool.	21
The Web site contains a great deal of accessible, useful, and up-to-date information.	18
Users expressed general appreciation for the Web site.	12
Program-of-study builders find the builder tool easy to enter information and build programs of study.	11
Program-of-study builders and counselors and advisers like the organization of Wisconsin postsecondary options by clusters and pathways.	9
Program-of-study builders and counselors and advisers like the career information and data.	7
Program-of-study builders and counselors and advisers like the visual appeal.	7
Anyone can use the Web site. Students and schools do not have to pay for it.	4
Career-prep coordinators and program-of-study builders experienced positive training experiences.	4
Counselors and advisers like the online career cluster inventory.	3

Regarding the counselor components portion of the survey, Items 28 through 45, items with the lowest overall mean scores were determined. The results are presented in ascending order in Table 14. Next, items with the lowest mean scores within each section (usability Items 28 through 33, usefulness Items 34 through 36, and satisfaction Items 37 through 45) were determined. The results are presented in ascending order by section in Table 15. When compared, each analysis produced only slightly different results.

Program-of-study builder survey. The researcher analyzed program-of-study builder survey Items 6 through 27 again, this time focusing on the lowest mean scores representing unmet stakeholder needs. First, items with the lowest overall mean scores were determined. The results are presented in ascending order in Table 16. Next, items

with the lowest mean scores within each section (usability Items 6 through 14, usefulness Items 15 through 17, and satisfaction Items 18 through 27) were determined. The results are presented in ascending order by section in Table 17. When compared, each analysis produced only slightly different results.

Table 10

Career-Prep Administrator Survey Items With the Lowest Overall Mean Scores

Item		Section	Min.	Max.	*M*	*SD*
14.	This Web site helps me connect with the high schools in my district. (*n* = 15)	Usefulness	2	5	3.67	1.18
12.	My college's programs provide useful information for middle and high school Counselors/Advisors to assist students in developing a personal Academic Career Plan on the www.WICareer Pathways/Students Web site. (*n* = 15)	Usefulness	1	5	3.73	1.10
21.	I am satisfied with the reports on this Web site to manage my college's programs and the high schools within my district. (*n* = 15)	Satisfaction	2	5	3.87	.83
10.	My college's programs provide useful information for Program-of-Study builders to build a Program of Study on this Web site. (*n* = 15)	Usefulness	1	5	3.87	1.13
24.	This Web site meets my expectations. (*n* = 14)	Satisfaction	2	5	3.93	1.14
11.	My college's programs provide useful information for middle and high schools Students to explore my college's programs on the www.WIcareerPathways/Students Web site. (*n* = 15)	Usefulness	1	5	3.93	.96

Comments to open-ended survey questions. Themes were generated by a qualitative data analysis of the responses to the open-ended questions from the three surveys relating to unmet stakeholder needs. The dominant themes are presented in descending order by number of comments in Table 18.

In response to the open-ended question, "What feedback, if any, do you receive from students who use the WICareerPathways.org/Students site?", users shared 10 comments relating to minimal feedback from students and minimal use of the Web site by students.

Table 11

Career-Prep Administrator Survey Items With the Lowest Mean Scores by Section

Item	Min.	Max.	*M*	*SD*
Usability				
5. It is easy to search for existing Programs of Study on this Web site. (*n* = 15)	2	5	4.20	0.86
2. This Web site is easy to navigate. (*n* = 15)	3	5	4.20	0.56
Usefulness				
12. My college's programs provide useful information for middle and high school Counselors/Advisors to assist students in developing a personal Academic Career Plan on the www.WICareer Pathways/Students Web site. (*n* = 15)	1	5	3.73	1.10
14. This Web site helps me connect with the high schools in my district. (*n* = 15)	2	5	3.67	1.18
Satisfaction				
17. I am satisfied with the speed and reliability of this Web site. (*n* = 15)	2	5	4.27	0.80
24. This Web site meets my expectations. (*n* = 14)	2	5	3.93	1.14
21. I am satisfied with the reports on this Web site to manage my college's programs and the high schools within my district. (*n* = 15)	2	5	3.87	0.83

Program-of study builders made three comments related to either no feedback or students not using the Web site and three comments referencing negative feedback. Counselors and advisers shared three comments regarding minimal or no use of the Web site by students.

Findings for Research Question 4

The fourth research question asked the following: "Based on the data collected, what is the researcher's comprehensive plan for ongoing development and improvement of the Wisconsin Career Pathways Web site?" Following quantitative and qualitative data analysis of the three surveys, the researcher linked the quantitative and qualitative data, analyzed how the data complemented each other, and developed a preliminary plan (see Appendix D) for the ongoing development of the WICareerPathways Web site based on a general interpretation of the findings. The data analysis and preliminary plan were shared with the follow-up focus-group session participants.

Table 12

Counselor and Adviser Survey-Student Web-Site Items With the Lowest Mean Scores

Item	Section	Min.	Max.	*M*	*SD*
12. It is easy for students to convert a Program of Study to an Academic Career Plan. (*n* = 67)	Usability	2	5	3.42	.74
15. It is easy for students to change their high school on the Student Web site. (*n* = 63)	Usability	1	5	3.43	.78
23. I am satisfied with the technical support I receive when guiding students on the Student Web site. (*n* = 59)	Satisfaction	2	5	3.47	.75
18. My high school's Program(s) of Study provides useful information for students to develop a personal Academic Career Plan on the Student Web site. (*n* = 60)	Usefulness	1	5	3.50	.98
14. It is easy for students to add photos, documents, and links to their MiLocker on the Student Web site. (*n* = 64)	Usefulness	2	5	3.52	.71
25. I am satisfied with the training materials for the Student Web site. (*n* = 59)	Satisfaction	2	5	3.63	.81

Follow-up focus-group session. This researcher strived for a balanced mix of

career-prep administrators, program-of-study builders, and counselors and advisers to be represented as focus-group session participants. Three career-prep administrators, one counselor, one adviser, and three program-of-study builders participated in the focus-group session. The eight participants echoed the themes of the WICareerPathways Web site generated from the qualitative analysis of the three survey instruments.

Table 13

Counselor and Adviser Survey-Student Web-Site Items With the Lowest Mean Scores by Section

Item	Min.	Max.	*M*	*SD*
Usability				
12. It is easy for students to convert a Program of Study to an Academic Career Plan. (*n* = 67)	2	5	3.42	.74
15. It is easy for students to change their high school on the Student Web site. (*n* = 63)	1	5	3.43	.78
14. It is easy for students to add photos, documents, and links to their MiLocker on the Student Web site. (*n* = 64)	2	5	3.52	.71
Usefulness				
18. My high school's Program(s) of Study provides useful information for students to develop a personal Academic Career Plan on the Student Web site. (*n* = 60)	1	5	3.50	.98
Satisfaction				
23. I am satisfied with the technical support I receive when guiding students on the Student Web site. (*n* = 59)	2	5	3.47	.75
25. I am satisfied with the training materials for the Student Web site. (*n* = 59)	2	5	3.63	.81
24. I am satisfied with the training I received for the Student Web site. (*n* = 59)	1	5	3.68	.96

When asked the first question from the semistructured focus-group session protocol, "What are the strengths of the WICareerPathways Web site?", responses reflected satisfaction with several elements of the Web site. Participant A1 stated, "It's an

outlet or venue for educators, parents, and students to use the same system, same terminology." Participant C1 stated, "User-friendly, and I am saying that based on what students say in conferences. They specifically talk about the survey they take and about when they're searching the site." Participant C2 stated, "When we're having a technical issue, it's taken care of." Participant A2 stated, "It's free and accessible 24/7."

Table 14

Counselor and Adviser Survey-Counselor Components Items With the Lowest Overall Mean Scores

Item	Section	Min.	Max	*M*	*SD*
36. Setting up a student group on the Counselor/Advisor site is useful. (*n* = 57)	Usefulness	1	5	3.32	.66
42. I am satisfied with the training materials for the Counselor/ Advisor site. (*n* = 53)	Satisfaction	1	5	3.38	.95
32. I can easily create a student group on the Counselor/Advisor site. (*n* = 59)	Usability	1	5	3.39	.79
41. I am satisfied with the training I received for the Counselor/Advisor site. (*n* = 53)	Satisfaction	1	5	3.53	1.01
40. I am satisfied with the technical support I receive when I am using the Counselor/ Advisor site. (*n* = 55)	Satisfaction	3	5	3.60	.71
33. I can easily view my students' profiles and Academic Career Plans on the Counselor/ Advisor site. (*n* = 58)	Usability	1	5	3.60	.82

Participant B3 stated, "I like the dynamic look of the student site, the whole color scheme. That piece of it is fun and hip and cool. I like the black background." Participant C1 stated, "Kids can save their personal information and keep updating it." Participant B3 stated, "Kids can upload their own stuff, and all of it is in one locker." C1 mentioned, "the link that connect students with certain school districts."

Regarding information contained on the WICareerPathways Web site, Participant

B2 stated that the "introductory level explanation of a cluster, pathway, program of study, [and] individual learning plan" was a strength. Participant A1 cited, the "connection to local Wisconsin colleges" with Participant B1 adding, "in particular, the majors/programs within each college." Participant B2 stated, "I like the links out to DWD [Wisconsin Department of Workforce Development] and O*NET's My Next Move."

Table 15

Counselor and Adviser Survey-Counselor Components Items With the Lowest Mean by Section

Item	Min.	Max.	*M*	*SD*
Usability				
32. I can easily create a student group on the Counselor /Advisor site. (*n* = 59)	1	5	3.39	0.79
33. I can easily view my students' profiles and Academic Career Plans on the Counselor/Advisor site. (*n* = 58)	1	5	3.60	0.82
Usefulness				
36. Setting up a student group on the Counselor/Advisor site is useful. (*n* = 57)	1	5	3.32	0.66
Satisfaction				
42. I am satisfied with the training materials for the Counselor/ Advisor site. (*n* = 53)	1	5	3.38	0.95
41. I am satisfied with the training I received for the Counselor/ Advisor site. (*n* = 53)	1	5	3.53	1.01
40. I am satisfied with the technical support I receive when I am using the Counselor/Advisor site. (*n* = 55)	1	5	3.60	0.71

Participant A1 referenced "connection to business" as a strength. Participant B2 stated, "school-wide data on the counselor site regarding how many students are interested in each cluster and pathway." Participant A2 mentioned the "feature that shows how many schools are using it and which students are using it" as a strength.

Participant A3 stated, "The new Web pages for the program-of-study

implementation guide are now laid out very nicely on the site. You can pick what you want and its highlighted information. It is especially useful for new CTE [career and technical education] teachers." Participant B2 stated, "It is nice to have a copy and paste feature on the builder site." Participant B1 stated a strength of the Web site was the

> openness of the whole program. Any teacher can get access and create a program of study for their department. Ultimately, it's the hope that all departments will be creating programs of study. A few have started doing that in CESA [#] district.

Table 16

Program-of-Study Builder Survey Items With the Lowest Overall Mean Scores

Item	Section	Min.	Max.	*M*	*SD*
22. I am satisfied with the training I received for this Web site. (*n* = 83)	Satisfaction	1	5	3.63	1.00
21. I am satisfied with the technical support I receive. (*n* = 83)	Satisfaction	2	5	3.64	0.76
17. My published Program(s) of Study provides useful information for counselors at my school to assist students in developing a personal Academic Career Plan on the Student site. (*n* = 83)	Usefulness	2	5	3.65	0.69
16. My published Program(s) of Study provides useful information for students at my high school to develop a personal plan of study on the Student site. (*n* = 83)	Usefulness	2	5	3.65	0.72
24. I am satisfied with the Program-of-Study Builder tool. (*n* = 83)	Satisfaction	2	5	3.67	0.77
15. This Web site provides me with sufficient information to understand how Programs of Study are integrated with students' Academic Career Plans within the Career Clusters framework. (*n* = 83)	Usefulness	2	5	3.69	0.68

The participants were asked the following questions set forth in the semistructured focus-group interview protocol relating to unmet stakeholder needs:

2. "What are some of the weaknesses of the WICareerPathways Web site?"

3. “What suggestions do you have to improve existing features on the Web site?”

4. “What suggestions do you have to add new features on the Web site?”

Responses generated comments relating to weaknesses, areas of improvement, and new features to be added to the Web site.

Table 17

Program-of-Study Builder Survey Items With the Lowest Mean Scores by Section

Item	Min.	Max.	*M*	*SD*
Usability				
14. If I make a mistake building a program of Study, I recover easily and quickly. (*n* = 80)	2	5	3.72	0.84
11. It is easy to build a Program of Study on this Web site. (*n* = 84)	1	5	3.79	0.78
12. I easily learned to build a Program of Study on this Web site. (*n* = 80)	2	5	3.84	0.82
Usefulness				
17. My published Program(s) of Study provides useful information for counselors at my school to assist students in developing a personal Academic Career Plan on the Student site. (*n* = 83)	2	5	3.65	0.69
16. My published Program(s) of Study provides useful information for students at my high school to develop a personal plan of study on the Student site. (*n* = 83)	2	5	3.65	0.72
Satisfaction				
22. I am satisfied with the training I received for this Web site. (*n* = 83)	1	5	3.63	1.00
21. I am satisfied with the technical support I receive. (*n* = 83)	2	5	3.64	0.76
24. I am satisfied with the Program-of-Study Builder tool. (*n* = 83)	2	5	3.67	0.77

During a discussion relating to expanding the reach of the Web site, Participant B1 asked, “Has this [the Web site] been rolled out to academic people?” In response, Participant A3 remarked, “depends on people that [researcher] and I have been able to

reach. If we have math and science people in the room, we can reach them." Participant A3 further stated, "We have been around a lot. We presented at a lot of state functions, " and added, "It's getting easier to reach out to academics because of Project Lead the Way, career academies, and it's not just CTE that is still siloed in some way."

Table 18

Qualitative Themes Representing Unmet Stakeholder Needs

Theme	No.
Improve program-of-study builder tool.	20
Offer more program-of-study builder training.	20
Offer more training on the student Web site and counselor components.	19
Develop career-prep administrator usage and data reports.	14
Provide more information on academic and career planning.	13
Increase promotion of the Web site to schools and students.	11
Add more assessments and improve existing survey.	9
Develop links to career development sites.	9
Other Web sites are preferred.	8
Add out-of-state colleges added, especially neighboring states.	8
Improve navigation.	8
Provide more career-related resources.	8
Change the look and feel of the student Web site	6
Improve student account setup.	6
Add a section on labor market trends.	5
Complete new business component.	5
Provide direct link to college majors from the pathway Web pages.	4

Participant B2 stated that the Web site was "presented to full staff at one of our high schools." Participant A2 shared her experience: "If you get an administrator on

board, then you get invited into teacher inservices with everyone present. Requests in the three biggest districts in my district came from English departments. It depends on administration." Participant C2 added, "The Web site has been presented each year, twice now to our entire staff. What they liked best was the knowledge and skills information that tie into their standards." Participant A2 explained,

> It always used to be on the counselors. Now, because of the comprehensive school counselor model, others are involved. So a lot of them have to use this to help students build courses, and they are getting a feel for it.

Participant A1 suggested that "the Web site is a marketing tool for CTE teachers to market programs to students." Participant B2 added, "to get kids to sign up for their classes, " and Participant A1 finished Participant B2's statement with "especially dual credit." Participant B2 stated, "It is nice to show advanced standing and transcripted credit courses on the program of study."

Discussion centered on taking advantage of Web 2.0-based technology to increase interactivity with the Web site. Participant A3 remarked,

> Push notifications through text. My experience is that lots of students, they might not go back for a whole year. They always have their phones. If they received a text saying, for example, it's been 30 days, have you checked out your career profile, maybe it would remind them to go and check it out.

Participant B2 added, "specialized notifications related to their interest, cluster, notifications specific to students." Participant C2 joined in with, "Use a push notification to students when a builder updates a program of study. Students can go and update their plans." Participant B2 stated, "During scheduling time, remind students to look at their plans of study and how they align with postsecondary career choices. That doesn't happen now." Participant A1 asked, "What about a smart phone app? Like I have a Facebook app, it tells me who did what on Facebook, " and later suggested "push

notifications through an app or text," prompting Participant B2 to ask, "Will the Web site ever have its own app?"

A discussion focused on the newly developed business component of the Web site. Participant B3 stated, "I'm not sure how it works. Where do you get the information for the businesses?" Participant A3 responded, "They do it themselves. Getting businesses to create profiles is another step in the process that we have to develop." Participant B2 offered, "A business feature is in [two popular career development Web sites utilized in Wisconsin]. So much can be learned from what others did." Participant A3 stated,

> If we market it right and sell it right for the business side. Right now it's free for businesses. Right now it's free, and hopefully we can sell it as helping businesses grow their workforce. It's free advertising for their company. Did you know that if you worked here, you could do this, this, and this?

Another discussion centered on Wisconsin's career clusters framework. Participant B3 stated, "Wisconsin is moving toward career clusters. That's the language you need to speak. I ask, find a job that doesn't fit within a career cluster." The discussion then turned to the Liberal Arts and Sciences cluster with Participant C2 stating, "List careers within the liberal arts cluster." Participant B2 explained, "As we were developing the Web site, people from liberal arts colleges wanted those programs to be represented, and they felt that they could not fit those programs into a career cluster. It was a controversy." Participant A3 expounded,

> I think it was important that we were inclusive of all educational opportunities in Wisconsin, not just the technical colleges. If it was just technical colleges, it would be even more difficult to have everyone use it. When we got the University of Wisconsin and private colleges on board, it was awesome. We never loved it, but we agreed to the liberal arts bucket.

Participant A1 remarked, "A liberal arts program could be within a cluster." Participant

B3 added, “If I am teaching the liberal arts degree, I would want to prove that my major leads to careers.”

Regarding the program-of-study builder tool, Participant B2 stated, “Weakness, the lengthiness of editing and copying and pasting one program of a study at a time versus a feature to find all and replace.” When Participant B2 stated, “and add spell check,” several participants reinforced adding spell check. Participant B2 also stated, “Currently on the builder site, when you type in a class and then a second class, you need to do a semicolon to separate the two courses. It would be better to have a separate line for each course.”

Participant B3 made a remark relating to assessments: “Counselors have said there are more assessments in [name of a career development Web site utilized in Wisconsin] than Wisconsin Career Pathways. In regard to the lack of assessments, Participant C2 stated, “not having a Holland code survey. It has career clusters. Participant A3 followed up with, “Holland is important. I think it’s important that whatever we add would directly correlate to 16 clusters versus profile leading to a specific career.”

Careers were the topic of another discussion. Participant B2 stated, “I often hear, ‘the career I like isn’t listed.’ Link out to other careers.” Participant C2 responded, “You can do a search.” Participant A3 pointed out, “Doctor is not there. Physician is there,” Participant B2 added, “Tattoo artist and jewelry maker. There are always going to be kids who have a specific career.” Participant A3 noted, “Career page lists related careers, new feature.” Participant B2 cautioned, “can’t have too long a list of careers.”

In reference to adding colleges, Participant B3 cited “programs, majors of colleges outside of Wisconsin.” Participant B2 suggested, “links to non-Wisconsin

postsecondary majors and programs." Participant B1 warned, "[Name of for-profit college, name of another for-profit college], cosmetology, huge can of worms with private for-profit schools, but they are alternatives for students."

Participant A1 suggested adding a "budget component. [Name of career development Web site utilized in Wisconsin] has a budget calculator. They can do a little reality check when they see their income." Participant B2 added the Web site "doesn't have a financial literacy piece." Participant C2 shared, "Student thinks, 'archeologist, $26,000, that sounds good.' No, that's not good. Student has no clue. You're probably going to have to leave Wisconsin to become an archeologist."

Enhancing the Web site with additional features was discussed. Participant B2 noted a "lack of elementary connection and alignment to middle and high school. [An] elementary piece and work-based learning pieces are not there." Participant C2 suggested adding "A resume feature into their profile" with Participant B2 suggesting a "resume template" and "cover-letter template." Participant A3 dreamed, "if we had the course scheduler," to which Participant A1 stated, "Schools pay a ton of money for a course scheduler." Participant A1 suggested adding "Youth Apprenticeship on business piece," and Participant C2 asked, "Is it possible to put Youth Apprenticeship on the education side?" Participant B1 replied, "Ideally, schools would show Youth Apprenticeship on their programs of study."

According to Participant C2, difficulties arose "when students forget their username and password." Participant B2 stated, "When [name of project technology coordinator] did updates, there were major technical issues, and it took two class periods of time. Perhaps a message, 'Web site currently under development.' Test more when updates are made to make sure site is performing."

Participant B2 asked, “Do we have enough technical support as the Web site grows?” to which Participant A1 responded, “With growth comes additional costs. What would the costs be in the future?” The word *sustainability* was added to the discussion by Participant B2.

The fifth research question from the semistructured focus-group session interview protocol was the following: “What is your reaction to the preliminary plan for ongoing development and improvement of the Web site?” This researcher drew specific attention to the recommendations section of the preliminary plan. Only one comment was made by Participant B3: “Regarding Item 5 of the Recommendations, add parents and businesses to make it a community-wide marketing plan.” In asking the sixth question, “Is there anything else you would like to comment on related to this research study?”, Participant B3 smiled coyly and stated, “The site should be always free.”

Summary

This chapter provided a detailed description of the data-collection processes in this evaluative research study to develop a comprehensive plan for ongoing development and improvement of the WICareerPathways Web site. The analysis began with a review of the project documentation and literature to determine expected outcomes of the Web site. Next, the researcher presented a detailed analysis of the quantitative and qualitative data collected from the three online stakeholder surveys to determine the satisfactory components of the Web site and identify unmet stakeholder needs was conducted.

Based on survey results, the researcher developed a preliminary plan for the ongoing development of the Web site and conducted a follow-up focus-group session to collect additional data and reaction to the preliminary plan. Based on an analysis of the qualitative data collected at the focus-group session, the researcher finalized the plan for

ongoing development and improvement of the Web site. Chapter 5 provides the findings, conclusions, implications, limitations, and recommendations for future research.

Chapter 5: Discussion

Overview of the Study

The purpose of this evaluative research study was to develop a comprehensive plan for ongoing development and improvement of the WICareerPathways Web site based on data collected from stakeholder sources. The WICareerPathways Web site aids secondary educators in the development of secondary-to-postsecondary programs of study, assists middle and high school students in career exploration and academic planning, and helps middle and high school counselors guide students for success in careers and college by providing them with access to school-wide and individual student Web-site activity. Career-prep coordinators serve as administrators of their specific technical college's programs and manage high school users on the Web site. Four research questions were asked:

1. What are the expected outcomes of the WICareerPathways Web site?

2. What are the satisfactory components of the WICareerPathways Web site as reflected in data collected by the researcher from technical college career-prep administrators, middle and high school counselors, and high school program-of-study builders?

3. Which stakeholder needs are not being met by the WICareerPathways Web site as reflected in the data collected by the researcher from technical college career-prep administrators, middle and high school counselors, and high school program-of-study builders?

4. Based on the data collected, what is the researcher's comprehensive plan for ongoing development and improvement of the WICareerPathways.org Web site?

The researcher used a mixed-methods approach with a sequential explanatory

design. First, a review of project documentation and literature was conducted to identify the expected outcomes upon which to evaluate the WICareerPathways Web site. In the initial phase of data collection, the researcher created three online survey instruments to collect quantitative and qualitative data from three stakeholder groups: (a) career-prep administrators (n = 15), (b) middle and high school counselors and advisers (n = 68), and (c) program-of-study builders (n = 88). The survey findings were analyzed in relationship to Research Question 2 (satisfactory components) and then in relationship to Research Question 3 (unmet stakeholder needs). The researcher statistically analyzed the quantitative data and organized the qualitative data with a coding process to categorize and reduce them down to themes. The researcher then linked the quantitative and qualitative data and analyzed how the data complemented each other.

Following the analysis of data collected in the initial phase, this researcher prepared a preliminary plan for the ongoing development and improvement of the WICareerPathways Web site. The results of the data collected in the initial phase and researcher's preliminary plan were shared and critiqued at a follow-up focus-group session with participants (n = 8) representing a mix of career-prep administrators, counselors and advisers, and program-of-study builders. Qualitative data collected at the focus-group session were analyzed, and this researcher finalized the plan.

Summary and Interpretation of the Findings

This section summarizes and interprets the findings of this study. The findings are presented by research question.

Research Question 1. Based on a review of the project documentation, creating a user-friendly Web site organized by career clusters and pathways was seen as an essential resource for Wisconsin stakeholders. From the beginning of the WICareerPathways Web

site project, this was a significant expected outcome. A review of the project documentation revealed that the Web site is a unique resource that supports secondary-to-postsecondary program-of-study development as outlined in Perkins IV (2006), Wisconsin's 5-year state plan (2008), and academic and career development and planning as set forth in Wisconsin's comprehensive school counseling model (Spear et al., 2007). Through a dynamic data-driven Web-based application, the development of programs of study are integrated with individualized academic and career planning within Wisconsin's career clusters framework, which was adopted from the National Career Clusters™ Framework (NASDCTEC, 2013a).

The second expected outcome of the WICareerPathways Web site was that it would be seen as an essential tool to support the development of programs of study, and the published programs of study would serve as the foundation for students' academic career plans. A review of the literature uncovered that recent Perkins IV (2006) legislation is focused on integrating academic and career and technical education through secondary-to-postsecondary program-of-study development. National and state efforts, such as OVAE's design framework (Perkins Collaborative Resource Network, n.d.b) and the WDPI and WTCS (2011) guide, supported the development and implementation of programs of study.

The third expected outcome of the WICareerPathways Web site was that it would assist middle and high school students in career exploration and academic planning by providing access to careers, postsecondary options in Wisconsin, and high school programs of study, all within Wisconsin's career cluster framework. The literature review provided evidence that students benefit from taking career and technical education in high school, and the integration of career and technical education with academic courses

leads to positive postsecondary outcomes (Fletcher & Zirkle, 2009). The program-of-study concept is a new reform initiative, but early results of a study by Alfeld and Bhattacharya (2012) pointed out that most students believed they were more engaged in school and prepared for a career by partaking in a career-focused program of study. Students involved in programs of study were more likely to be on track to graduate than students not participating in programs of study (Castellano et al., 2012). The National Career Clusters™ Framework provides the organizational structure for programs of study (ACTE, 2010; NASDCTEC, 2013a).

The fourth expected outcome of the WICareerPathways Web site was that it would aid counselors and advisers in guiding students in career development and academic and career planning. School counseling has shifted to a comprehensive program of guidance and counseling that focuses on the development of the whole student in the academic, career, and social or personal domains (ASCA, 2011; Gysbers, 2001). OVAE recognized that an important component of a rigorous program of study is counseling and guidance (Perkins Collaborative Resource Network, n.d.b). Super's (1990) life-span life-space theory and the social cognitive career theory framework of Lent and Brown (1996) emphasized the importance of career exploration and preparation during adolescence.

Career development is a continuous process, and career planning is greater for students with high levels of career decision-making confidence, work experience, and academic achievement (Creed et al., 2007; Skorikov, 2007). Personality, positive emotions, social supports, and goals also play a role in adolescent career development (Hirschi et al., 2011). Goal setting, specifically, will result in greater career planning (Rogers et al., 2008). Students who make use of a personal development plan take more action in directing their careers than students without a plan (Kuijper et al., 2011).

Solberg et al. (2012) highlighted that not only students but parents and teachers perceived that individualized learning plans increased activities related to exploring postsecondary options and careers and led to increased academic motivation as well as development of goal-setting and career-search skills. Withington et al. (2012) discovered that an individual graduation-planning process increased parental involvement and career-guidance activities with school counselors. The process also improved attitudes toward career and technical education.

The fifth expected outcome of the WICareerPathways Web site found in the literature review was that the users would find it easy to use, useful, and satisfy their needs based on their role as one of three users: career-prep administrators, counselors and advisers, and program-of-study builders. Popular computer-based systems provide information about career preparation and development, education and training, and labor-market information. These systems typically include online assessments, searchable databases, and student activity records that can be monitored by counselors. Some use Web 2.0 technology that offers a superior and dynamic user experience. Many now have an electronic portfolio feature to help students develop individualized learning plans (Solberg et al., 2012). Lund (2001) developed a practical survey tool for evaluating Web sites called the Usefulness, Satisfaction, and Ease of Use (USE) Questionnaire with the goal of making the items as simply worded and general as possible. When attempts to reach Mr. Lund failed, this researcher created an online survey instrument for each of the three stakeholder groups modeled on Lund's USE Questionnaire. The surveys contained simple and straightforward items relating to usability (ease of use), usefulness, and satisfaction.

The sixth expected outcome of the WICareerPathways Web site was that it is

expected to undergo further developments and improvements based on user feedback. The literature review included seven evaluation models: (a) objectives-based evaluation, (b) logic models, (c) theory-based evaluation, (d) the consumer-oriented approach, (e) decision-oriented evaluations, (f) responsive evaluations, and (g) developmental evaluation. This researcher chose the developmental-evaluation approach (Patton, 1994, 1996, 2011). According to Patton (1994, 1996, 2011), developmental evaluation supports innovative programs in their ongoing development and improvement. The concept of programs of study is a relatively new and emerging reform initiative, especially in Wisconsin where each school district makes its own decisions about development and implementation of programs of study (Alfeld & Bhattacharya, 2012). The Web site is new and evolving, and the project team is open to exploring new possibilities to further its development. Since its inception, the Web site has been in a constant state of development, expansion, upgrade, and improvement.

Research Question 2. To identify the satisfactory components of the WICareerPathways Web site, the researcher analyzed the results of each survey separately. First, the highest overall mean scores of the scaled items were determined, and then the highest mean scores within each section of the scaled items were determined. When compared, each analysis produced only slightly different results. By reviewing and analyzing the responses to the open-ended questions from each of the surveys and then combining the results, dominant themes relating to the satisfactory components of the WICareerPathways Web site emerged.

Quantitative data reflecting satisfaction were collected from career-prep administrators. Based on the highest mean scores of the scaled items from the career-prep administrator survey, career-prep administrators were most satisfied with the technical

support they received. They would recommend the WICareerPathways Web site to counselors, teachers, administrators, and students at the middle and high schools within their districts. Career-prep administrators found it most easy to add program-of-study builders and counselor and advisers from the high schools in their district; add their college programs to pathways; and add, remove, or edit their college's associate degree, technical diploma, and apprenticeship programs on the Web site.

Quantitative data reflecting satisfaction were collected from counselors and advisers. Based on the highest mean scores of the scaled items from the counselor and adviser survey relating to the student Web site, counselors and advisers found that the student Web site provides useful information to guide students in college and careers. Counselors and advisers found it easy for students to take the career cluster interest inventory and explore clusters, pathways, careers, high school programs of study, and college majors and programs based on their career clusters interest inventory. Counselors and advisers found the student Web site to be user-friendly. The student Web site met their expectations.

In regard to the counselor components on the WICareerPathways Web site, counselors and advisers would recommend this Web site to a school counselor or adviser. They found the counselor components easy to navigate, easy to view school-wide data, and user-friendly. Counselors and advisers were satisfied with the reliability and speed of the counselor components.

Quantitative data reflecting satisfaction were collected from program-of-study builders. Based on the highest mean scores of the scaled items from the program-of-builder survey, builders found it most easy to access clusters, pathways, college majors and programs, and careers and search for existing programs of study on the

WICareerPathways Web site. Program-of-study builders were satisfied with the Web site's speed and reliability.

Qualitative data reflecting satisfaction were collected from stakeholder surveys. The most satisfactory aspect of the WICareerPathways Web site as reflected by a qualitative analysis of the open-ended questions related to usability. Stakeholders conveyed that the Web site was easy to use, easy to navigate, and user-friendly. Academic and career planning was the second most satisfactory component cited. The Web site is a good tool for teachers, students, parents, and counselors, and it brings another dimension into the career planning process. The Web site focuses on making students aware of career clusters and pathways. Students can search for careers and create a profile. They can convert a program of study from a high school to their own customizable plan that extends to college. The to-do list by grade on the academic career plan is a helpful feature.

Another often-cited comment reflecting satisfaction was the amount of up-to-date information contained on the WICareerPathways Web site. Several statements related to stakeholders expressing general appreciation for the Web site. Users expressed satisfaction with the program-of-study builder tool related to the ease in entering information and building programs of study on the Web site. Program-of-study builders and counselors and advisers found satisfaction with the organization of postsecondary options by clusters and pathways and career information, specifically the links to My Next Move and WORKnet. They also were satisfied with the overall visual appeal of the Web site and that it was free. Stakeholders mentioned positive training experiences and expressed satisfaction with the online career cluster inventory. Stakeholders also conveyed a significant number of positive remarks relating to students' perceptions of the

Web site, many of which related to ease of use. Two comments related to positive feedback from parents.

Qualitative data reflecting satisfaction were collected from participants during the follow-up focus-group session. Participants reflected satisfaction with several elements of the WICareerPathways Web site, including the Web site serving as a venue for educators, parents, and students to learn and use the same terminology, its user-friendliness, and the technical support provided. Several student features were praised: the look and feel, locker, and connection of students to their schools. They also expressed satisfaction with the connection to Wisconsin's three higher education sectors as well as the links to WORKnet and My Next Move on the career Web pages. The new connection to businesses was discussed as a potential future strength. Another area of strength identified was the data available for career-prep administrators and counselors. Participants also complemented the new Web pages relating to content from the WTCS and WDPI (2011) program-of-study implementation guide, the copy-and-paste program-of-study builder tool feature, and how the Web site's openness supports program-of-study development and implementation.

Research Question 3. To identify unmet stakeholder needs, the researcher analyzed the results of the scaled items from each survey separately. First, the lowest overall means scores were determined, and then the lowest mean scores within each section of the scaled items were determined. When compared, each analysis produced only slightly different results. By reviewing and analyzing the responses to the open-ended questions from each of the surveys and then combining the results, dominant themes relating to the unmet needs of the WICareerPathways Web site stakeholders emerged.

Quantitative data reflecting unmet needs were collected from career-prep administrators. Based on the lowest mean scores of the scaled items from the career-prep administrator survey, career-prep administrators perceived the WICareerPathways Web site as least satisfactory in helping them connect with the high schools in their district. They also perceived low satisfaction with their college programs providing useful information for counselors and advisers to assist students in developing academic career plans. Career-prep administrators expressed low satisfaction with the reports on the Web site and the Web site's speed and reliability.

Quantitative data reflecting unmet needs were collected from counselors and advisers. Based on the lowest overall mean scores of the scaled items from the counselor and adviser survey related to the student Web site, counselors and advisers found it least easy for students to convert a program of study to an academic plan; change their high school; and add photos, documents, and links to their MiLocker. Counselors and advisers were least satisfied with the technical support they received when guiding students on the student Web site.

Regarding the counselor components based on the lowest overall mean scores, counselors and advisers found that setting up a student group to be the least easy and useful. Counselors and advisers were least satisfied with the training materials, training, and technical support they received.

Quantitative data reflecting unmet needs were collected from program-of-study builders. Based on the lowest mean scores of the scaled items from the program-of-study builder survey, program-of-study builders were least satisfied with the training they received, technical support, and program-of-study builder tool. The program-of-study builders also perceived low satisfaction with their programs of study providing useful

information for counselors to assist students at their high school to develop a personal academic career plan.

Qualitative data reflected unmet needs were collected from stakeholder surveys. The qualitative analysis of the open-ended questions uncovered two of the greatest stakeholder needs related to programs of study. Program-of-study builders would like an easier and quicker way to edit and copy existing programs of study. Builders would like more WICareerPathways Web-site training and program-of-study implementation training. They would like training for administrators and counselors. Program-of-study builders were not alone in expressing training needs. Counselors and advisers also wanted more training, particularly on the student Web-site and counselor components. They suggested various delivery training modes. Along the same lines, builders and counselors frequently commented about the need for more information regarding the career-development process, postsecondary programs, and adding courses to plans. Promotion was another aspect of the Web site that generated a high number of comments. Multiple comments related to improving the Web site by adding new assessments.

Linking to career development Web sites commonly used in Wisconsin schools also surfaced. Many comments related to users preferring other Web sites, with one particular resource mentioned often. Expanding postsecondary options by adding out-of-state colleges was often cited. Difficulty in navigating was mentioned by all three user groups. Adding more features related to careers was noted. Several comments related to the design of the student Web site, specifically making it look more like Facebook, removing the black background, and adding more photos. Stakeholders reported that some students have difficulty in setting up accounts. Expanding the Web site to include labor-market trends was mentioned. Participants also looked forward to completion of the

newly added business component. Program-of-study builders would like to see direct links to Wisconsin private college and University of Wisconsin majors. Stakeholders also conveyed that they received minimal feedback from students or knew of minimal use of the Web site by students.

Multiple-choice questions were asked of the program-of-study builders and counselors and advisers to obtain demographic information relating to the respondent's role, type of school, gender, and age. Although the demographic information was not central to this study, the demographic results may help to identify implications, if any, for the ongoing development and improvement of the WICareerPathways Web site.

Qualitative data reflecting unmet needs were collected from participants during the follow-up focus-group session. Participants discussed areas of weakness, improvements of existing features, and development of new features. Increasing awareness of the Web site was recommended by expanding its reach to academic teachers, promoting it at state events, presenting at teacher inservice programs, gaining support from school administrators, and using it as a marketing tool for career and technical education teachers. Discussion also centered on taking advantage of existing Web 2.0-based technology to increase Web-site interactivity through a smart phone app and specialized notifications to increase student usage. Suggestions included communicating information to students regarding their interests and reminding them to update their academic career plan during scheduling time. The newly developed business component has the potential to help businesses grow their workforce.

Echoing the survey results, the weaknesses of the program-of-study builder tool were discussed, specifically the time required to edit existing programs of study and lack of a spell-check feature. Recommended additions to the student Web site included

assessments, careers listed by common name, colleges within and outside of Wisconsin, and a college financial-planning piece. An elementary connection, work-based learning component, resume and cover letter templates, and a course scheduler were suggested as well. Increasing pretesting to avoiding technical issues that seem to occur during updates was recommended. Rising costs and sustainability were identified as threats to the Web site's continuation, yet free access to the Web site was recommended.

Conclusions

Based on the data collected and analyzed during the course of this evaluative study, the following conclusions were reached regarding the WICareerPathways Web site. The WICareerPathways Web site was seen as an essential career pathways resource for Wisconsin stakeholders. The project documentation confirmed the Web site supported the development of programs of study and published programs of study served as the foundation for students' academic career plans. However, it was not necessarily clear to the program-of-study builders or the counselors and advisers that the programs of study served as the foundation for students' academic career plans. The suggestions to expand the Web site's reach to those beyond career and technical education bear this out, as does the need for additional training for program-of-study builders and counselors and advisers.

The concept of programs of study is a relatively new initiative, especially in Wisconsin where each school district makes its own decisions about development and implementation of programs of study (Alfeld & Bhattacharya, 2012). The Web-site program-of-study builder tool was launched in 2010, a year ahead of the WTCS and WDPI (2011) program-of-study implementation guide. The launch of the student Web site in 2011 and counselor components in 2012 preceded the development of an academic

and career planning guide. It is not surprising that these initiatives and the use of the Web site as a resource to facilitate them were not fully understood and increasing awareness and providing training could lead to a clearer understanding of how the Web site supports these initiatives, thereby increasing its usefulness in the minds of stakeholders.

The WICareerPathways Web site assists middle and high school students in career exploration and academic planning by providing access to careers, postsecondary options in Wisconsin, and high school programs of study, all within Wisconsin's career cluster framework. The project documentation reflected that the Web site contains these elements and research participants expressed satisfaction with the information provided on the Web site. However, the data also revealed that expanding current information and adding new information are warranted.

The WICareerPathways Web site aids counselors and advisers in guiding students in career development and academic and career planning. Counselors and advisers were satisfied that the student Web site provided useful information to guide students in college and careers and with sufficient information to understand how programs of study are integrated with students' academic career plans within the career cluster framework. Nonetheless, counselors and advisers found it least easy for students to convert a program of study to an academic plan. They expressed their need for more information and training. This training is not just to guide them in the use of the Web site but to provide more information on the academic and career planning initiative.

Users of the WICareerPathways Web site found it easy to use, useful, and satisfied their needs based on their role as a career-prep administrator, counselor or adviser, or program-of-study builder. Career-prep administrators found it most easy to add program-of-study builders and counselors and advisers from the high schools in their

district; add their college programs to pathways; and add, remove, or edit their college's associate degree, technical diploma, and apprenticeship programs. However, the Web site fell short in helping them connect with the high schools in their district, perhaps related to their request for usage and data reports that could assist them in targeting districts that are not taking advantage of the Web site. Results of Web-site usage reports could reflect how involved school districts are with program-of-study development and student academic and career planning. The career-prep administrators also expressed frustration with the navigation of the Web site.

Program-of-study builders found the WICareerPathways Web site easy to access clusters, pathways, college majors and programs, and careers and search for existing programs of study. They believed the instructions and prompts to build a program of study to be helpful, and they understood how the programs of study were integrated with the student academic career plans. The builders clearly expressed their need for an easier and quicker way to edit and copy existing programs of study. They would like more training, not just on the Web site but on the program-of-study implementation process.

The WICareerPathways Web site should undergo further developments and improvements based on user feedback. The data from users identified areas of weaknesses, opportunities for improvements, and additional features. According to Patton (2011), "data collected during the evaluation provides quick, credible feedback for adaptive and responsive development" (p. 305). Project documentation references the Web site's ability since its inception to offer refinements, updates, and new features that enhance its ease of use, usefulness, and satisfaction. This study provided the data to continue ongoing development based on stakeholder needs. The only potential setbacks uncovered were additional costs as a result of increased usage and the uncertainty of

future funding to sustain the Web site.

Recommendations

The following recommendations for ongoing development and improvement of the WICareerPathways Web site are included in this section. They are based on a review of the project documentation, literature review, and data collected and analyzed during this study.

Improve program-of-study builder tool. To meet program-of-study builder needs, this researcher recommends improving the program-of-study builder tool. This could be accomplished by making it easier and quicker for program-of-study builders to edit, update, and copy existing programs of study and adding spell-check and find-and-replace features.

Provide more training. In response to program-of-study builders and counselors and advisers, this researcher recommends more training. Training should cover Wisconsin's program-of-study implementation process and include specific guidance on the use of the WICareerPathways Web site to build programs of study. The training should be broadened to those not currently targeted, such as administrators and academic teachers. Training on how programs of study serve as the foundation for students' academic career plans is essential. Also necessary is training on how to use the student Web site and counselor components, specifically the online conversion of a program of study to a student's academic career plan. The training should be accessible and convenient for users and delivered through a variety of methods (i.e., hands-on interactive training, webinars, and e-mail communications). Training materials with content on the career development process and academic and career planning should be developed.

Build reporting capacity. Creating reports relating to usage and specific data as requested by career-prep administrators is recommended by this researcher. Reports are a critical resource to assist them and others at their technical colleges in connecting with high schools in their district. When focusing on areas of weaknesses, improvements, and additions, it is important to not lose sight of the satisfactory components of the WICareerPathways Web site. This researcher recommends maintaining the manner in which career-prep administrators add high school program-of-study builders and counselors and advisers; add their college programs to pathways; and add, remove, or edit their college's associate degree, technical diploma, and apprenticeship programs. They are satisfied with these Web-based tools.

Develop a marketing plan. This researcher recommends developing a marketing plan to increase awareness and promote the WICareerPathways Web site to school districts, students, parents, and businesses. In addition, promoting the new business feature to employers will help students learn about the workforce in their area and the state. This could increase the visibility of businesses to middle and high school students and staff and would support the role of businesses in students' academic and career planning.

Increase Web-site interactivity. Taking advantage of push-notification technology to increase Web-site interactivity is recommended. The development of a mobile application could prove to be a convenient and effective communication tool that facilitates increasing the Web site's availability and accessibility to students. Push-notification technology could automatically remind (a) students to review and update their profiles and academic career plans during scheduling times, (b) program-of-study builders to update their programs of study prior to submitting their Perkins application,

(c) career-prep coordinators to update their college offerings during the summer, and (d) counselors and advisers to review school-wide activity and individual student data prior to student and parent conferences.

Add assessments. This researcher recommends offering additional assessments on the WICareerPathways Web site to help students discover their individual career path. The assessments should be aligned with career clusters. The preferred assessment to add is the Holland-code survey available through software provided by O*NET because the results have already been aligned with career clusters (O*NET Resource Center, n.d.).

Add information. This researcher recommends adding information relating to postsecondary options, careers, and job data to the WICareerPathways Web site. Links that connect directly to specific Wisconsin private college and University of Wisconsin majors, rather than a listing of academic programs, are needed. Reorganizing majors and programs within the liberal arts cluster into career clusters, adding Wisconsin colleges that currently do not have a presence, and developing connections to out-of-state colleges and universities, especially those located in neighboring states, are also necessary. As more information is added to the Web site, it is important to maintain accessibility related to clusters, pathways, college majors and programs, careers, and programs of study.

Connect with other career-development resources. Connecting with the online subscription-based career-development resource offered by the University of Wisconsin is recommended by this researcher. This collaboration would benefit users of both Web sites.

Improve performance, technical support, and navigation. This researcher recommends continuing to improve the overall performance (speed and reliability) of the WICareerPathways Web site. Technical support and navigation should be improved to

meet the stakeholder expectations.

Implications of the Findings

The combination of the review of the WICareerPathways Web-site project documentation, literature review, expected outcomes, qualitative and quantitative survey results, development of a preliminary plan, and qualitative results of the follow-up focus-group session resulted in the formation of the recommendations to further develop and improve the Web site. The mixed-methods approach with a two-phase explanatory sequential design was instrumental in answering the research questions. According to Fitzpatrick et al. (2011), a mixed-methods approach is typical in evaluation "because few questions can be answered by only one strategy" (p. 384). This research design could be of interest to others who are evaluating an online resource that supports an educational purpose.

The satisfactory components of the WICareerPathways Web site were exposed by this researcher. Maintaining these attributes while the Web site undergoes improvements and additions will be crucial to its ongoing success. Unmet stakeholder needs were revealed. By addressing their needs, users could derive greater satisfaction, use the Web site more often and to its fullest potential, and encourage student use. Increased promotion of the Web site could lead to greater awareness of the Web site among middle and secondary school administrators, teachers, counselors and advisers, and students. The Web site would then be reaching a greater audience to support federal, state, and local initiatives relating to Wisconsin's clusters and pathways, program-of-study implementation, and student academic and career planning. This would provide the impetus to continue support for the ongoing development, improvement, and growth of the Web site and assure its sustainability.

Limitations of the Study

There were a number of challenges facing this researcher during this evaluative study. These challenges relate to reaching target participants, low response rates, incomplete responses, transferability to other states' career pathway Web sites, new Web-site components added during this research study, lack of participation by student users and those who do not use the Web site, feasibility of implementing recommendations, and difficulty in establishing cause and effect.

There was difficulty in reaching the target participants for the program-of-study builder and counselor and adviser surveys. This researcher was deluged with approximately 50 undeliverable messages in response to the e-mail communication prenotifying the target program-of-study builders and approximately 16 undeliverable messages in response to the target counselors and advisers. An attempt to search for correct e-mails was not productive. According to Sue and Ritter (2012), unsolicited bulk e-mail messages may be blocked by e-mail service providers. This researcher contends that some of the e-mail communications may have been blacklisted as potential scam. This is not an uncommon occurrence at Wisconsin schools based on difficulties experienced when automated messages from the Web site's e-mail address (info@careerpathways.org) only get through after a request is made to whitelist the domain address. Another factor contributing to undeliverable messages may be a shifting labor market in the educational field. Retirements, restructuring, and movement in positions and school districts routinely occur in Wisconsin.

Response rates. The response rate to the career-prep administrator survey was extraordinarily high with 100 percent of the target population participating in the survey. This was anticipated because the total population was small and all were familiar with the

WICareerPathways Web site. However, the responses to the program-of-study builder survey only increased to 88 following two e-mail reminder communications. Likewise, responses to the counselor and adviser survey only increased to 68 following two reminders. According to Sue and Ritter (2012), obtaining high response rates can be challenging when conducting online surveys, and this proved to be the case with the program-of-study builder and counselor and adviser surveys.

Incomplete responses. As respondents progressed through the online program-of-study builder survey and counselor and adviser survey, the number of responses dropped. Only 89.9% of the program-of-study survey respondents completed the survey, and only 74.6% of the counselor and adviser survey respondents completed the survey. These results indicate that the surveys may have been too lengthy, especially the counselor-adviser survey with a total of 51 items.

Transferability. To this researcher's knowledge, the WICareerPathways Web site is unique. This researcher is unaware of any Web site that organizes careers, postsecondary options and secondary programs of study within the career cluster framework, and integrates programs of study with student academic career plans, thereby allowing students to select a program of study interactively and convert it to an academic career plan. Therefore, the study may not be transferable to other Web sites supporting program-of-study development or academic career planning.

New components. Several components of the WICareerPathways Web site were expanded and upgraded during the course of this research study. Participants in this study who only used the Web site occasionally may not have been familiar enough with some of the features to assess their usability, usefulness, or satisfaction.

Students. One of the key stakeholder groups utilizing the WICareerPathways

Web site is middle and high school students, but it was not feasible for this study to include students under the age of 18. Although the researcher received comments relating to students through an open-ended survey question ("What feedback, if any, do you receive from students who use the WICareerPathways.org/Students site?"), asking students directly would have provided greater insights into their perceptions and needs.

Nonusers. The results of the research were limited only to those participants who used the WICareerPathways Web site and did not inform the researcher of why key stakeholders may not have been using the site. Ascertaining the reasons why the Web site was not being utilized by those who were aware of it may provide insights to further improve or develop the Web site.

Feasibility of implementing recommendations. Technical, political, or financial challenges may arise in implementing the recommendations. The WICareerPathways Web-site project team may not fully support the recommendations. The addition of sought-after features may require costly rework. Collaborative efforts to connect with other career development resources may fail. Federal and statewide priorities may shift (i.e., the importance of career pathways and academic and career planning may wane). The next reauthorization of Perkins legislation may cause Wisconsin stakeholders to move in a different direction. State and federal funding are never certain; sustainability of the Web site is under constant threat.

Cause and effect. The WICareerPathways Web site integrates career-focused programs of study within student academic and career planning, all within the Wisconsin career clusters framework. The Web site offers unique interactive Web-based features for Wisconsin middle and high school students, school counselors, and high school program-of-study builders. However, it would be difficult if not impossible to determine how this

interactive resource achieves specific outcomes related to the career pathways initiatives it supports. For example, this research study did not attempt to link Web-site use with student college and career readiness.

Future Directions of Research

Future research should involve middle and high school student users of the WICareerPathways Web site to identify components they deem satisfactory and uncover their unmet needs. This could be accomplished through the same mixed-methods research design used in this study. First, the researcher could conduct an online survey similar to the student Web-site portion of the counselor and adviser survey, develop a preliminary plan to address student needs, follow-up with a focus-group session to review the survey results and plan, and share further insights into the ongoing development and improvement of the Student Web site. As businesses create a Web-site presence, a similar study could be conducted to address their needs. This same mixed-method research approach with a sequential explanatory design could be implemented to conduct developmental evaluations for the ongoing development and improvement of other Web-based applications and resources that support educational initiatives.

References

Achieve. (2004). *Ready or not: Creating a high school diploma that counts.* Washington, DC: Author.

Achieve. (2008). *Out of many, one: Toward rigorous common core standards from the ground up.* Washington, DC: Author.

Achieve. (2011). *Closing the expectations gap 2011: Sixth annual 50-state progress report on the alignment of high school policies with the demands of college and careers.* Washington, DC: Author.

Alfeld, C., & Bhattacharya, S. (2012). Mature programs of study: A structure for the transition to college and career. *International Journal of Educational Reform, 21*, 119-137.

Aloo, J. O., Simatwa, E. M., & Nyang'ori, R. A. (2011). Impact of the school based teacher recruitment policy on the distribution and retention of teachers in public secondary schools in Kenya: A case study of Nyando District. *Educational Research, 2*, 1006-1020.

American School Counselor Association. (2011). *The ASCA national model: A framework for school counseling programs. Executive summary.* Retrieved from http://www.ascanationalmodel.org/Ascanationalmodel/media/ANM-templates/ANMExecSumm.pdf

Association for Career and Technical Education. (2010). *What is "career ready"?* Retrieved from https://www.acteonline.org/general.aspx?id=1964

Bae, S. H., Gray, K., & Yeager, G. (2007). A retrospective cohort comparison of career and technical education participants and non-participants on a state-mandated proficiency test. *Career and Technical Education Research, 32*, 9-22.

Bardick, A. D., Bernes, K. B., Magnusson, K. C., & Witko, K. D. (2004). Junior high career planning: What students want. *Canadian Journal of Counselling, 38*, 104-117.

Bishop, J. H., & Mane, F. (2004). The impacts of career-technical education on high school labor market success. *Economics of Education Review, 23*, 381-402.

Bishop-Clark, C., Hurn, J., Perry, S. A., Freeman, M. B., Jernigan, M., Writer, F., & Weldy, N. (2010). High school teachers teaching college courses to career technical education students? A story of success. *Journal of Career and Technical Education, 25*, 78-93.

Bottoms, G., & Young, M. (2008). *Lost in transition: Building a better path from school to college and careers.* Atlanta, GA: Southern Regional Education Board.

Bowers, J., & Hatch, P. A. (2005). *The ASCA national model: A framework for school counseling programs* (2nd ed.). Alexandria, VA: American School Counselor Association.

Bragg, D. (1999). Reclaiming a lost legacy: Integration of academic and vocational education. In A. J. Pautler, Jr. (Ed.), *Workforce education: Issues for the new century* (pp. 181-196). Ann Arbor, MI: Praaken.

Bridgeland, J. M., Dilulio, J. J., Jr., & Morison, K. B. (2006). *The silent epidemic: Perspectives of high school dropouts*. Washington, DC: Civic Enterprises.

Budge, S. L., Solberg, V. S., Phelps, L. A., Haakenson, K., & Durham, J. (2010, April). *Promising practices for implementing individualized learning plans: Perspectives of teachers, parents, and students.* Paper presented at the annual meeting of the American Educational Research Association, Denver, CO.

Burke, J. C. (Ed.). (2005). *Achieving accountability in higher education: Balancing public, academic, and market demands.* San Francisco, CA: Jossey-Bass.

Camp, W. G. (1983). Social efficiency and vocational education: An examination of our changing philosophies. *Journal of Vocational Education Research, 8*(3), 10-19.

Career Clusters--Cooperative Agreements; Notice Inviting Applications for New Awards for Fiscal Year (FY) 2001; Notice, 65 Fed. Reg. 65:235.

Carl D. Perkins Career and Technical Education Act of 2006, 20 U.S.C. § 2302 (2006).

Carl D. Perkins Vocational and Applied Technology Act Amendments of 1990, 20 U.S.C. § 2301 (1990).

Carl D. Perkins Vocational and Technical Education Act of 1998 (PL 105-332).

Carl D. Perkins Vocational Education Act of 1984 (PL 98-524).

Carnevale, A. P., Smith, N., & Strohl, J. (2010). *Help wanted: Projections of jobs and education requirements through 2018*. Washington, DC: Georgetown University, Center on Education and the Workforce.

Casner-Lotto, J., Barrington, L., & Partnership for 21st Century Skills. (2006). *Are they really ready to work? Employers' perspectives on the basic knowledge and applied skills of new entrants to the 21st century U.S. workforce*. Retrieved from http://www.p21.org/storage/documents/FINAL_REPORT_PDF09-29-06.pdf

Castellano, M., Sundell, K., Overman, L. T., & Aliaga, O. A. (2012). Do career and technical education programs of study improve student achievement? Preliminary analysis from a rigorous longitudinal study. *International Journal of Educational Reform, 21*, 98-118.

Cellini, S. R. (2006). Smoothing the transition to college?: The effect of tech-prep programs on educational attainment. *Economics of Education Review, 25*, 394-411.

Chapter 38: Technical college system, §38.001(3)(a)2, Wis. Stats. (2009-10). Retrieved from http://docs.legis.wi.gov/statutes/statutes/38

Chapter 116: Cooperative Educational Service Agencies, §116.01, Wis. Stats. (2009-10). Retrieved from http://docs.legis.wi.gov/statutes/statutes/116.

Chapter 118: General school operations, §118.01(2)(b)1, Wis. Stats. (2009-10). Retrieved from http://docs.legis.wi.gov/statutes/statutes/118

Chapter 120: School district government, §120.12, Wis. Stats. (2009-10). Retrieved from http://docs.legis.wi.gove/statutes/statutues/120

Chung, J. (2009, February 11). Thoughtful consideration: Is the secondary audience really the primary audience? *WI Career Pathways Web Site Newsletter, 1*(3), 1-5.

Coogan, T., & DeLucia-Waack, J. (2007). Students' reported contact with and perception of the role of high school counselors: An examination of the ASCA role standard domains. *Journal of School Counseling, 5*(5). Retrieved from http://jsc.montana .edu/articles/v5n5.pdf

Creed, P. A., Patton, W., & Prideaux, L. (2007). Predicting change over time in career planning and career exploration for high school students. *Journal of Adolescence, 30*, 377-382.

Creswell, J. W. (2007). *Qualitative inquiry and research design: Choosing among five approaches* (2nd ed.). Thousand Oaks, CA: Sage.

Creswell, J. W. (2008). *Educational research: Planning, conducting, and evaluating quantitative and qualitative research* (3rd ed.). Upper Saddle River, NJ: Pearson Education.

Dewey, J. (1915). Education vs. trade-training. *The New Republic, 3*(28), 42.

Dewey, J. (1916). *Democracy and education.* New York, NY: Macmillan.

Domene, J. F., Shapka, J. D., & Keating, D. P. (2006). Educational and career-related help-seeking in high school: An exploration of students' choices. *Canadian Journal of Counselling, 40*, 145-159.

Doolittle, P. E., & Camp, W. G. (1999). Constructivism: The career and technical education perspective. *Journal of Vocational and Technical Education, 16*(1), 23-46.

Durdella, N. R. (2010). Evaluations that respond: Prescription, application, and implications of responsive evaluation theory for community college instructional support programs. *Journal of Applied Research in the Community College, 17*(2), 13-23.

Fitzpatrick, J. L., Sanders, J. R., & Worthen, B. R. (2011). *Program evaluation: Alternative approaches and practical guidelines* (4th ed.). Upper Saddle River, NJ: Pearson Education.

Fletcher, E. C., Jr., & Zirkle, C. (2009). The relationship of high school curriculum tracks to degree attainment and occupational earnings. *Career and Technical Education Research, 34*, 81-102.

Fowkes, K. M., & McWhirter, E. H. (2007). Evaluation of computer-assisted guidance in middle and secondary education settings: Status, obstacles, and suggestions. *Journal of Career Assessment, 15*, 388-400.

Frenette, M. (2010). Career goals in high school: Do students know what it takes to reach them and does it matter? *Canadian Journal of Higher Education, 40*(3), 43-58.

Gabriele, R. (2008). Orientations to happiness: Do they make a difference in a student's educational life? *American Secondary Education, 36*, 88-104.

Gati, I. (1994). Computer-assisted career counseling: Dilemmas, problems, and possible solutions. *Journal of Counseling and Development, 73*, 51-56.

Gentry, M., Peters, S. J., & Mann, R. L. (2007). Differences between general and talented students' perceptions of their career and technical education experiences compared to their traditional high school experience. *Journal of Advanced Academics, 18*, 372-401.

Gibbons, M. M., Borders, L. D., Wiles, M. E., Stephan, J. B., & Davis, P. E. (2006). Career and college planning needs of ninth graders as reported by ninth graders. *Professional School Counseling, 10*, 168-178.

Gordon, H. R. D. (2008). *The history and growth of career and technical education in America* (3rd ed.). Long Grove, IL: Waveland Press.

Gore, P. A., Bobek, B. L., Robbins, S. B., & Shayne, L. (2006). Computer-based career exploration: Usage patterns and a typology of users. *Journal of Career Assessment, 14*, 421-436.

Gray, K. C., & Herr, E. L. (1998). *Workforce education: The basics.* Needham Heights, MA: Allyn and Bacon.

Gugiu, P. C., & Rodriguez-Campos, L. (2007). Semi-structured interview protocol for

constructing logic models. *Evaluation and Program Planning, 30*, 339-350.

Gysbers, N. C. (2001). School guidance and counseling in the 21st century: Remember the past into the future. *Professional School Counseling*, *5,* 96-105.

Gysbers, N. C., & Henderson, P. (2001). Comprehensive guidance and counseling programs: A rich history and a bright future. *Professional School Counseling, 4*, 246-256.

Harris-Bowlsbey, J. (2003). A rich past and a future vision. *Career Development Quarterly, 52*, 18-25.

Harris-Bowlsbey, J., Dikel, M. R., & Sampson, J. P., Jr. (2002). *The Internet: A tool for career planning* (2nd ed.). Tulsa, OK: National Career Development Association.

Harris-Bowlsbey, J., & Sampson, J. P., Jr. (2001). Computer-based career planning systems: Dreams and realities. *Career Development Quarterly, 49*, 250-260.

Harris-Bowlsbey, J., & Sampson, J. P., Jr. (2005). Use of technology in delivering career services worldwide. *Career Development Quarterly, 54*, 48-56.

Hirschi, A., Niles, S. G., & Akos, P. (2011). Engagement in adolescent career preparation: Social support, personality and the development of choice decidedness and congruence. *Journal of Adolescence, 34*, 173-182.

Holland, J. L. (1985). *Making vocational choices: A theory of vocational personalities and work environments* (2nd ed.). Englewood Cliffs, NJ: Prentice-Hall.

Imel, S. (1996). *Computer-based career information systems* (Report No. EDO-CE-96-170). Retrieved from http://www.ericdigests.org/1997-1/career.html

Joint Committee for Standards on Educational Evaluation. (2011). *Program evaluation standards statements.* Retrieved from http://www.jcsee.org/program-evaluation-standards/program-evaluation-standards-statements

Kalchik, S., & Oertle, K.M. (2010, May). The integral role of career development in supporting programs of study and career pathways. *Transition Highlights, 1.* Retrieved from http://occrl.illinois.edu/files/Highlights/highlight_05_2010.pdf

Kim, J., & Bragg, D. D. (2008). The impact of dual and articulated credit on college readiness and retention in four community colleges. *Career and Technical Education Research, 33*, 133-158.

Kosine, N. R., & Lewis, M. V. (2008). Growth and exploration: Career development theory and programs of study. *Career and Technical Education Research*, *33*, 227-243.

Kuijpers, M., Meijers, F., & Gundy, C. (2011). The relationship between learning environment and career competencies of vocational education. *Journal of Vocational Behavior*, *78*, 21-30.

Lent, R. W., & Brown, S. D. (1996). Social cognitive approach to career development: An overview. *Career Development Quarterly, 44*, 310-321.

Lund, A. M. (2001). Measuring usability with the USE questionnaire. *Usability Interface, 8*(2). Retrieved from http://www.stcsig.org/usability/newsletter/0110_measuring_with_use.html

Lynch, P. J., & Horton, S. (2008). *Web style guide: Basic design principles for creating web sites* (3rd ed.) New Haven, CT: Yale University.

Massachusetts Bay School Law. (1642). Retrieved from http://www.constitution.org/primarysources/schoollaw1642.html

McLaughlin, J. A., & Jordan, G. B. (1999). Logic models: A tool for telling your program's performance story. *Evaluation and Program Planning, 22*(1), 65-72.

National Association of State Directors of Career Technical Education Consortium. (2013a). *Career Clusters™ at-a-glance.* Retrieved from http://www.careertech.org/career-clusters/glance/

National Association of State Directors of Career Technical Education Consortium. (2013b). *Common career technical core.* Retrieved from http://www.careertech.org/career-technical-education/cctc/info.html

National Association of State Directors of Career Technical Education Consortium. (2013c). *Student interest survey.* Retrieved from http://www.careertech.org/career-clusters/ccresources/interest-survey.html

National Association of State Directors of Career Technical Education Consortium. (2013d). *2008 knowledge and skills*. Retrieved from http://www.careertech.org/career-clusters/ccresources/knowledge-skills.html

National Career Technical Education Foundation. (2007a). *Career clusters prepare all students for college and careers.* Retrieved from http://web.archive.org/web/20090302090549/http:/www.careerclusters.org/whatis.php

National Career Technical Education Foundation. (2007b). *Career clusters: Frequently asked questions.* Retrieved from http://web.archive.org/web/20090124163519/http://careerclusters.org/faq.php

National Center for Education Statistics. (2011). *Classification of instructional programs (CIP 2000).* Retrieved from http://nces.ed.gov/pubs2002/cip2000/

National Educational Association. (1894). *Report of the committee of ten on secondary school studies with the reports of the conferences arranged by the committee* (2nd ed.). New York, NY: American Book.

O*Net Resource Center. (n.d.). *O*NET computerized interest profiler.* Retrieved from http://www.onetcenter.org/CIP.html

Packard, B. W., Leach, M., Ruiz, Y., Nelson, C., & DiCocco, H. (2012). School-to-work transition of career and technical education graduates. *Career Development Quarterly, 60*, 134-144.

Parnell, D. (1985). *The neglected majority.* Washington, DC: Community College Press.

Partnership for 21st Century Skills. (2010). *Up to the challenge: The role of career and technical education and 21st century skills in college and career readiness.* Retrieved from http://www.p21.org/storage/documents/CTE_Oct2010.pdf

Patton, M. Q. (1994). Developmental evaluation. *Evaluation Practice, 15*, 311-319.

Patton, M. Q. (1996). A world larger than formative and summative. *Evaluation Practice, 17*, 131-144.

Patton, M. Q. (2011). *Developmental evaluation: Applying complexity concepts to enhance innovation and use.* New York, NY: Guilford Press.

Perkins Collaborative Resource Network. (n.d.a). *Perkins IV crosswalks.* Retrieved from http://cte.ed.gov/accountability/crosswalks.cfm

Perkins Collaborative Resource Network. (n.d.b). *Program of study design framework.* Retrieved from http://cte.ed.gov/nationalinitiatives/rposdesignframework.cfm

Poth, C-A., Pinto, D., & Howery, K. (2012). Addressing the challenges encountered during a developmental evaluation: Implications for evaluation practice. *Canadian Journal of Program Evaluation, 26*(1), 39-48.

Prosser, C. A. (1913). The meaning of industrial education. *Vocational Education*, *2,* 401-410.

Provus, M. M. (1971). *Discrepancy evaluation.* Berkeley, CA: McCutchan.

Rogers, M. E., & Creed, P. A. (2011). A longitudinal examination of adolescent career planning and exploration using a social cognitive career theory framework. *Journal of Adolescence, 34*, 163-172.

Rogers, M. E., Creed, P. A., & Glendon, A. I. (2008). The role of personality in adolescent career planning and exploration: A social cognitive perspective.

Journal of Vocational Behavior, 73, 132-142.

Rollison, J., Hill, G., Yu, P., Murray, S., Mannix, D., Mathews-Younes, A., & Wells, M. E. (2012). Evaluation of a complex, multisite, multilevel grants initiative. *Evaluation and Program Planning, 35*, 273-279.

Ross, M. E., Narayanan, N. H., Hendrix, T. D., & Myneni, L. S. (2011). The pragmatist in context of a National Science Foundation supported grant program evaluation: Guidelines and paradigms. *Journal of Multidisciplinary Evaluation, 7*, 111-130.

Sandoval, J. A., Lucero, J., Oetzel, J., Avila, M., Belone, L., Mau, M., . . . Wallerstein, N. (2012). Process and outcome constructs for evaluating community-based participatory research projects: A matrix of existing measures. *Health Education Research,* 27, 680-690.

Skorikov, V. (2007). Continuity in adolescent career preparation and its effects on adjustment. *Journal of Vocational Behavior, 70*, 8-24.

Snedden, D. (1910). *The problem of vocational education.* Boston, MA: Houghton Mifflin.

Snedden, D. (1915). Vocational education. *The New Republic, 3*(28), 41-42.

Solberg, V. S., Phelps, L. A., Haakenson, K. A., Durham, J. F., & Timmons, J. (2012). The nature and use of individualized learning plans as a promising career intervention strategy. *Journal of Career Development, 39*, 500-514.

South Carolina Education and Economic Development Act, South Carolina Statutes and Codes, Title 59, Chapter 59 (2005).

Southern Regional Education Board. (n.d.). *About high schools that work.* Retrieved from http://www.sreb.org/page/1137/about_highschools_that_work.html

Southern Regional Education Board. (2007). *Using the new Perkins legislation to advance high school reform.* Retrieved from http://www.isbe.state.il.us/career/pdf/new_perkins_legislation21.pdf

Spear, G. L., Dahir, C. A., & White, D. (2007). *The Wisconsin comprehensive school counseling model: A resource and planning guide* (Bulletin No. 08025). Milwaukee: Wisconsin Department of Public Instruction.

Staff, J., Harris, A., Sabates, R., & Briddel, L. (2010). Uncertainty in early occupational aspirations: Role exploration or aimlessness? *Social Force, 89*, 659-683.

Stake, R. E. (1973, October). *Program evaluation, particularly responsive evaluation.* Keynote address at the conference New Trends in Evaluation, Institute of Education, University of Goteborg, Sweden.

Stipanovic, N., Lewis, M. V., & Stringfield, S. (2012). Situating programs of study within current and historical career and technical educational reform efforts. *International Journal of Educational Reform, 21*, 80-97.

Stone, D., Jarrett, C., Woodroffe, M., & Minocha, S. (2005). *User interface design and evaluation*. San Francisco, CA: Morgan Kaufmann.

Stone, J. R., III, Alfeld, C., & Pearson, D. (2008). Rigor and relevance: Enhancing school students' math skills through career and technical education. *American Educational Research Journal, 45*, 757-795.

Stone, J. R., III, & Aliaga, O. A. (2005). Career and technical education and school-to-work at the end of the 20th century: Participation and outcomes. *Career and Technical Education Research*, *30*, 125-144.

Stringer, K., Kerpelman, J., & Skorikov, V. (2011). Career preparation: A longitudinal, process-oriented examination. *Journal of Vocational Behavior, 79*, 158-169.

Stufflebeam, D. L. (1971). The relevance of the CIPP evaluation model for educational accountability. *Journal of Research and Development in Education, 5*, 19-25.

Stufflebeam, D. L., & Shinkfield, A. J. (2007). *Evaluation theory, models, and applications.* San Francisco, CA: Jossey-Bass.

Sue, V. M., & Ritter, L. A. (2012). *Conducting online surveys.* Thousand Oaks, CA: Sage.

Super, D. E. (1990). A life-span, life-space approach to career development. In D. Brown & L. Brooks (Eds.), *Career choice and development: Applying contemporary theories to practice* (2nd ed., pp. 17-43). San Francisco, CA: Jossey-Bass.

SurveyMonkey©. (n.d.) *SurveyMonkey© plans and pricing.* Retrieved from https://www.surveymonkey.com/pricing/?ut_source=header

Symonds, W. C., Schwartz, R. B., & Ferguson, R. (2011). *Pathways to prosperity: Meeting the challenge of preparing young Americans for the 21st century.* Cambridge, MA: Harvard Graduate School of Education, Pathways to Prosperity Project.

Threeton, M. D. (2007). The Carl D. Perkins Career and Technical Education (CTE) Act of 2006 and the roles and responsibilities of CTE teachers and faculty members. *Journal of Industrial Teacher Education, 44*(1), 66-82.

Tullis, T. S., & Stetson, J. N. (2004). *A comparison of questionnaires for assessing website usability.* Retrieved from http://home.comcast.net/~tomtullis/publications/UPA2004TullisStetson.pdf

U.S. Department of Labor. (n.d.). *My next move.* Retrieved from http://www .mynextmove.org

U. S. Department of Labor. (2011). *Standard occupational classification.* Retrieved from http://www.bls.gov/soc/#classification

U.S. Department of Labor. (2012). *Overview of the 2010-20 projections.* Retrieved from http://www.bls.gov/ooh/About/Projections-Overview.htm#overview

Ullrich, C., Borau, K., Luo, H., Tan, X., Shen, L., & Shen, R. (2008, April). *Why Web 2.0 is good for learning and for research: Principles and prototypes.* Paper presented at the International Conference on the World Wide Web 2008, Beijing, China.

University of Wisconsin System. (2010). *About UW system: History and organization of the University of Wisconsin system.* Retrieved from http://www.wisconsin.edu/ about/history.htm

Vasalampi, K., Salmela-Aro, K., & Nurmi, J. (2010, November). Education-related goal appraisals and self-esteem during the transition to secondary education: A longitudinal study. *International Journal of Behavioral Development, 34*, 481-490.

Vocational Education Act of 1917, 39 Stat. 929 (1917).

Vocational Education Act of 1963 (PL 88 210).

W. K. Kellogg Foundation. (2004). *Using logic models to bring together planning, evaluation, and action: Logic model development guide.* Battle Creek, MI: Author.

Wang, Y. D., & Zahadat, N. (2009, October). *Teaching web development in the Web 2.0 era.* Paper presented at the 10th Association for Computing Machinery Conference on Special Interest Group for Information Technology Education, Fairfax, VA.

Wisconsin Association of Independent Colleges and Universities. (n.d.a). *WAICU home.* Retrieved from http://www.waicu.org/home/

Wisconsin Association of Independent Colleges and Universities. (n.d.b). W*ho we are.* Retrieved from http://www.waicu.org/who/

Wisconsin Department of Public Instruction (n.d.a). *About us.* Retrieved from http://dpi .wi.gov/content/about-us

Wisconsin Department of Public Instruction. (n.d.b). *What are the high school completion rates?* Retrieved from http://data.dpi.state.wi.us/Data/

HSCompletionPage.aspx?GraphFile=BlankPageUrl&SCounty=47&SAthleticConf=45&SCESA=05&Qquad=performance.aspx

Wisconsin Department of Public Instruction and Wisconsin Technical College System. (2011, July). *A guide for implementing programs of study in Wisconsin: Based upon the National Career Cluster and Pathway Framework.* Retrieved from https://www.wicareerpathways.org/

Wisconsin Department of Workforce Development. (n.d.a) *About the Department of Workforce Development.* Retrieved from http://dwd.wisconsin.gov/dwd/aboutdwd.htm

Wisconsin Department of Workforce Development. (n.d.b) *WORKnet*. Retrieved from http://worknet.wisconsin.gov/worknet/

Wisconsin Legislative Reference Bureau. (2011). *Executive branch.* Retrieved from http://legis.wisconsin.gov/lrb/bb/11bb/executive.htm

Wisconsin Technical College System. (2012a). *Governance.* Retrieved from http://www.wtcsystem.edu/board/governance.htm

Wisconsin Technical College System. (2012b). *Responsibilities.* Retrieved from http://www.wtcsystem.edu/responsibilities.htm

Wisconsin Technical College System. (2012c). *WTCS board overview.* Retrieved from http://www.wtcsystem.edu/board/overview.htm

Wisconsin Technical College System Board. (2008). *The Carl D. Perkins Career and Technical Education Act of 2006* f*ive-year state plan*. Retrieved from http://mywtcs.wtcsystem.edu/wtcsinternal/cmspages/getdocumentfile.aspx?nodeguid=627e6dc5-6774-4ce8-9a35-178e5fc0d4ea

Withington, C., Hammond, C., Mobley, C., Stipanovic, N., Sharp, J., Stringfield, S., & Drew, S., Jr. (2012). Implementing a statewide mandated career pathways/programs of study school reform model: Select findings from a multisite case study. *International Journal of Educational Reform, 21*, 138-158.

Zhang, G., Zeller, N., Griffith, R., Metcalf, D., Williams, J., Shea, C., & Misulis, K. (2011). Using the context, input, process, and product evaluation model (CIPP) as a comprehensive framework to guide the planning, implementation, and assessment of service-learning programs. *Journal of Higher Education Outreach and Engagement, 15*(4), 57-84.

Appendix A

List of Wisconsin Clusters and Pathways

16 Career Clusters	79 Career Pathways
Agriculture, Food & Natural Resources	Agribusiness Systems Animal Systems Environmental service Systems Food Products and Processing Systems Natural Resources Systems Plant Systems
Architecture & Construction	Construction Design/Pre-Construction Maintenance/Operations
Arts, Audio/Video Technology & Communications	Audio and Video Technology and Film Journalism and Broadcasting Performing Arts Printing Technology Telecommunications Visual Arts
Business Management & Administration	Administrative Support Business Information Management General Management Human Resources Management Operations Management
Education & Training	Administration and Administrative Support Professional Support Services Teaching/Training
Finance	Accounting Banking Services Business Finance Insurance Securities and Investment
Government & Public Administration	Foreign Service Governance National Security Planning Public Management and Administration Regulation Revenue and Taxation
Health Science	Biotechnology Research and Development Diagnostic Services Health Informatics Support Services Therapeutic Services
Hospitality & Tourism	Lodging Recreation, Amusements and Attractions Restaurants and Food/Beverage Services Travel and Tourism

16 Career Clusters	Career Pathways
Human Services	Consumer Services Counseling and Mental Health Services Early Childhood Development and Services Family and Community Services Personal Care Services
Information Technology	Information Support and Services Network Systems Programming and Software Development Web and Digital Communications
Law, Public Safety, Corrections & Security	Correction Services Emergency and Fire Management Services Law Enforcement Services Legal Services Security and Protective Services
Manufacturing	Health, Safety and Environmental Assurance Logistics and Inventory Control Maintenance, Installation and Repair Manufacturing Production Process Development Production Quality Assurance
Marketing	Marketing Communications Marketing Management Marketing Research Merchandising Professional Sales
Science, Technology, Engineering & Mathematics	Engineering and Technology Science and Math
Transportation, Distribution & Logistics	Facility and Mobile Equipment Maintenance Health, Safety and Environmental Management Logistics Planning and Management Services Sales and Service Transportation Operations Transportation Systems/Infrastructure Planning, Management and Regulation Warehousing and Distribution Center Operations
17th Cluster	**Description**
Liberal Arts & Sciences	Majors in the Liberal Arts and Sciences provide pathways to a wide array of 21st century careers through preparation in such areas as knowledge of human cultures and the natural world; critical and creative thinking skills; effective communication skills; intercultural knowledge and competence; and individual, social and environmental responsibility.

Appendix B

WICareerPathways Web-Site Logic Model

Logic Model

Situation: **The Wisconsin Technical College System recently developed an interactive career pathways Web site.**

Inputs	Outputs	
	Activities	*Participation*
Staff FVTC Project Coordinator MPTC Assistant Project Coordinator FVTC Administrative Assistant FVTC Web Developer Technical College Career Prep Coordinators **Financial Resources** Federal Carl Perkins reserve grant funding **Partners** Wisconsin Technical College System (WTCS) Wisconsin technical colleges Wisconsin Department of Public Instruction (WDPI) Wisconsin Department of Workforce Development (WDWD) University of Wisconsin System (UW) Wisconsin Association of Independent Colleges & Universities (WAICU) K-12 Cooperative Educational Service Agencies (CESA) K-12 Career & Technical Education (CTE) Coordinators and Counselors **Research and Plan** Gap Analysis, Feasibility Study	Organize WI careers and postsecondary programs by national Career Clusters model (16 clusters and 79 pathways). Develop interactive tool for secondary educators to build secondary to postsecondary Programs of Study (POS); train POS builders on use of Web site; and add resources to help secondary educators to implement POSs. Develop components for students to take the career clusters student interest inventory, research colleges and careers by pathway, check out their Programs of Study at their high schools, and build a high school to college Individualized Learning Plan (ILP). Develop components to stay current with high school POSs; review ILPs and checklists with students/ parents; manage student accounts and view student profiles; and review data at a glance.	**General Public** **Program of Study Builders** **Middle and High School Students** **Middle and High School Counselors**

Assumptions

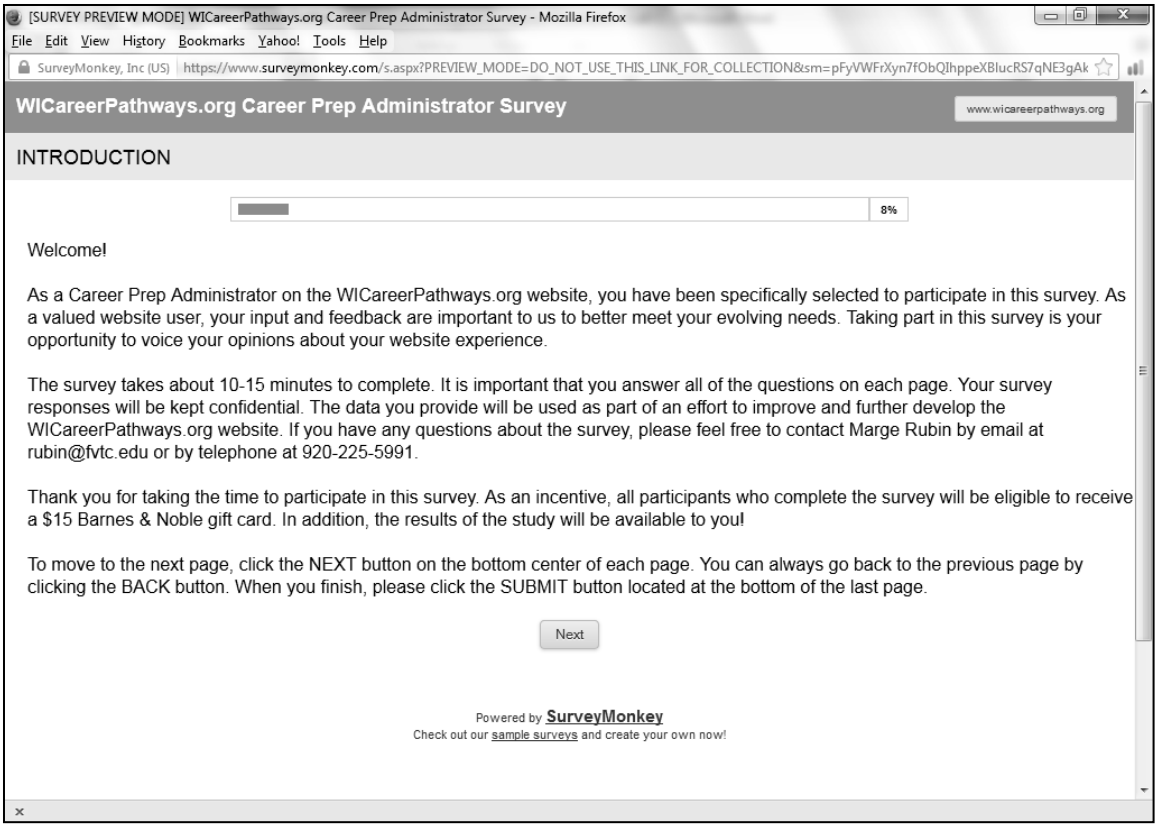
Funding continues either through grants, partnership support, business & industry support, and/or legislative support; partnerships continue and expand.

Outcomes – Impact		
Short	*Medium*	*Long*
Increase awareness of the Web site.	Gain Business & Industry support.	
Assist builders in developing POSs within the career clusters framework using the interactive Web-based tool on the Web site.	Encourage the development of "rigorous" programs; increase the number of builders that collaborate with academic teachers and counselors.	School-wide support at the administrative, teacher, counselor, parent, community, postsecondary and business & industry levels.
Assist middle and high school students in exploring interests, careers and college programs within the career clusters framework.	Increase the number of middle and high school students who develop Individualized Learning Plans integrating rigorous academic and career and technical courses and related activities that prepare them for success in college and careers.	Students are engaged in learning and ready to succeed in college and careers.
Assist middle and high school counselors in helping students explore careers and programs within the career clusters framework and create individualized plans of study.	Increase school-wide support of POS development as well as Career Exploration, Planning and Development for students; support counselors in career development.	

External Factors
Unstable political climate at national level; competing with College Readiness initiatives (instead of working in tandem); perception of Career & Technical Education.

Appendix C

WICareerPathways.org Career-Prep Administrator Survey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WICareerPathways.org Career Prep Administrator Survey
www.wicareerpathways.org
INTRODUCTION
8%
Welcome!
As a Career Prep Administrator on the WICareerPathways.org website, you have been specifically selected to participate in this survey. As a valued website user, your input and feedback are important to us to better meet your evolving needs. Taking part in this survey is your opportunity to voice your opinions about your website experience.
The survey takes about 10-15 minutes to complete. It is important that you answer all of the questions on each page. Your survey responses will be kept confidential. The data you provide will be used as part of an effort to improve and further develop the WICareerPathways.org website. If you have any questions about the survey, please feel free to contact Marge Rubin by email at rubin@fvtc.edu or by telephone at 920-225-5991.
Thank you for taking the time to participate in this survey. As an incentive, all participants who complete the survey will be eligible to receive a $15 Barnes & Noble gift card. In addition, the results of the study will be available to you!
To move to the next page, click the NEXT button on the bottom center of each page. You can always go back to the previous page by clicking the BACK button. When you finish, please click the SUBMIT button located at the bottom of the last page.
Next
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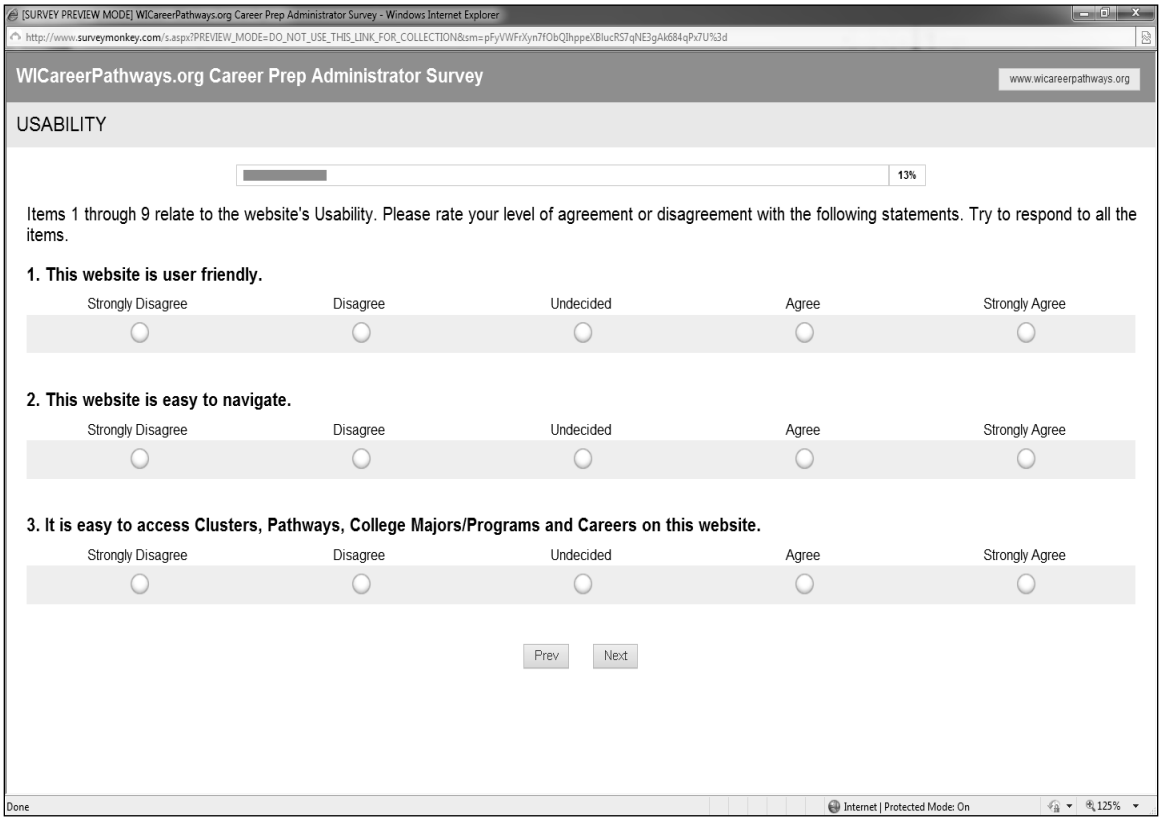
Check out our sample surveys and create your own now!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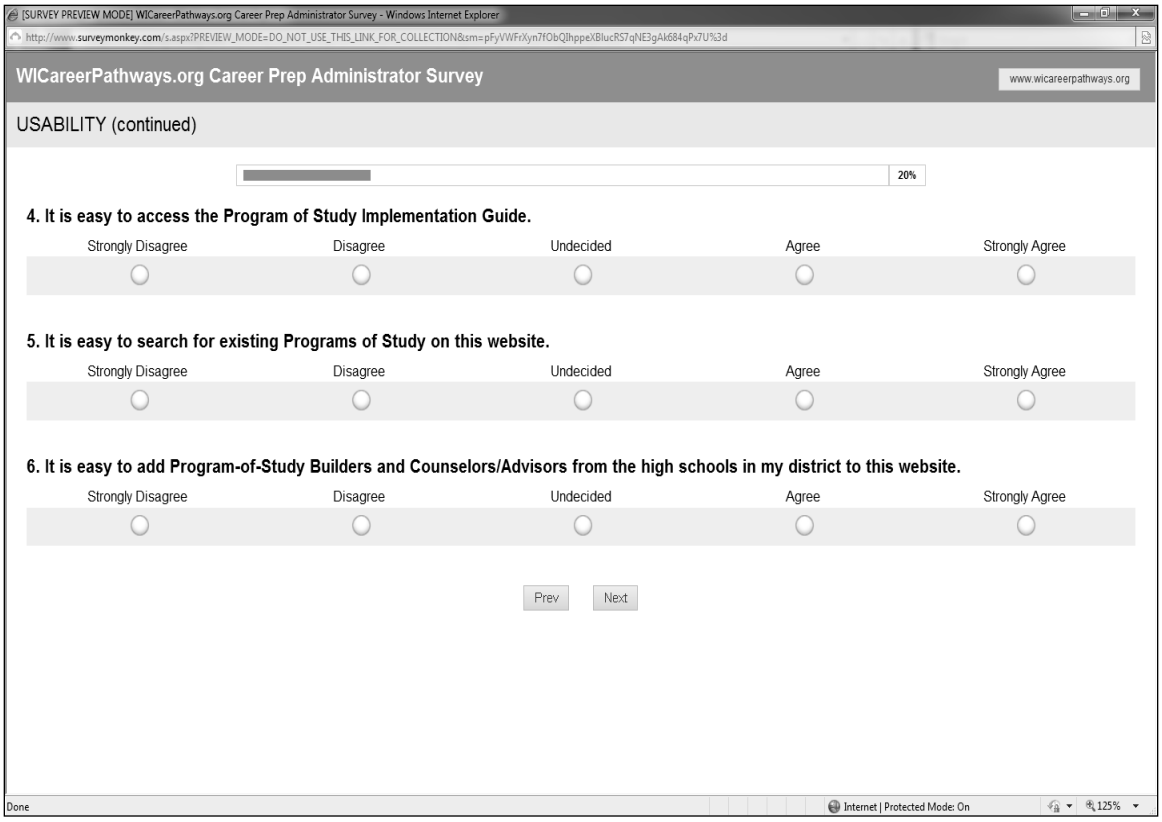
WICareerPathways.org Career Prep Administrator Survey
www.wicareerpathways.org
USABILITY
13%
Items 1 through 9 relate to the website's Usability. Please rate your level of agreement or disagreement with the following statements. Try to respond to all the items.
1. This website is user friendly.
Strongly Disagree Disagree Undecided Agree Strongly Agree
2. This website is easy to navigate.
Strongly Disagree Disagree Undecided Agree Strongly Agree
3. It is easy to access Clusters, Pathways, College Majors/Programs and Careers on this website.
Strongly Disagree Disagree Undecided Agree Strongly Agree
Prev Next
Done
Internet | Protected Mode: On
125%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WICareerPathways.org Career Prep Administrator Survey
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USABILITY (continued)
20%
4. It is easy to access the Program of Study Implementation Guide.
Strongly Disagree
Disagree
Undecided
Agree
Strongly Agree
5. It is easy to search for existing Programs of Study on this website.
Strongly Disagree
Disagree
Undecided
Agree
Strongly Agree
6. It is easy to add Program-of-Study Builders and Counselors/Advisors from the high schools in my district to this website.
Strongly Disagree
Disagree
Undecided
Agree
Strongly Agree
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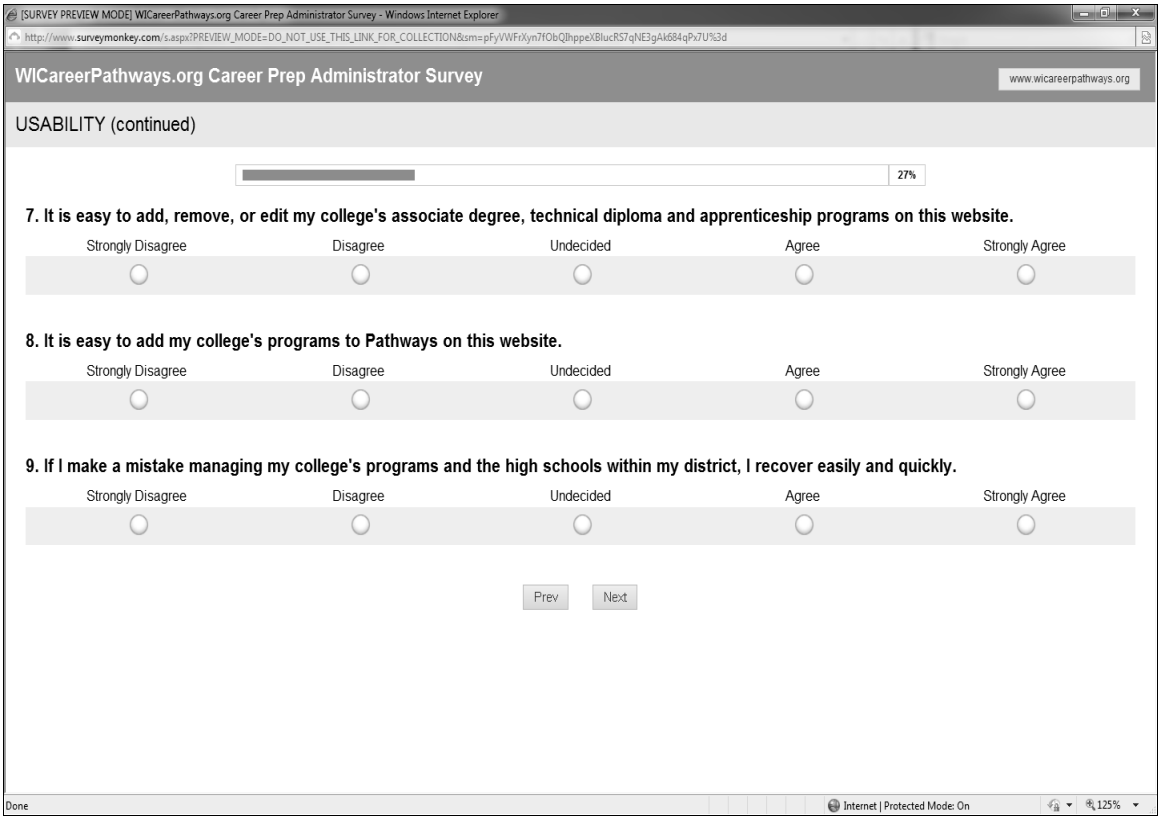
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USABILITY (continued)
27%
7. It is easy to add, remove, or edit my college's associate degree, technical diploma and apprenticeship programs on this website.
Strongly Disagree
Disagree
Undecided
Agree
Strongly Agree
8. It is easy to add my college's programs to Pathways on this website.
Strongly Disagree
Disagree
Undecided
Agree
Strongly Agree
9. If I make a mistake managing my college's programs and the high schools within my district, I recover easily and quickly.
Strongly Disagree
Disagree
Undecided
Agree
Strongly Agree
Prev
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Done
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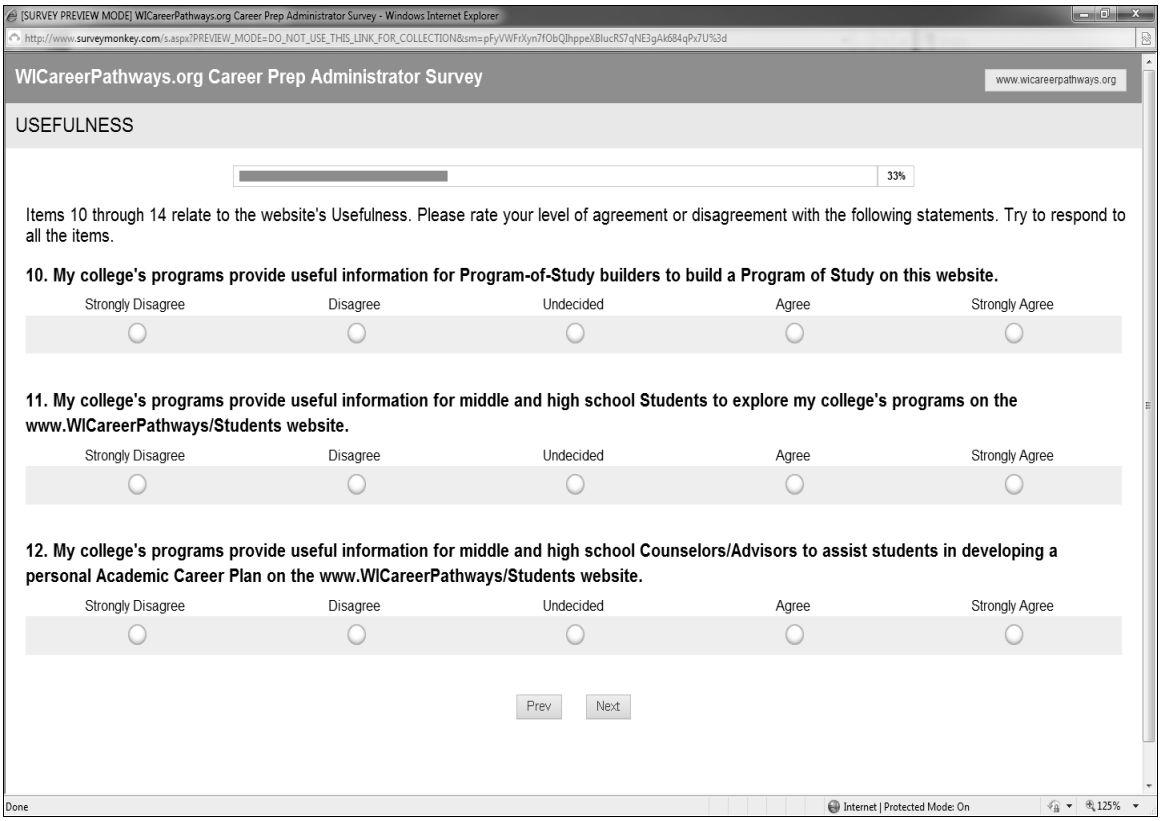
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WICareerPathways.org Career Prep Administrator Survey
www.wicareerpathways.org
USEFULNESS
33%
Items 10 through 14 relate to the website's Usefulness. Please rate your level of agreement or disagreement with the following statements. Try to respond to all the items.
10. My college's programs provide useful information for Program-of-Study builders to build a Program of Study on this website.
Strongly Disagree
Disagree
Undecided
Agree
Strongly Agree
11. My college's programs provide useful information for middle and high school Students to explore my college's programs on the www.WICareerPathways/Students website.
Strongly Disagree
Disagree
Undecided
Agree
Strongly Agree
12. My college's programs provide useful information for middle and high school Counselors/Advisors to assist students in developing a personal Academic Career Plan on the www.WICareerPathways/Students website.
Strongly Disagree
Disagree
Undecided
Agree
Strongly Agree
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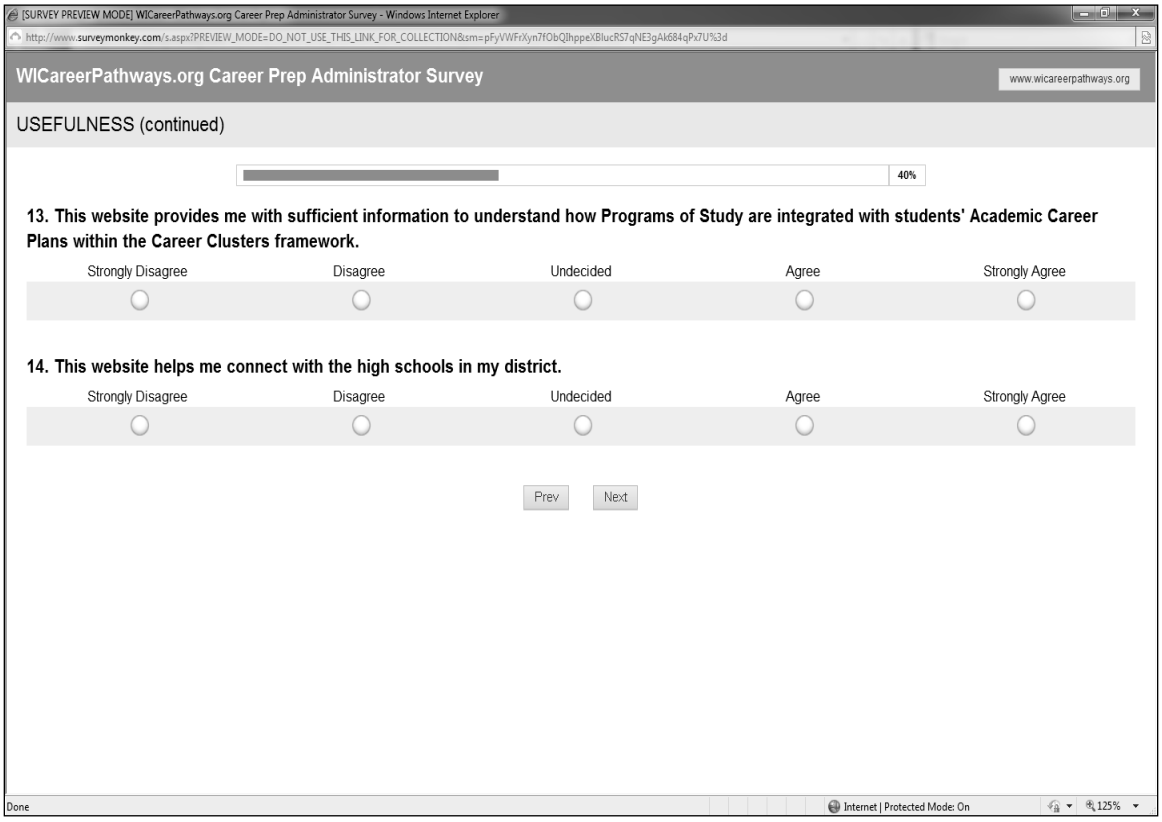
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WICareerPathways.org Career Prep Administrator Survey
www.wicareerpathways.org
USEFULNESS (continued)
40%
13. This website provides me with sufficient information to understand how Programs of Study are integrated with students' Academic Career Plans within the Career Clusters framework.
Strongly Disagree
Disagree
Undecided
Agree
Strongly Agree
14. This website helps me connect with the high schools in my district.
Strongly Disagree
Disagree
Undecided
Agree
Strongly Agree
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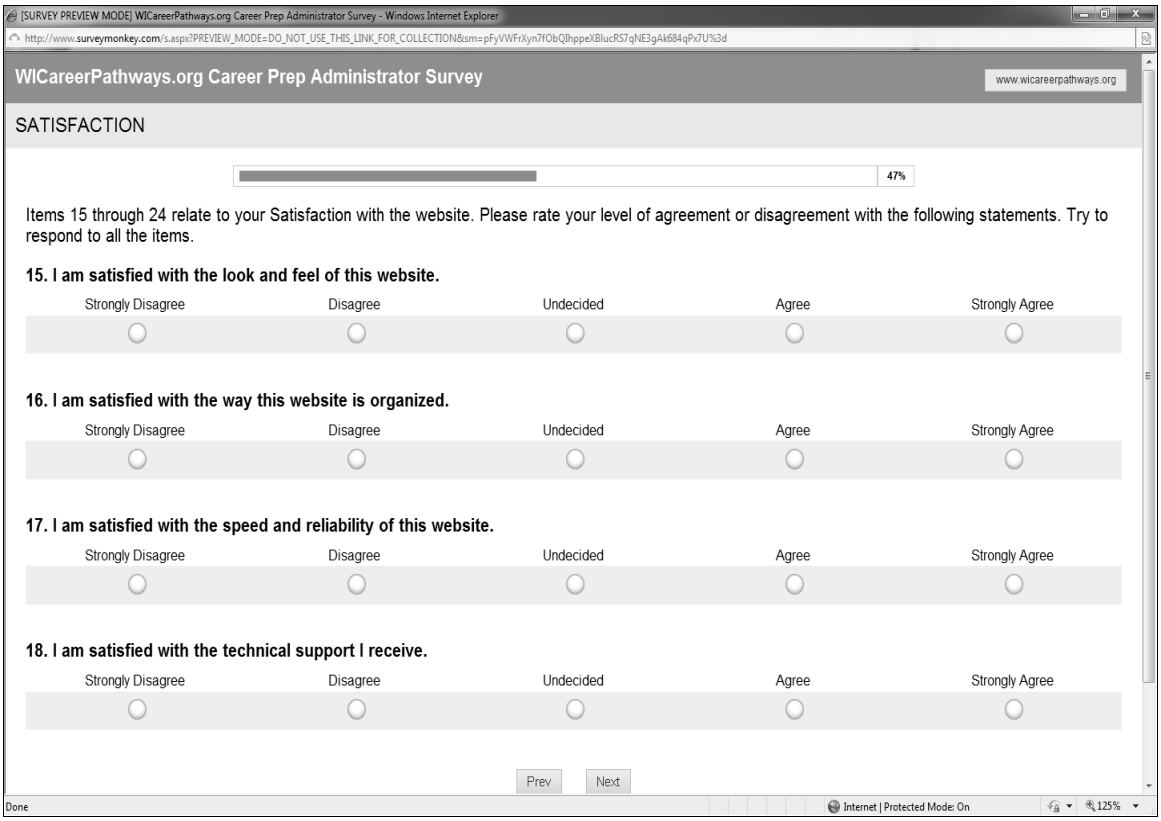
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WICareerPathways.org Career Prep Administrator Survey
www.wicareerpathways.org
SATISFACTION
47%
Items 15 through 24 relate to your Satisfaction with the website. Please rate your level of agreement or disagreement with the following statements. Try to respond to all the items.
15. I am satisfied with the look and feel of this website.
Strongly Disagree
Disagree
Undecided
Agree
Strongly Agree
16. I am satisfied with the way this website is organized.
Strongly Disagree
Disagree
Undecided
Agree
Strongly Agree
17. I am satisfied with the speed and reliability of this website.
Strongly Disagree
Disagree
Undecided
Agree
Strongly Agree
18. I am satisfied with the technical support I receive.
Strongly Disagree
Disagree
Undecided
Agree
Strongly Agree
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Done
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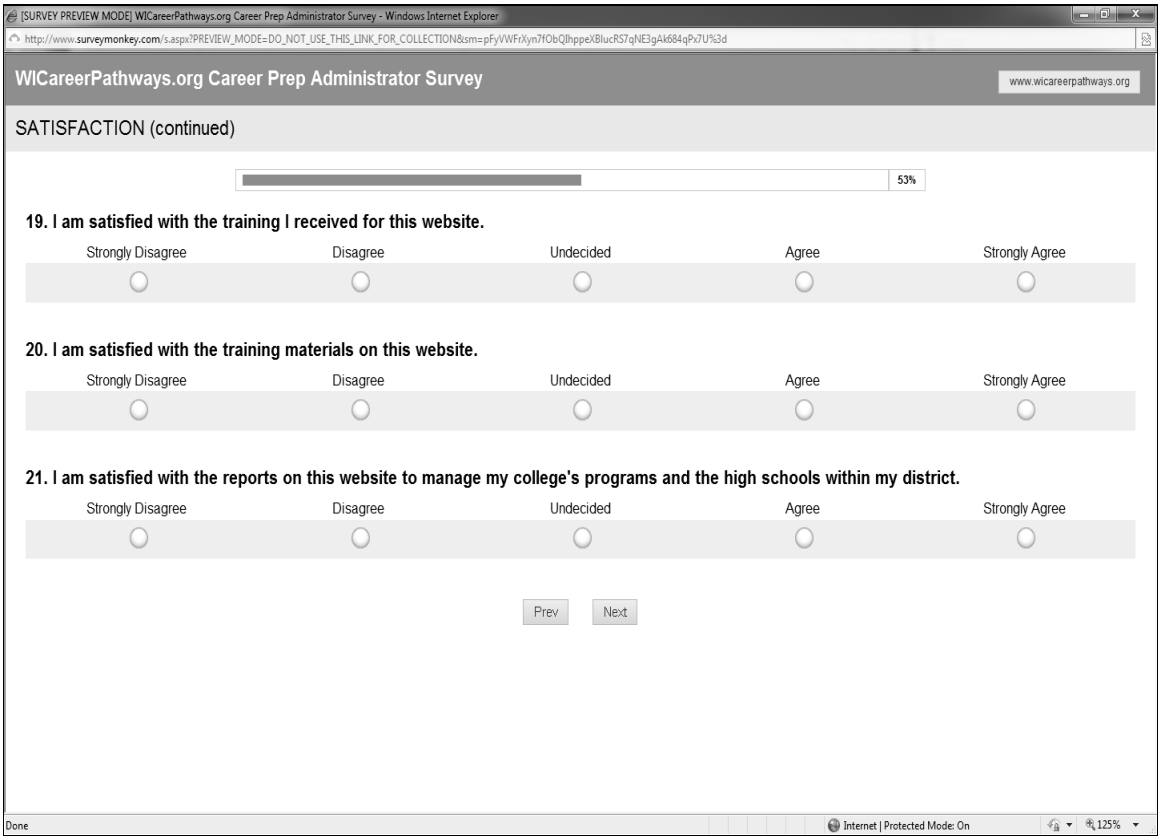
125%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SATISFACTION (continued)
53%
19. I am satisfied with the training I received for this website.
Strongly Disagree
Disagree
Undecided
Agree
Strongly Agree
20. I am satisfied with the training materials on this website.
Strongly Disagree
Disagree
Undecided
Agree
Strongly Agree
21. I am satisfied with the reports on this website to manage my college's programs and the high schools within my district.
Strongly Disagree
Disagree
Undecided
Agree
Strongly Agree
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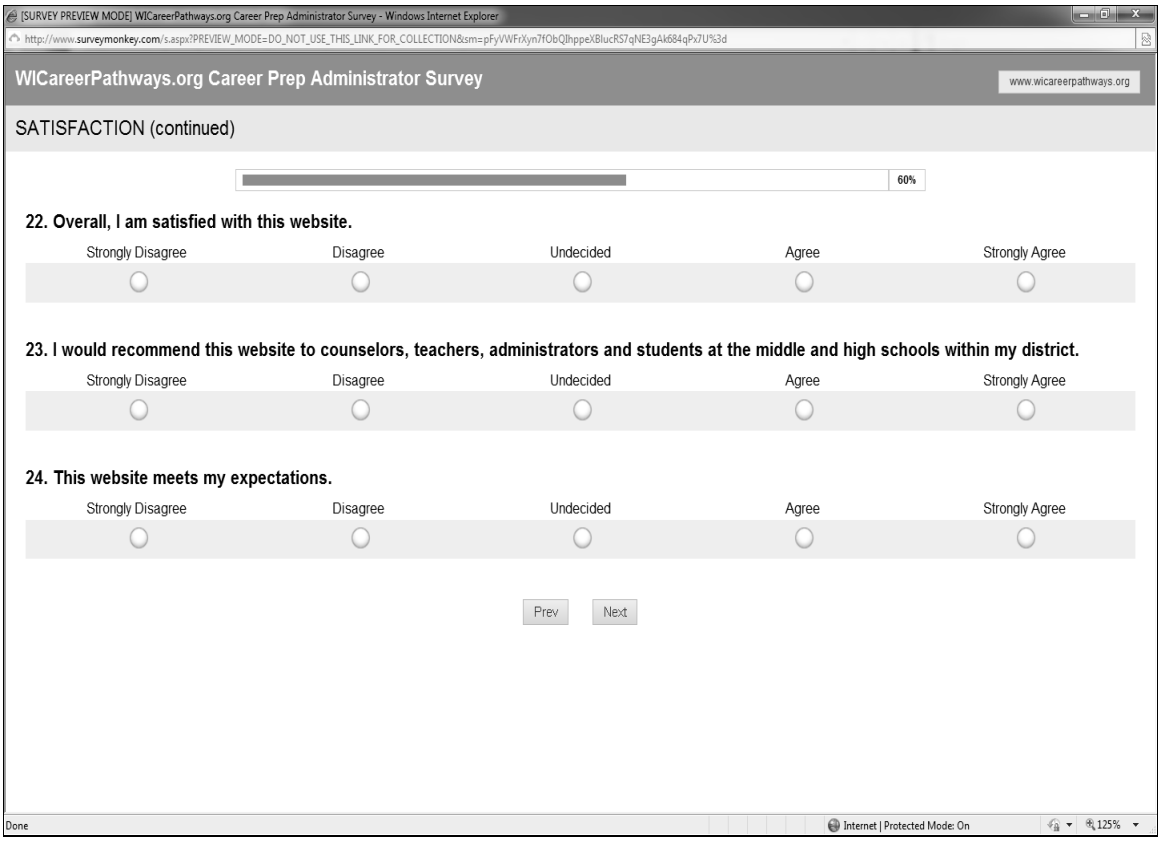
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WICareerPathways.org Career Prep Administrator Survey
www.wicareerpathways.org
SATISFACTION (continued)
60%
22. Overall, I am satisfied with this website.
Strongly Disagree
Disagree
Undecided
Agree
Strongly Agree
23. I would recommend this website to counselors, teachers, administrators and students at the middle and high schools within my district.
Strongly Disagree
Disagree
Undecided
Agree
Strongly Agree
24. This website meets my expectations.
Strongly Disagree
Disagree
Undecided
Agree
Strongly Agree
Prev
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Done
Internet | Protected Mode: On
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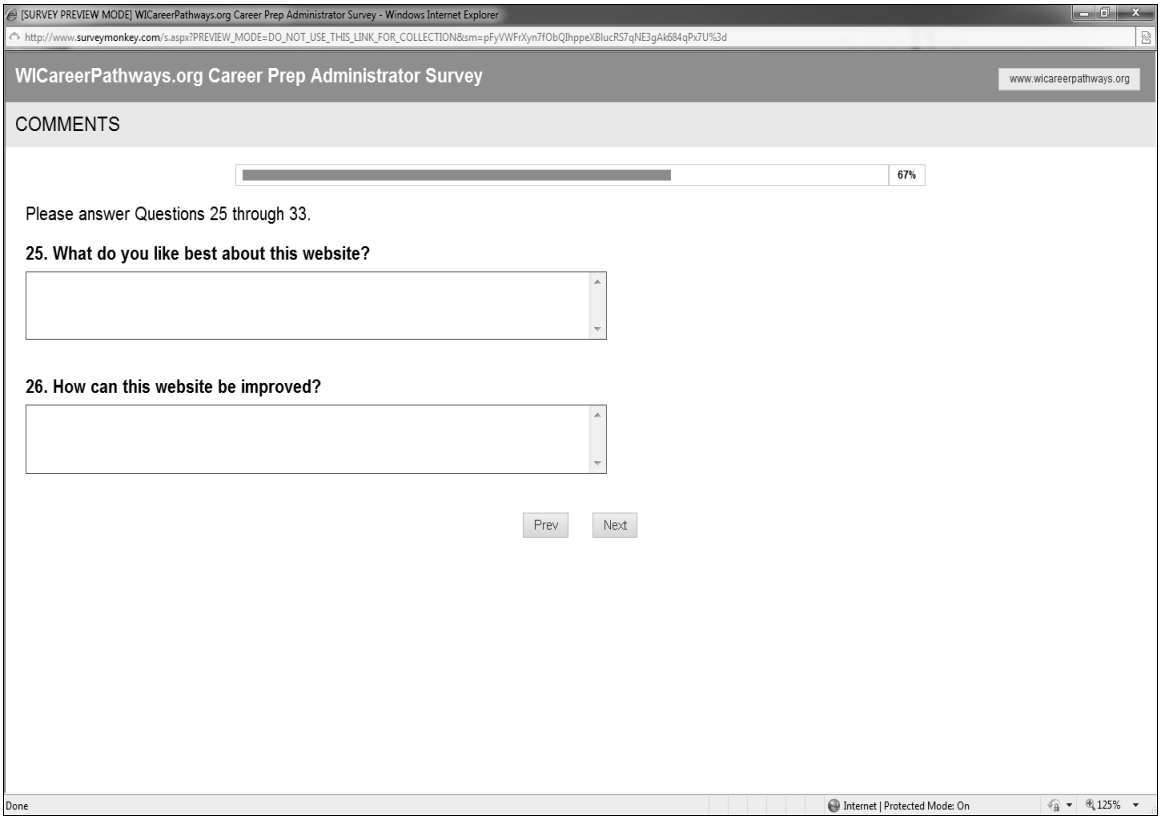
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COMMENTS
67%
Please answer Questions 25 through 33.
25. What do you like best about this website?
26. How can this website be improved?
Prev
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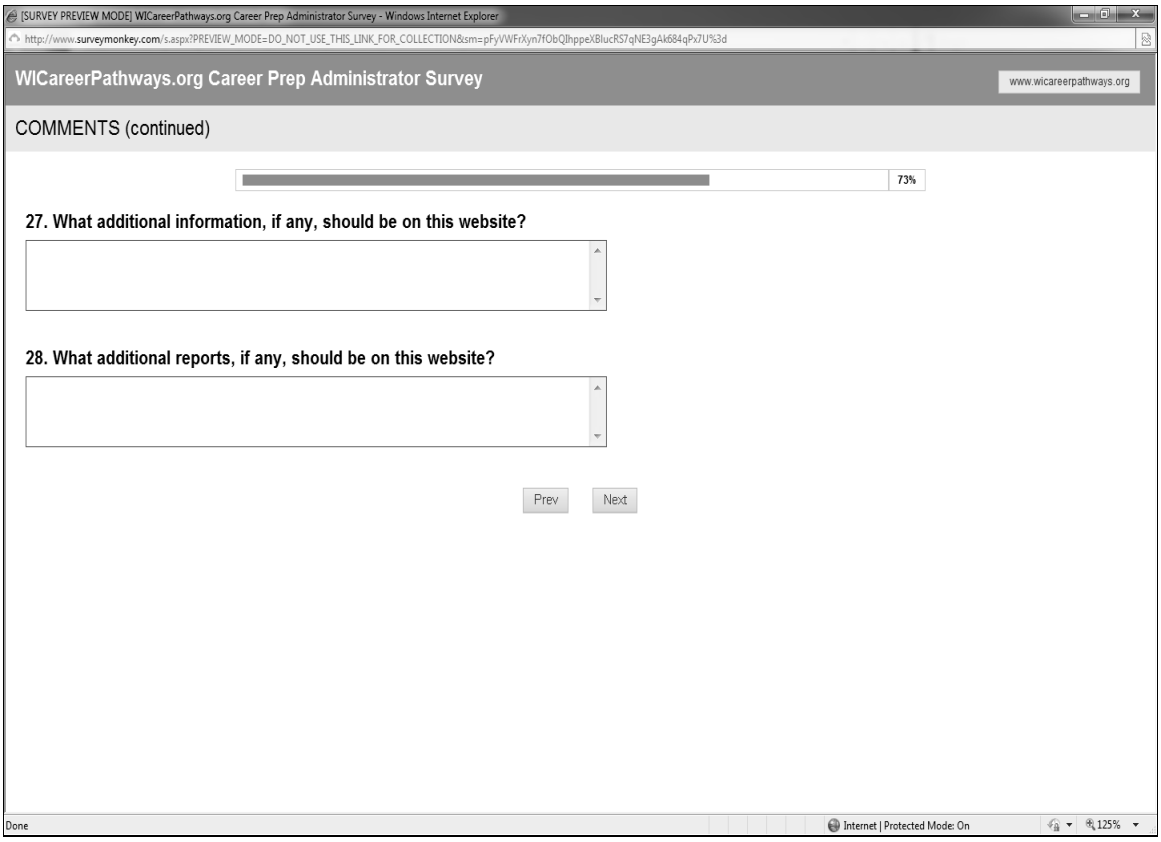
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COMMENTS (continued)
73%
27. What additional information, if any, should be on this website?
28. What additional reports, if any, should be on this website?
Prev
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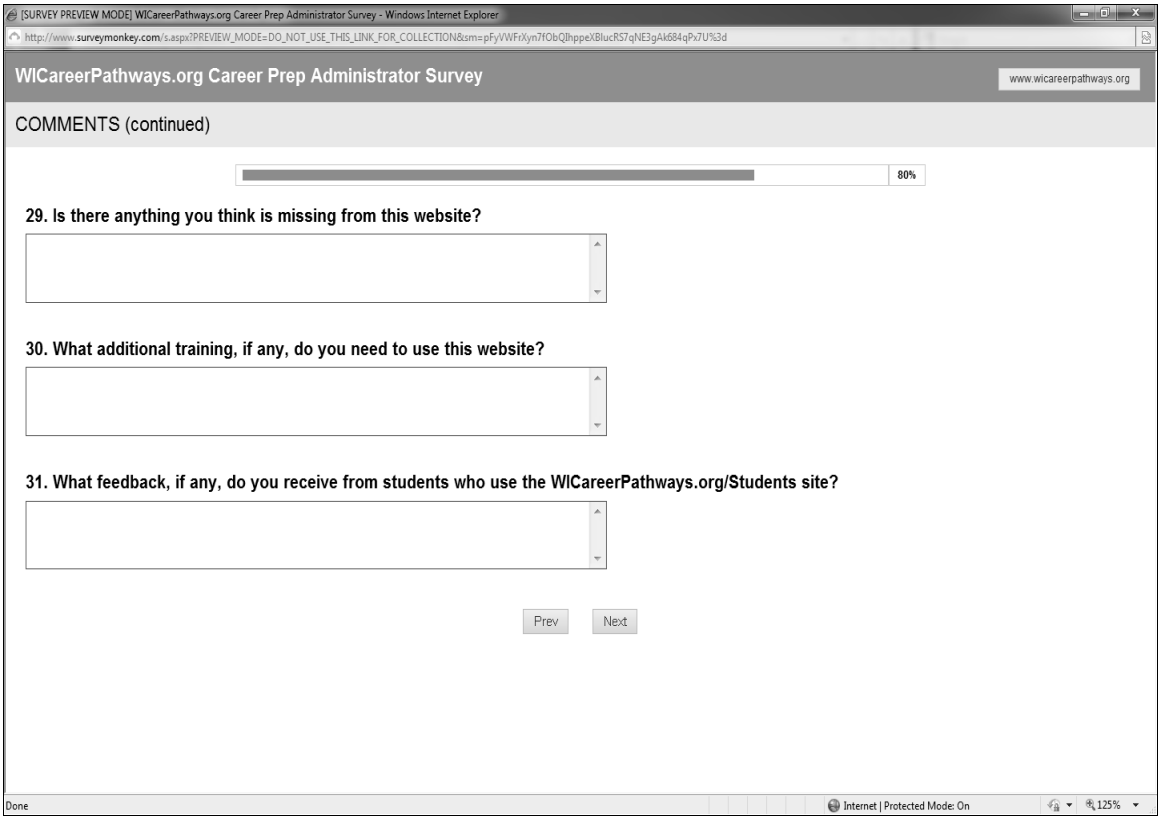
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COMMENTS (continued)
80%
29. Is there anything you think is missing from this website?
30. What additional training, if any, do you need to use this website?
31. What feedback, if any, do you receive from students who use the WICareerPathways.org/Students site?
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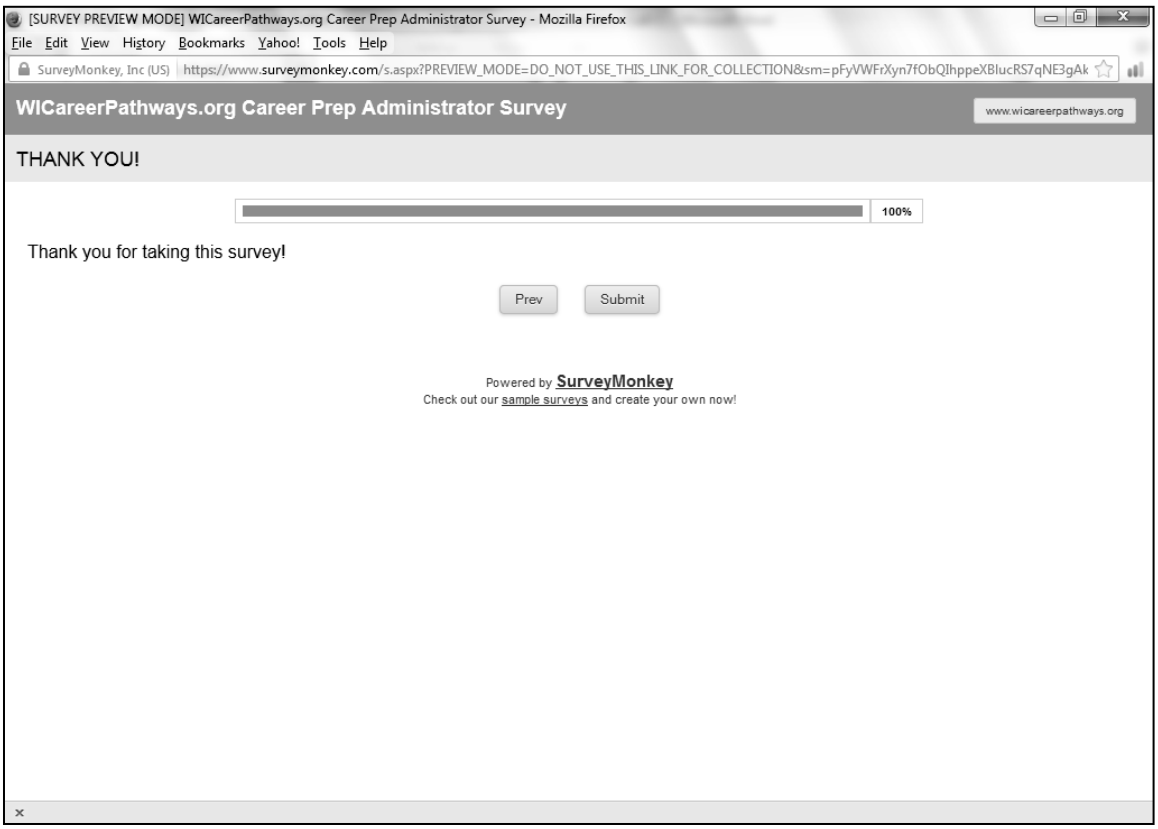
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THANK YOU!
100%
Thank you for taking this survey!
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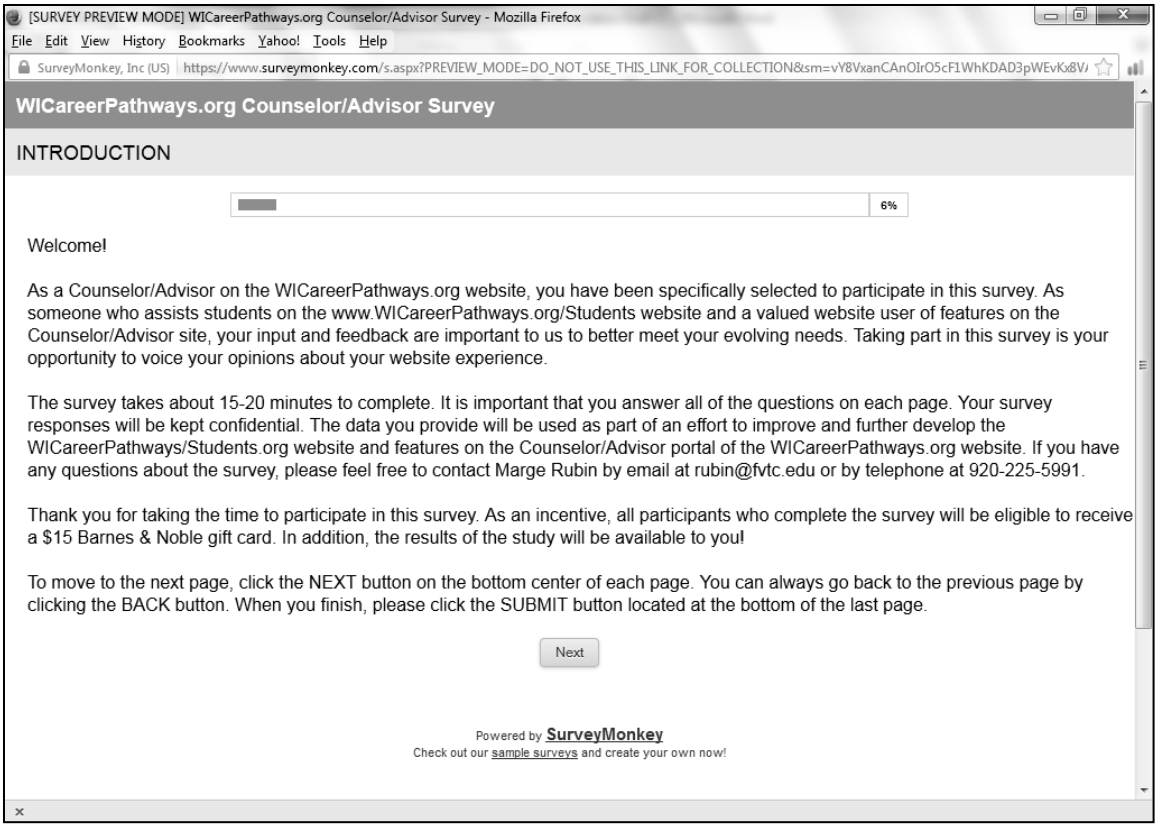
Appendix D

WICareerPathways.org Counselor and Adviser Survey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WICareerPathways.org Counselor/Advisor Survey
INTRODUCTION
6%
Welcome!
As a Counselor/Advisor on the WICareerPathways.org website, you have been specifically selected to participate in this survey. As someone who assists students on the www.WICareerPathways.org/Students website and a valued website user of features on the Counselor/Advisor site, your input and feedback are important to us to better meet your evolving needs. Taking part in this survey is your opportunity to voice your opinions about your website experience.
The survey takes about 15-20 minutes to complete. It is important that you answer all of the questions on each page. Your survey responses will be kept confidential. The data you provide will be used as part of an effort to improve and further develop the WICareerPathways/Students.org website and features on the Counselor/Advisor portal of the WICareerPathways.org website. If you have any questions about the survey, please feel free to contact Marge Rubin by email at rubin@fvtc.edu or by telephone at 920-225-5991.
Thank you for taking the time to participate in this survey. As an incentive, all participants who complete the survey will be eligible to receive a $15 Barnes & Noble gift card. In addition, the results of the study will be available to you!
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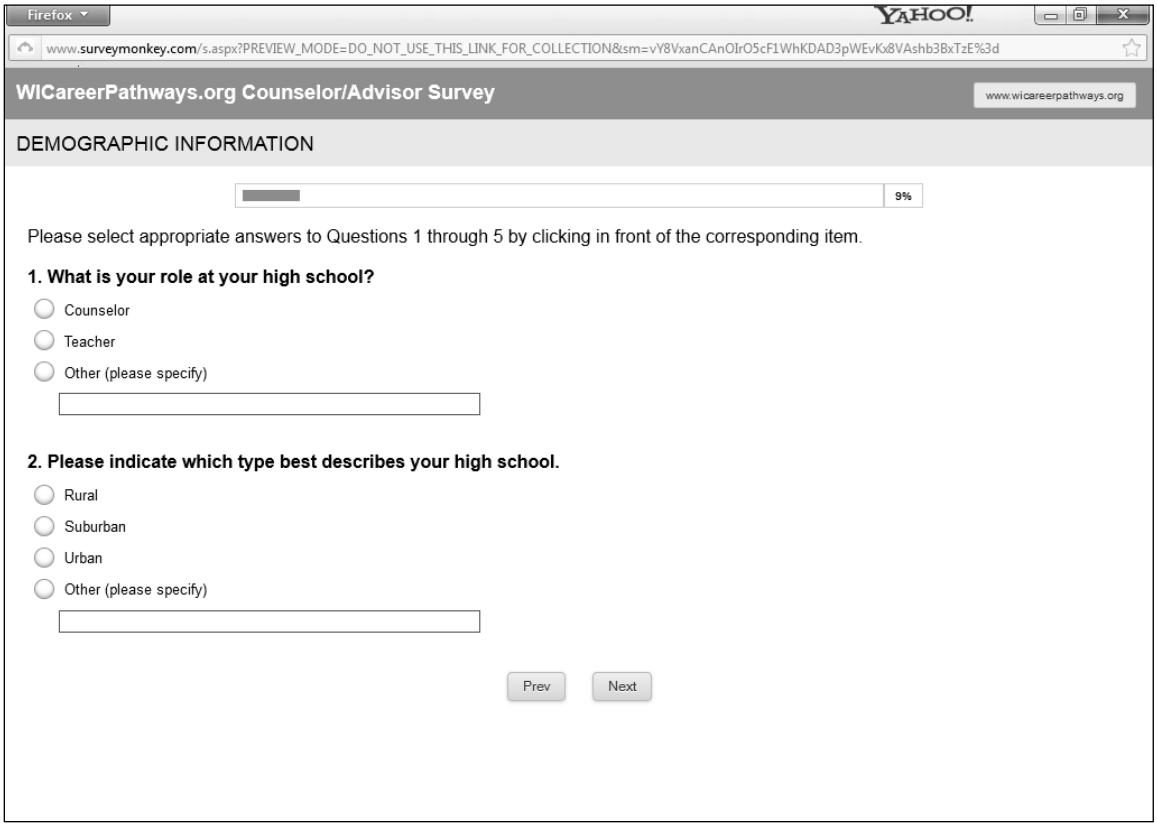
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WICareerPathways.org Counselor/Advisor Survey
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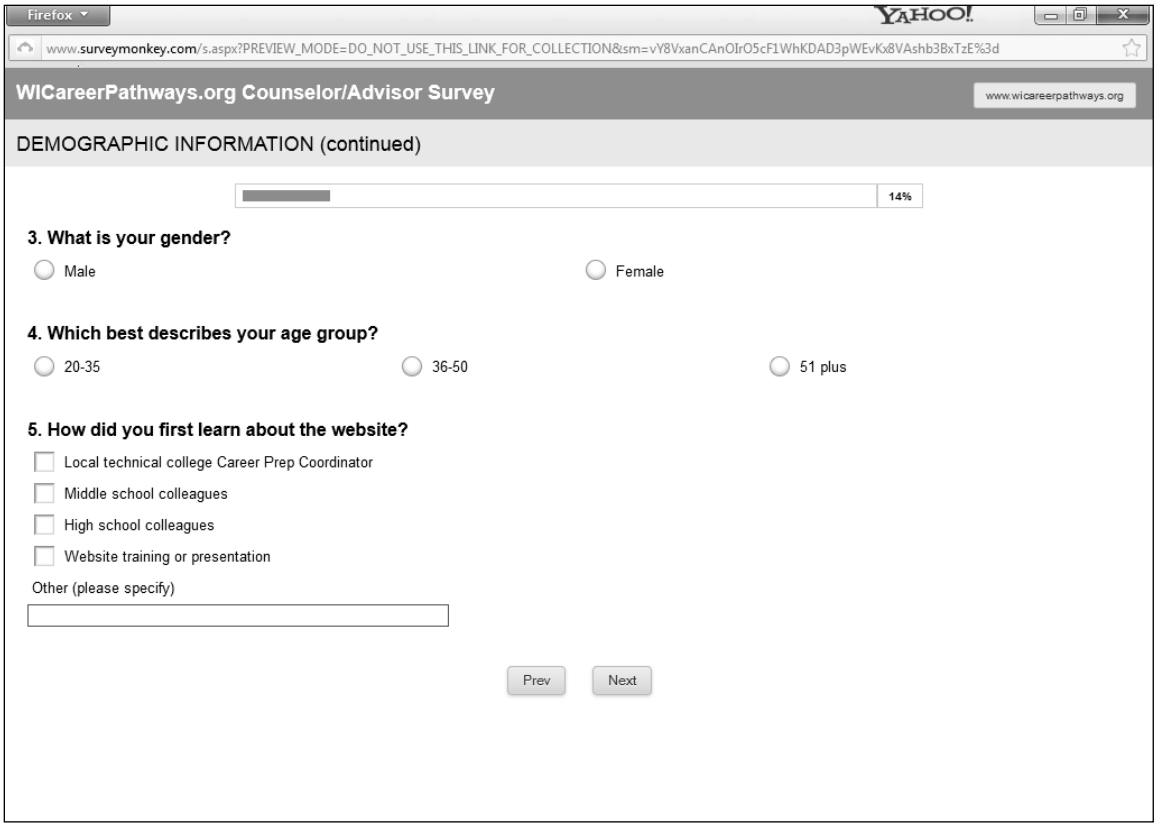
DEMOGRAPHIC INFORMATION
9%
Please select appropriate answers to Questions 1 through 5 by clicking in front of the corresponding item.
1. What is your role at your high school?
Counselor
Teacher
Other (please specify)
2. Please indicate which type best describes your high school.
Rural
Suburban
Urban
Other (please specify)
Prev
Next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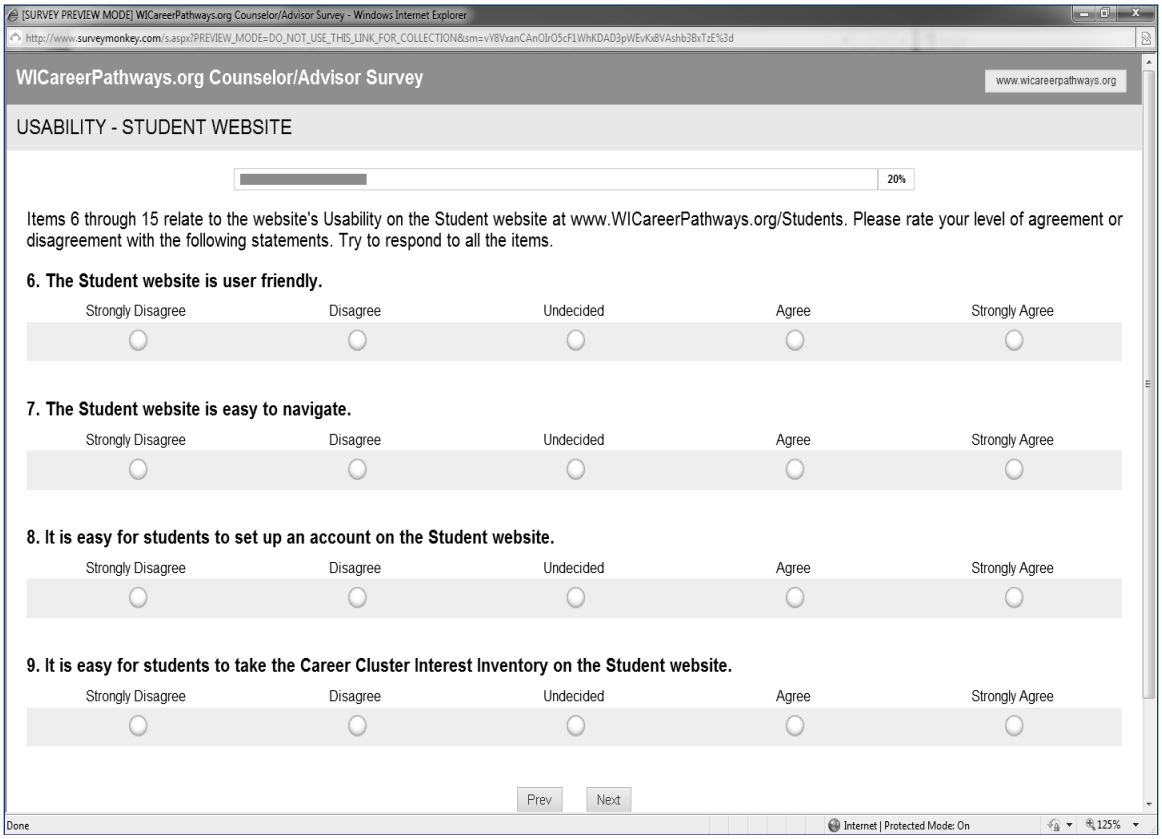
DEMOGRAPHIC INFORMATION (continued)
14%
3. What is your gender?
Male
Female
4. Which best describes your age group?
20-35
36-50
51 plus
5. How did you first learn about the website?
Local technical college Career Prep Coordinator
Middle school colleagues
High school colleagues
Website training or presentation
Other (please specify)
Prev
Next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WICareerPathways.org Counselor/Advisor Survey
www.wicareerpathways.org
USABILITY - STUDENT WEBSITE
20%
Items 6 through 15 relate to the website's Usability on the Student website at www.WICareerPathways.org/Students. Please rate your level of agreement or disagreement with the following statements. Try to respond to all the items.
6. The Student website is user friendly.
Strongly Disagree
Disagree
Undecided
Agree
Strongly Agree
7. The Student website is easy to navigate.
Strongly Disagree
Disagree
Undecided
Agree
Strongly Agree
8. It is easy for students to set up an account on the Student website.
Strongly Disagree
Disagree
Undecided
Agree
Strongly Agree
9. It is easy for students to take the Career Cluster Interest Inventory on the Student website.
Strongly Disagree
Disagree
Undecided
Agree
Strongly Agree
Prev
Next
Done
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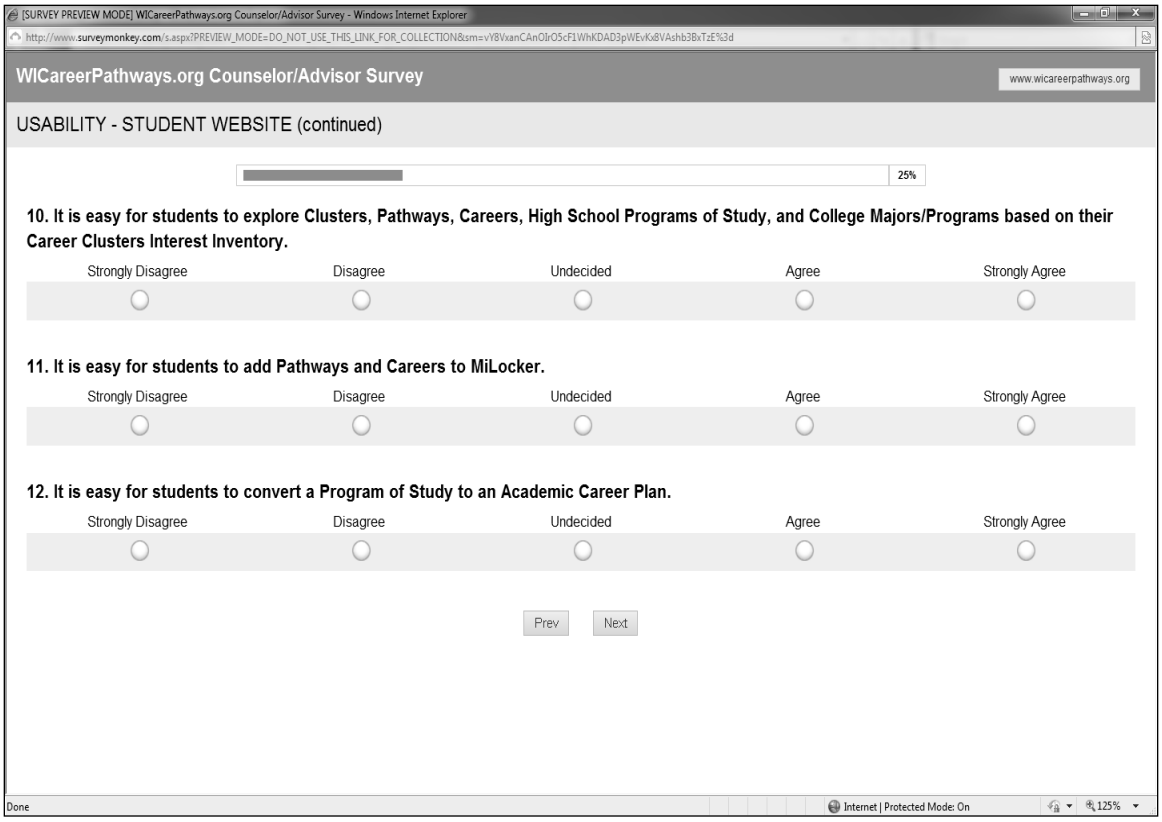
125%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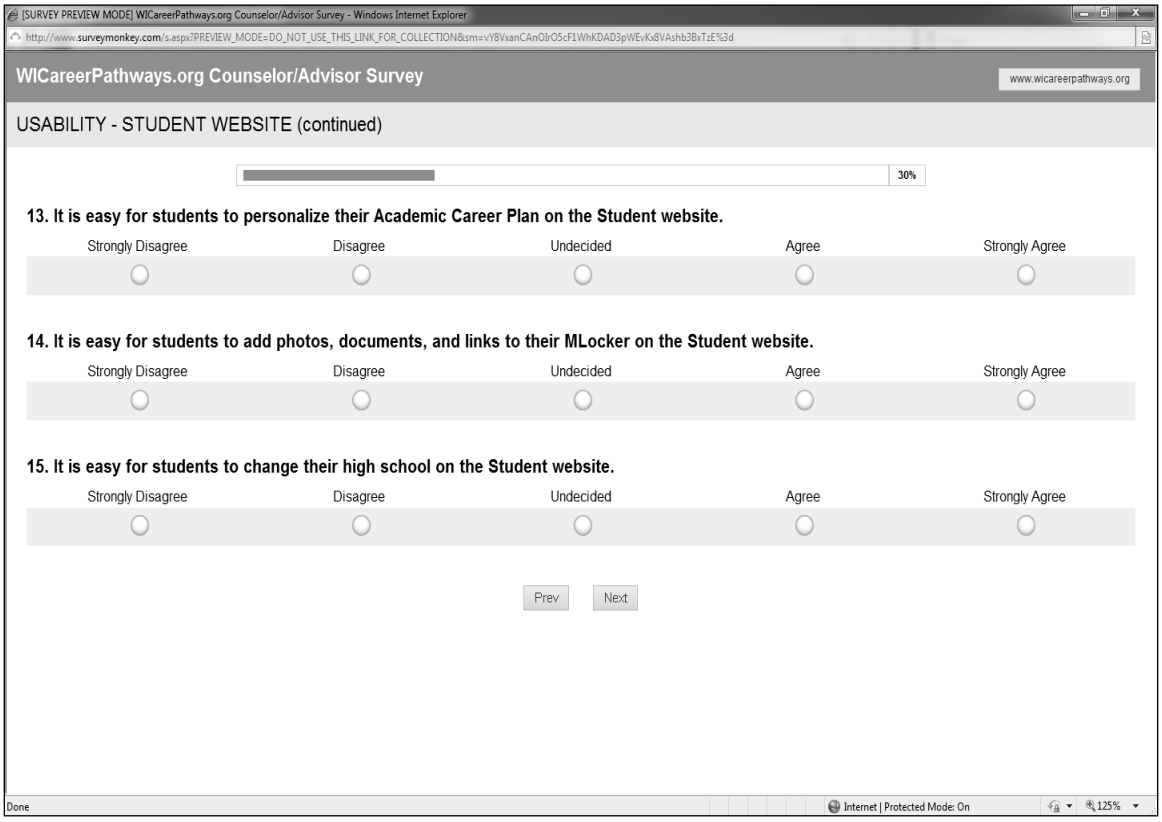
WICareerPathways.org Counselor/Advisor Survey
www.wicareerpathways.org
USABILITY - STUDENT WEBSITE (continued)
25%
10. It is easy for students to explore Clusters, Pathways, Careers, High School Programs of Study, and College Majors/Programs based on their Career Clusters Interest Inventory.
Strongly Disagree
Disagree
Undecided
Agree
Strongly Agree
11. It is easy for students to add Pathways and Careers to MiLocker.
Strongly Disagree
Disagree
Undecided
Agree
Strongly Agree
12. It is easy for students to convert a Program of Study to an Academic Career Plan.
Strongly Disagree
Disagree
Undecided
Agree
Strongly Agree
Prev
Next
Done
Internet | Protected Mode: On
125%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WICareerPathways.org Counselor/Advisor Survey
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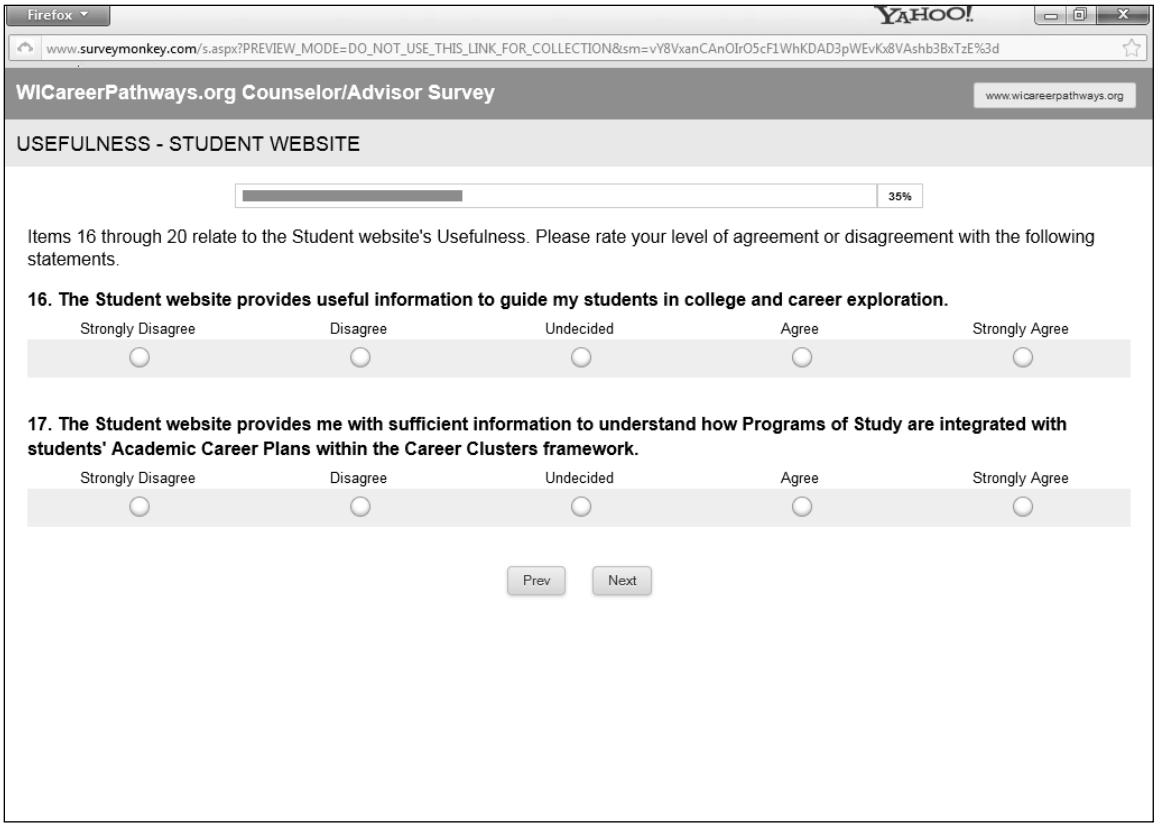
USABILITY - STUDENT WEBSITE (continued)
30%
13. It is easy for students to personalize their Academic Career Plan on the Student website.
Strongly Disagree
Disagree
Undecided
Agree
Strongly Agree
14. It is easy for students to add photos, documents, and links to their MLocker on the Student website.
Strongly Disagree
Disagree
Undecided
Agree
Strongly Agree
15. It is easy for students to change their high school on the Student website.
Strongly Disagree
Disagree
Undecided
Agree
Strongly Agree
Prev
Next
Done
Internet | Protected Mode: On
125%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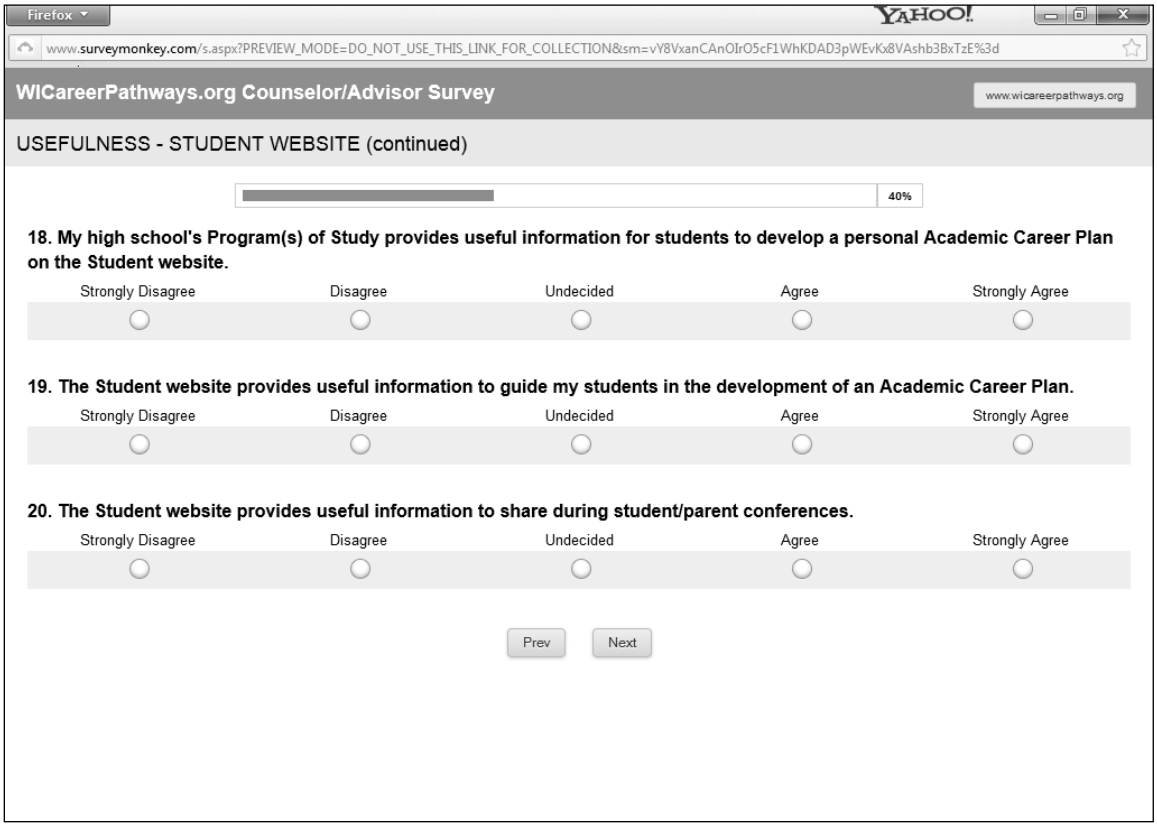
WICareerPathways.org Counselor/Advisor Survey
www.wicareerpathways.org
USEFULNESS - STUDENT WEBSITE
35%
Items 16 through 20 relate to the Student website's Usefulness. Please rate your level of agreement or disagreement with the following statements.
16. The Student website provides useful information to guide my students in college and career exploration.
Strongly Disagree
Disagree
Undecided
Agree
Strongly Agree
17. The Student website provides me with sufficient information to understand how Programs of Study are integrated with students' Academic Career Plans within the Career Clusters framework.
Strongly Disagree
Disagree
Undecided
Agree
Strongly Agree
Prev
Next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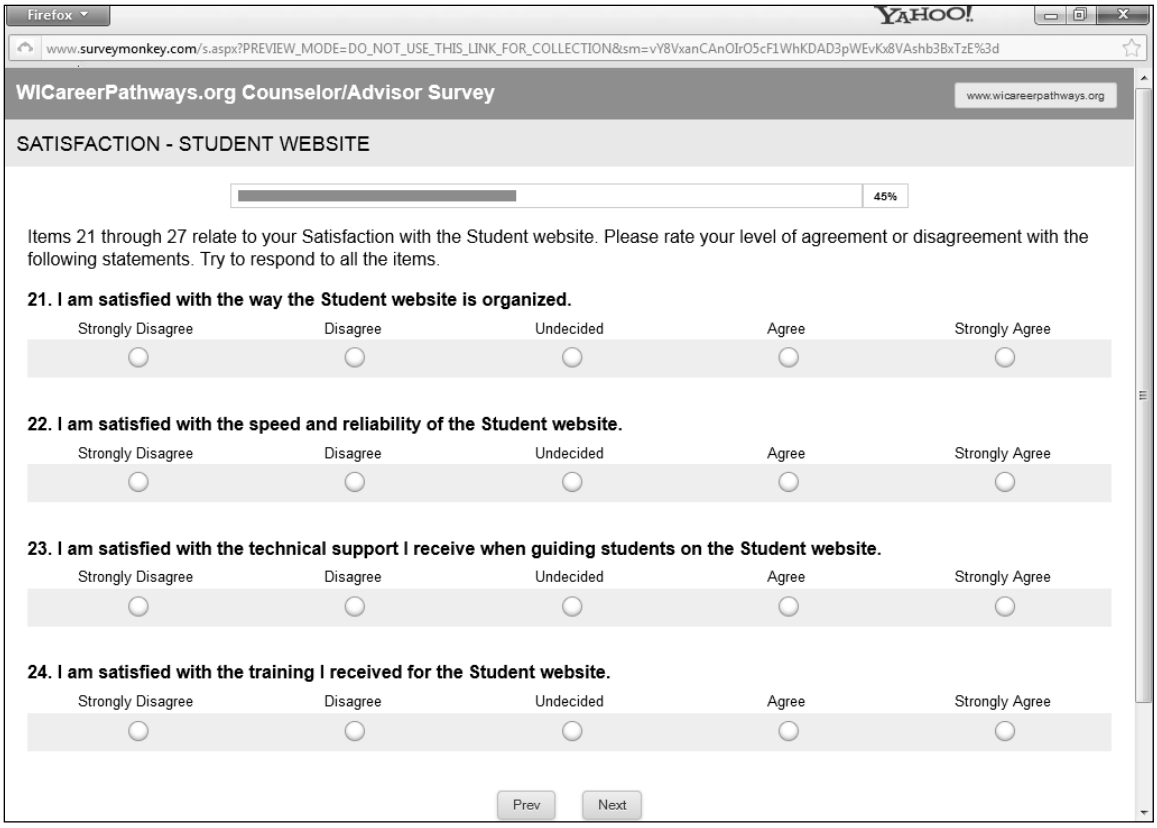
WICareerPathways.org Counselor/Advisor Survey
www.wicareerpathways.org
USEFULNESS - STUDENT WEBSITE (continued)
40%
18. My high school's Program(s) of Study provides useful information for students to develop a personal Academic Career Plan on the Student website.
Strongly Disagree
Disagree
Undecided
Agree
Strongly Agree
19. The Student website provides useful information to guide my students in the development of an Academic Career Plan.
Strongly Disagree
Disagree
Undecided
Agree
Strongly Agree
20. The Student website provides useful information to share during student/parent conferences.
Strongly Disagree
Disagree
Undecided
Agree
Strongly Agree
Prev
Next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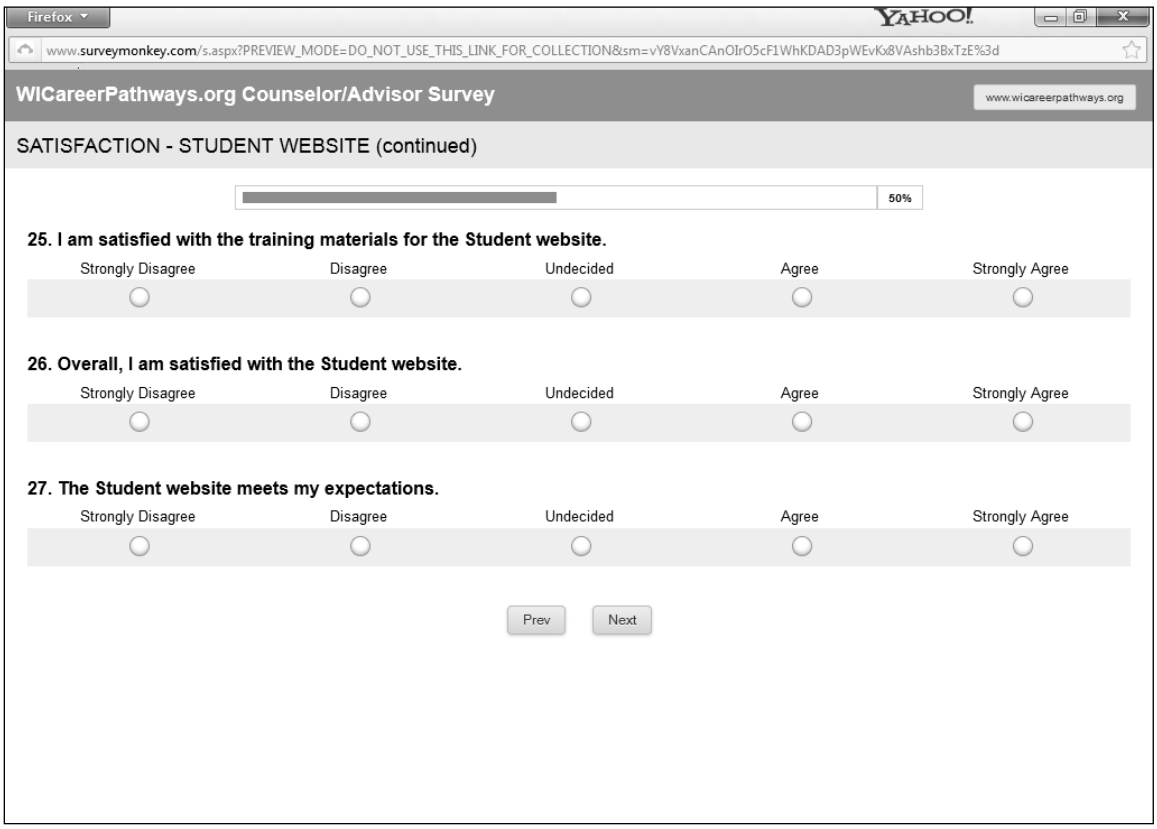
WICareerPathways.org Counselor/Advisor Survey
www.wicareerpathways.org
SATISFACTION - STUDENT WEBSITE
45%
Items 21 through 27 relate to your Satisfaction with the Student website. Please rate your level of agreement or disagreement with the following statements. Try to respond to all the items.
21. I am satisfied with the way the Student website is organized.
Strongly Disagree
Disagree
Undecided
Agree
Strongly Agree
22. I am satisfied with the speed and reliability of the Student website.
Strongly Disagree
Disagree
Undecided
Agree
Strongly Agree
23. I am satisfied with the technical support I receive when guiding students on the Student website.
Strongly Disagree
Disagree
Undecided
Agree
Strongly Agree
24. I am satisfied with the training I received for the Student website.
Strongly Disagree
Disagree
Undecided
Agree
Strongly Agree
Prev
Next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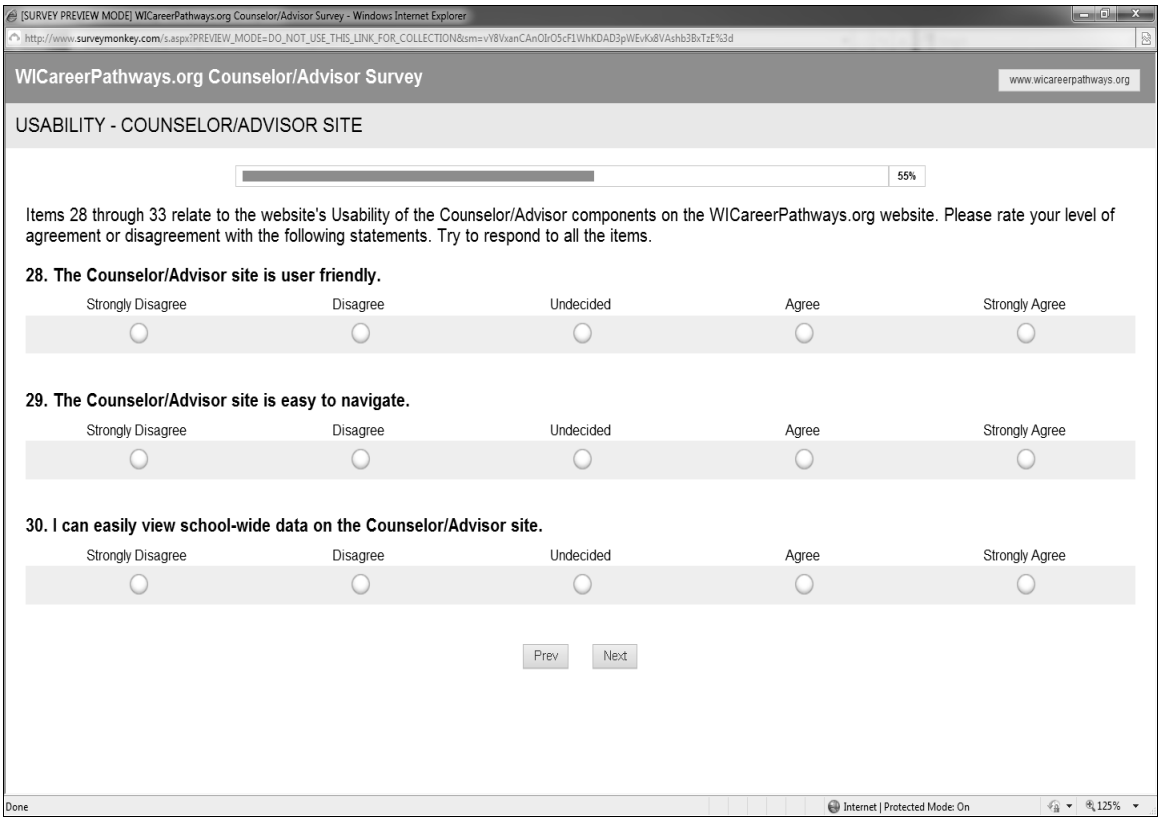
WICareerPathways.org Counselor/Advisor Survey
www.wicareerpathways.org
SATISFACTION - STUDENT WEBSITE (continued)
50%
25. I am satisfied with the training materials for the Student website.
Strongly Disagree
Disagree
Undecided
Agree
Strongly Agree
26. Overall, I am satisfied with the Student website.
Strongly Disagree
Disagree
Undecided
Agree
Strongly Agree
27. The Student website meets my expectations.
Strongly Disagree
Disagree
Undecided
Agree
Strongly Agree
Prev
Next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WICareerPathways.org Counselor/Advisor Survey
www.wicareerpathways.org
USABILITY - COUNSELOR/ADVISOR SITE
55%
Items 28 through 33 relate to the website's Usability of the Counselor/Advisor components on the WICareerPathways.org website. Please rate your level of agreement or disagreement with the following statements. Try to respond to all the items.
28. The Counselor/Advisor site is user friendly.
Strongly Disagree
Disagree
Undecided
Agree
Strongly Agree
29. The Counselor/Advisor site is easy to navigate.
Strongly Disagree
Disagree
Undecided
Agree
Strongly Agree
30. I can easily view school-wide data on the Counselor/Advisor site.
Strongly Disagree
Disagree
Undecided
Agree
Strongly Agree
Prev
Next
Done
Internet | Protected Mode: On
125%


[SURVEY PREVIEW MODE] WICareerPathways.org Counselor/Advisor Survey - Windows Internet Explorer
http://www.surveymonkey.com/s.aspx?PREVIEW_MODE=DO_NOT_USE_THIS_LINK_FOR_COLLECTION&sm=vY8VxanCAnOIrO5cF1WhKDAD3pWEvKx8VAshb3BxTzE%3d
WICareerPathways.org Counselor/Advisor Survey
www.wicareerpathways.org
USABILITY - COUNSELOR/ADVISOR COMPONENTS (continued)
60%
31. I can easily access student data on the Counselor/Advisor site.
Strongly Disagree
Disagree
Undecided
Agree
Strongly Agree
32. I can easily create a student group on the Counselor/Advisor site.
Strongly Disagree
Disagree
Undecided
Agree
Strongly Agree
33. I can easily view my students' profiles and Academic Career Plans on the Counselor/Advisor site.
Strongly Disagree
Disagree
Undecided
Agree
Strongly Agree
Prev
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Done
Internet | Protected Mode: On
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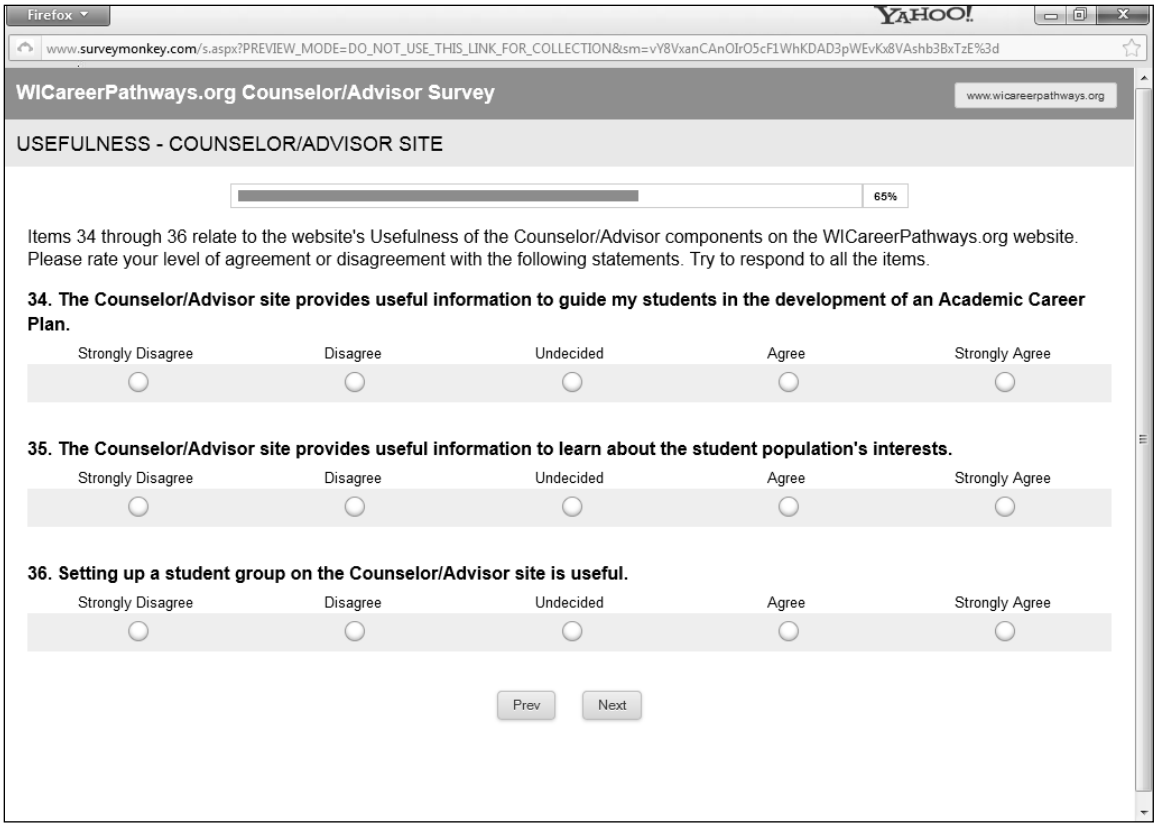
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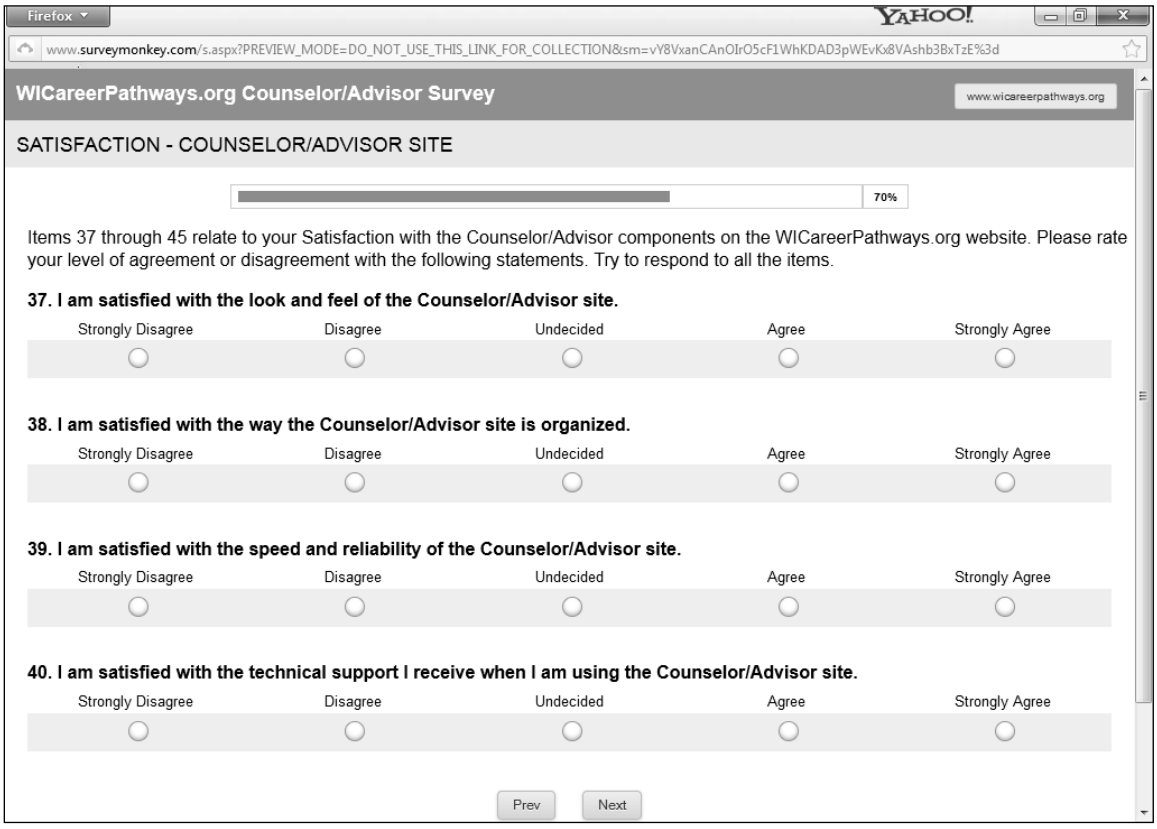
WICareerPathways.org Counselor/Advisor Survey
www.wicareerpathways.org
USEFULNESS - COUNSELOR/ADVISOR SITE
65%
Items 34 through 36 relate to the website's Usefulness of the Counselor/Advisor components on the WICareerPathways.org website. Please rate your level of agreement or disagreement with the following statements. Try to respond to all the items.
34. The Counselor/Advisor site provides useful information to guide my students in the development of an Academic Career Plan.
Strongly Disagree
Disagree
Undecided
Agree
Strongly Agree
35. The Counselor/Advisor site provides useful information to learn about the student population's interests.
Strongly Disagree
Disagree
Undecided
Agree
Strongly Agree
36. Setting up a student group on the Counselor/Advisor site is useful.
Strongly Disagree
Disagree
Undecided
Agree
Strongly Agree
Prev
Next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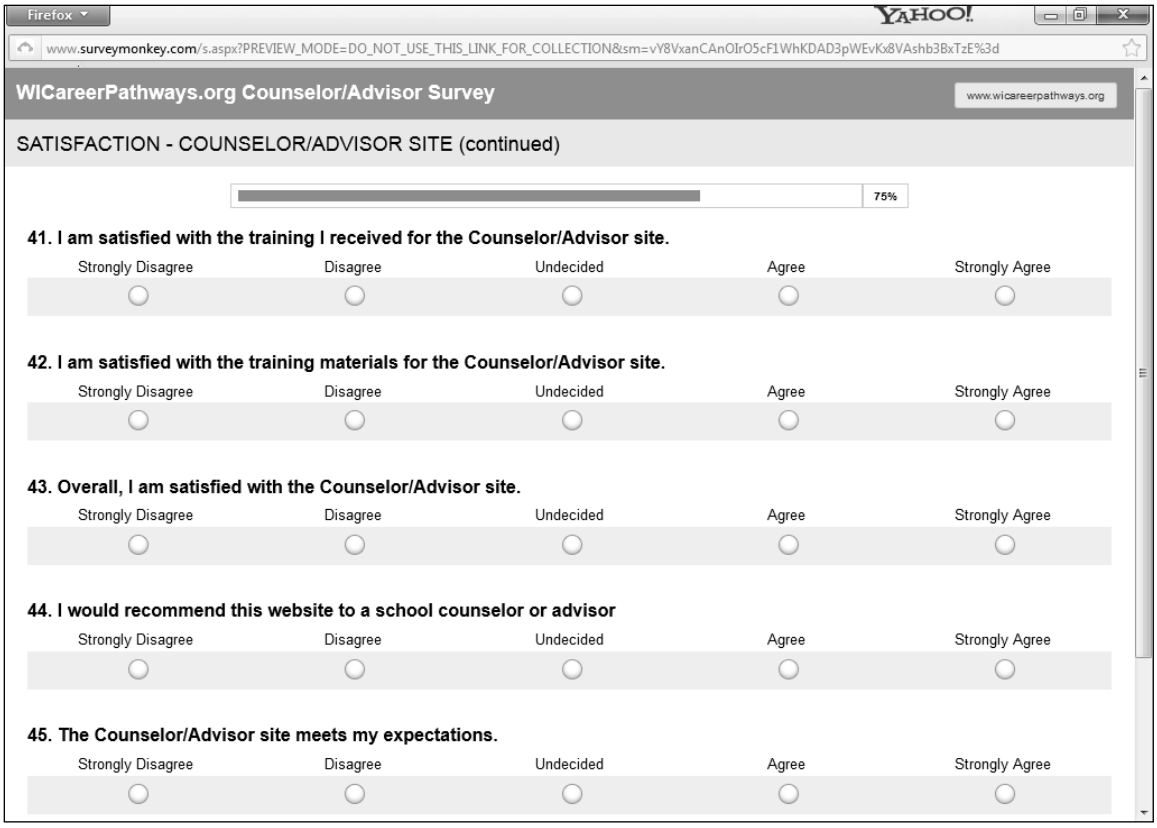
WICareerPathways.org Counselor/Advisor Survey
www.wicareerpathways.org
SATISFACTION - COUNSELOR/ADVISOR SITE
70%
Items 37 through 45 relate to your Satisfaction with the Counselor/Advisor components on the WICareerPathways.org website. Please rate your level of agreement or disagreement with the following statements. Try to respond to all the items.
37. I am satisfied with the look and feel of the Counselor/Advisor site.
Strongly Disagree
Disagree
Undecided
Agree
Strongly Agree
38. I am satisfied with the way the Counselor/Advisor site is organized.
Strongly Disagree
Disagree
Undecided
Agree
Strongly Agree
39. I am satisfied with the speed and reliability of the Counselor/Advisor site.
Strongly Disagree
Disagree
Undecided
Agree
Strongly Agree
40. I am satisfied with the technical support I receive when I am using the Counselor/Advisor site.
Strongly Disagree
Disagree
Undecided
Agree
Strongly Agree
Prev
Next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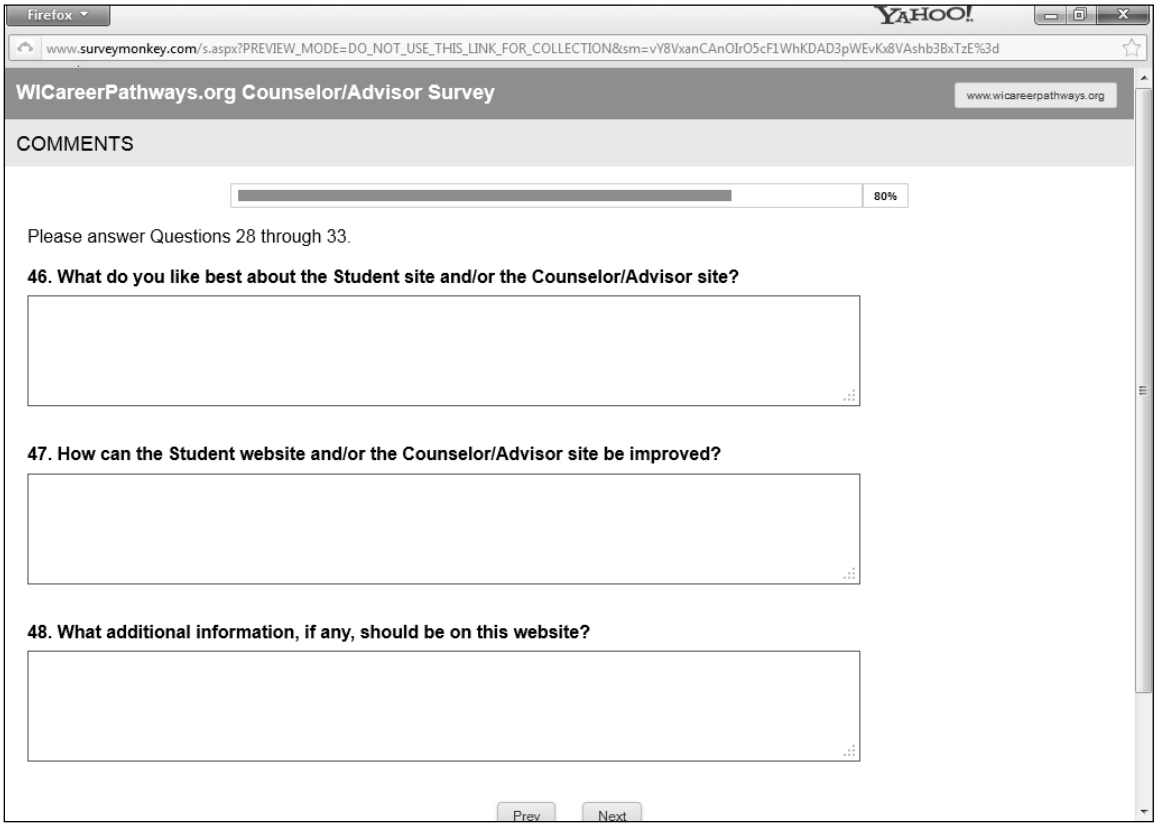
WICareerPathways.org Counselor/Advisor Survey
www.wicareerpathways.org
SATISFACTION - COUNSELOR/ADVISOR SITE (continued)
75%
41. I am satisfied with the training I received for the Counselor/Advisor site.
Strongly Disagree
Disagree
Undecided
Agree
Strongly Agree
42. I am satisfied with the training materials for the Counselor/Advisor site.
Strongly Disagree
Disagree
Undecided
Agree
Strongly Agree
43. Overall, I am satisfied with the Counselor/Advisor site.
Strongly Disagree
Disagree
Undecided
Agree
Strongly Agree
44. I would recommend this website to a school counselor or advisor
Strongly Disagree
Disagree
Undecided
Agree
Strongly Agree
45. The Counselor/Advisor site meets my expectations.
Strongly Disagree
Disagree
Undecided
Agree
Strongly Agree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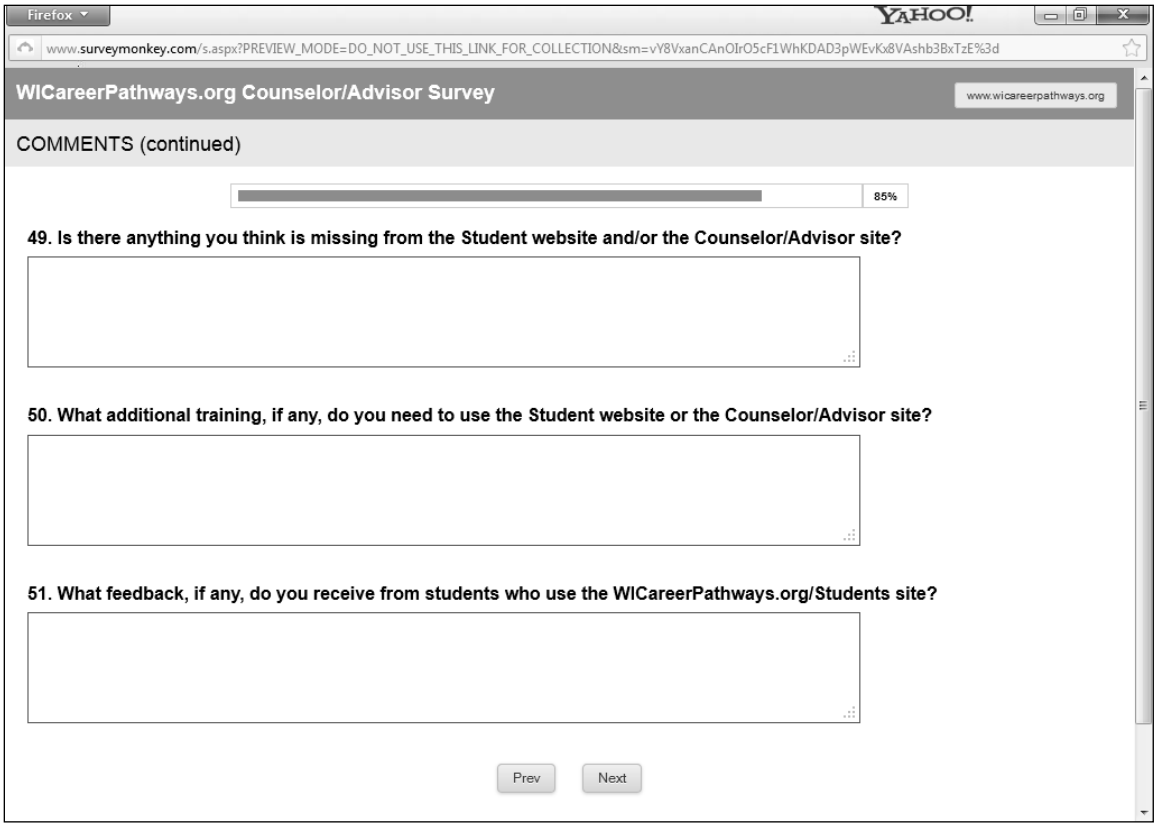
WICareerPathways.org Counselor/Advisor Survey
www.wicareerpathways.org
COMMENTS
80%
Please answer Questions 28 through 33.
46. What do you like best about the Student site and/or the Counselor/Advisor site?
47. How can the Student website and/or the Counselor/Advisor site be improved?
48. What additional information, if any, should be on this website?
Prev
Next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WICareerPathways.org Counselor/Advisor Survey
www.wicareerpathways.org
COMMENTS (continued)
85%
49. Is there anything you think is missing from the Student website and/or the Counselor/Advisor site?
50. What additional training, if any, do you need to use the Student website or the Counselor/Advisor site?
51. What feedback, if any, do you receive from students who use the WICareerPathways.org/Students site?
Prev
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WICareerPathways.org Counselor/Advisor Survey
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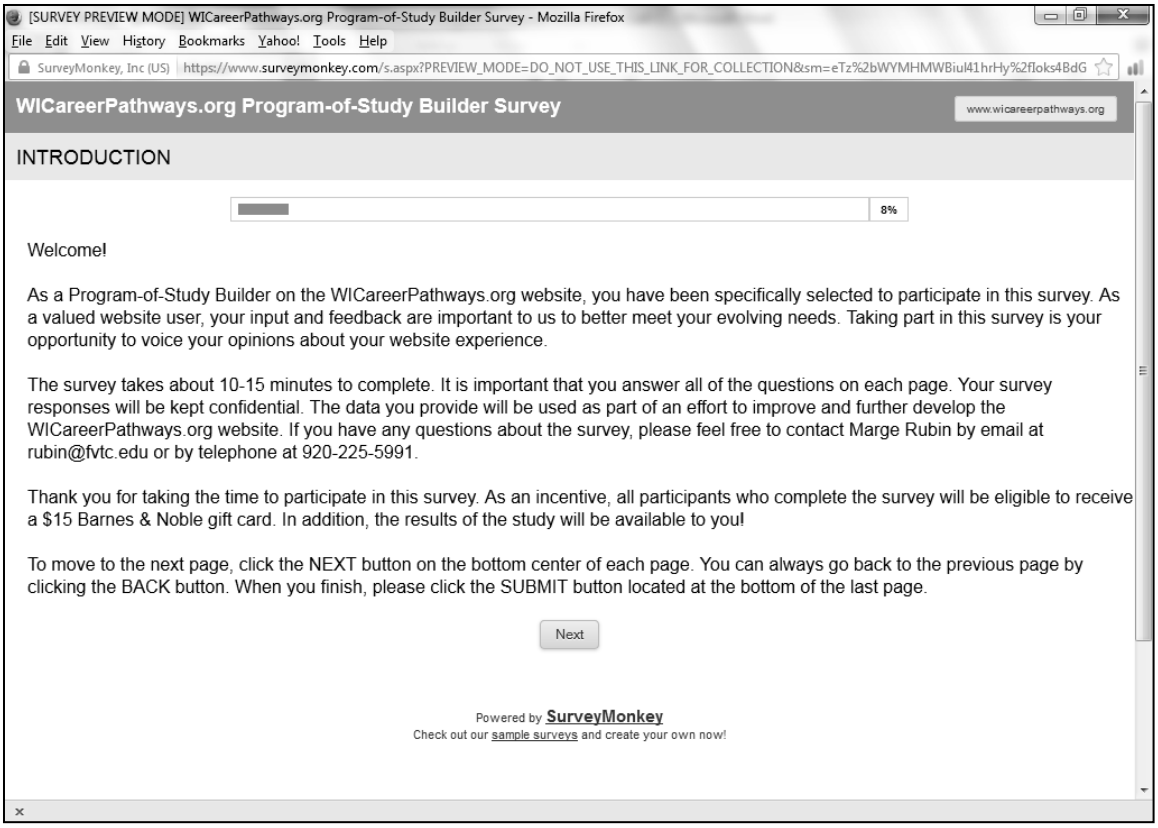
THANK YOU
100%
Thank you for completing the WICareerPathways.org Counselor/Advisor Survey.
Prev
Done

Appendix E

WICareerPathways.org Program-of-Study Builder Survey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File Edit View History Bookmarks Yahoo! Tools Help
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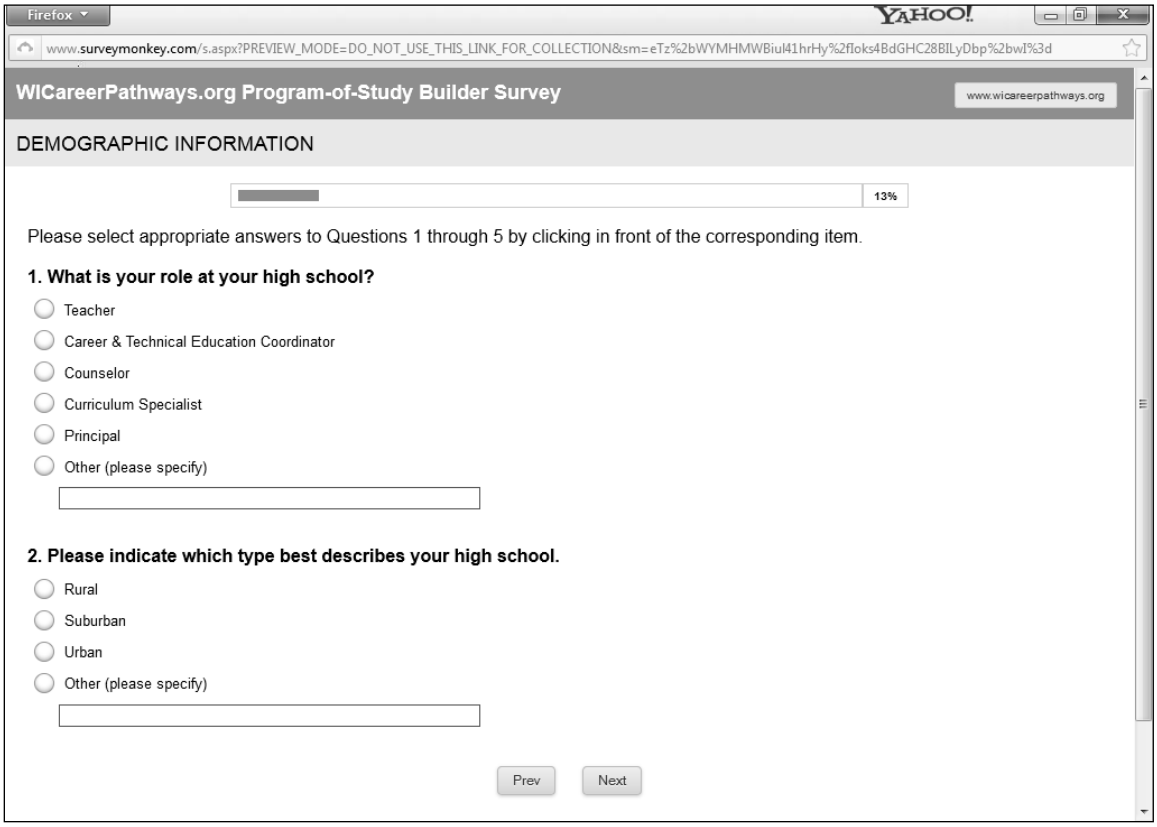
WICareerPathways.org Program-of-Study Builder Survey
www.wicareerpathways.org
INTRODUCTION
8%
Welcome!
As a Program-of-Study Builder on the WICareerPathways.org website, you have been specifically selected to participate in this survey. As a valued website user, your input and feedback are important to us to better meet your evolving needs. Taking part in this survey is your opportunity to voice your opinions about your website experience.
The survey takes about 10-15 minutes to complete. It is important that you answer all of the questions on each page. Your survey responses will be kept confidential. The data you provide will be used as part of an effort to improve and further develop the WICareerPathways.org website. If you have any questions about the survey, please feel free to contact Marge Rubin by email at rubin@fvtc.edu or by telephone at 920-225-5991.
Thank you for taking the time to participate in this survey. As an incentive, all participants who complete the survey will be eligible to receive a $15 Barnes & Noble gift card. In addition, the results of the study will be available to you!
To move to the next page, click the NEXT button on the bottom center of each page. You can always go back to the previous page by clicking the BACK button. When you finish, please click the SUBMIT button located at the bottom of the last page.
Next
Powered by SurveyMonkey
Check out our sample surveys and create your own now!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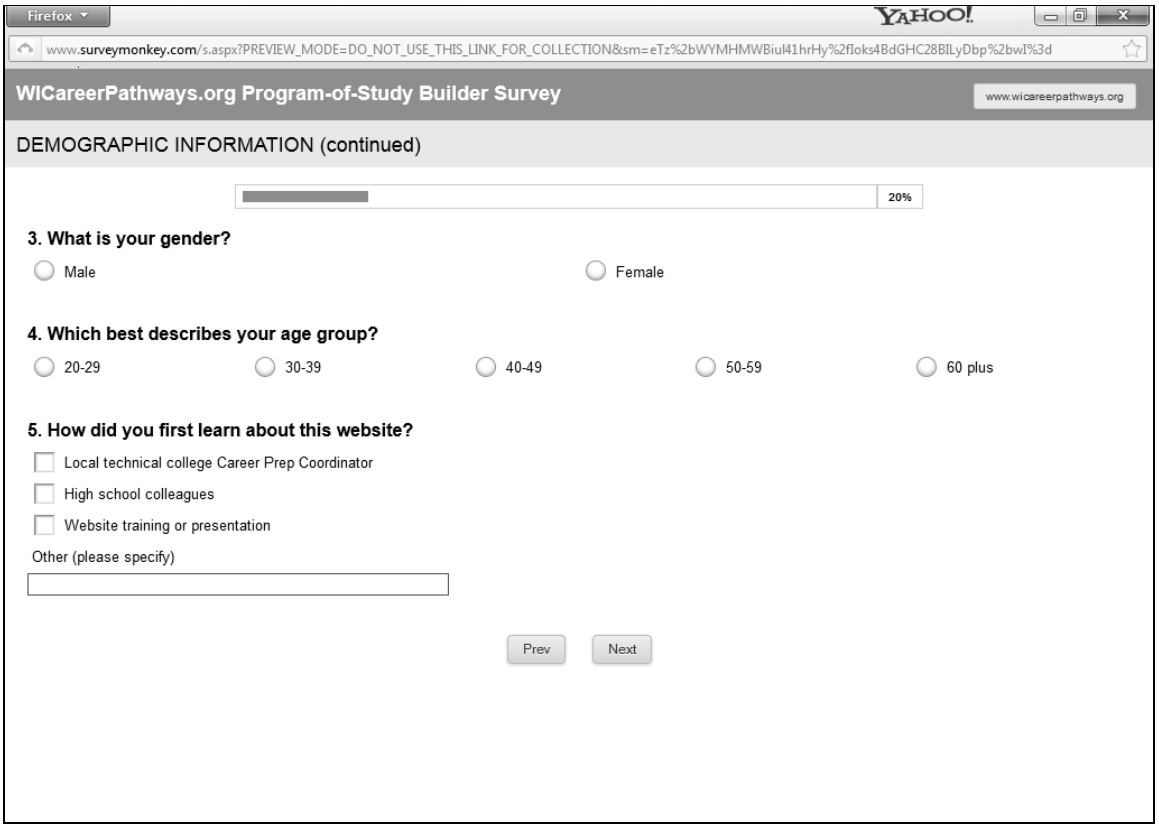
WICareerPathways.org Program-of-Study Builder Survey
www.wicareerpathways.org
DEMOGRAPHIC INFORMATION
13%
Please select appropriate answers to Questions 1 through 5 by clicking in front of the corresponding item.
1. What is your role at your high school?
Teacher
Career & Technical Education Coordinator
Counselor
Curriculum Specialist
Principal
Other (please specify)
2. Please indicate which type best describes your high school.
Rural
Suburban
Urban
Other (please specify)
Prev
Next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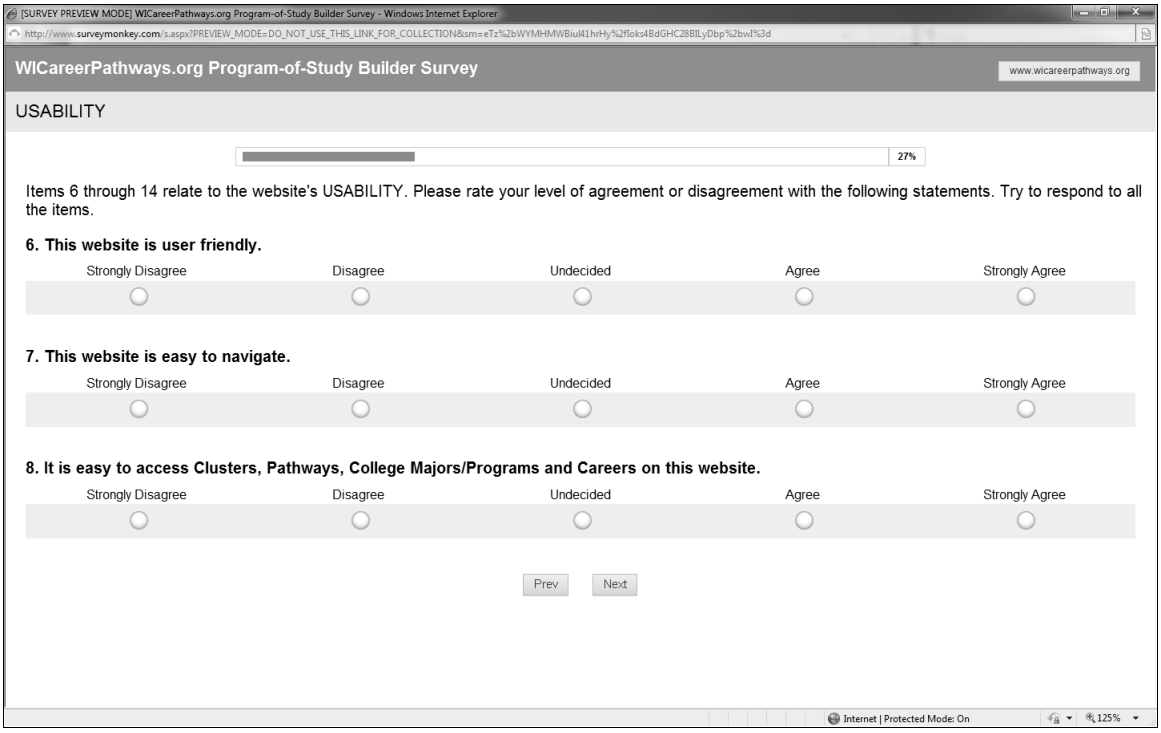
WICareerPathways.org Program-of-Study Builder Survey
www.wicareerpathways.org
DEMOGRAPHIC INFORMATION (continued)
20%
3. What is your gender?
Male
Female
4. Which best describes your age group?
20-29
30-39
40-49
50-59
60 plus
5. How did you first learn about this website?
Local technical college Career Prep Coordinator
High school colleagues
Website training or presentation
Other (please specify)
Prev
Next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WICareerPathways.org Program-of-Study Builder Survey
www.wicareerpathways.org
USABILITY
27%
Items 6 through 14 relate to the website's USABILITY. Please rate your level of agreement or disagreement with the following statements. Try to respond to all the items.
6. This website is user friendly.
Strongly Disagree
Disagree
Undecided
Agree
Strongly Agree
7. This website is easy to navigate.
Strongly Disagree
Disagree
Undecided
Agree
Strongly Agree
8. It is easy to access Clusters, Pathways, College Majors/Programs and Careers on this website.
Strongly Disagree
Disagree
Undecided
Agree
Strongly Agree
Prev
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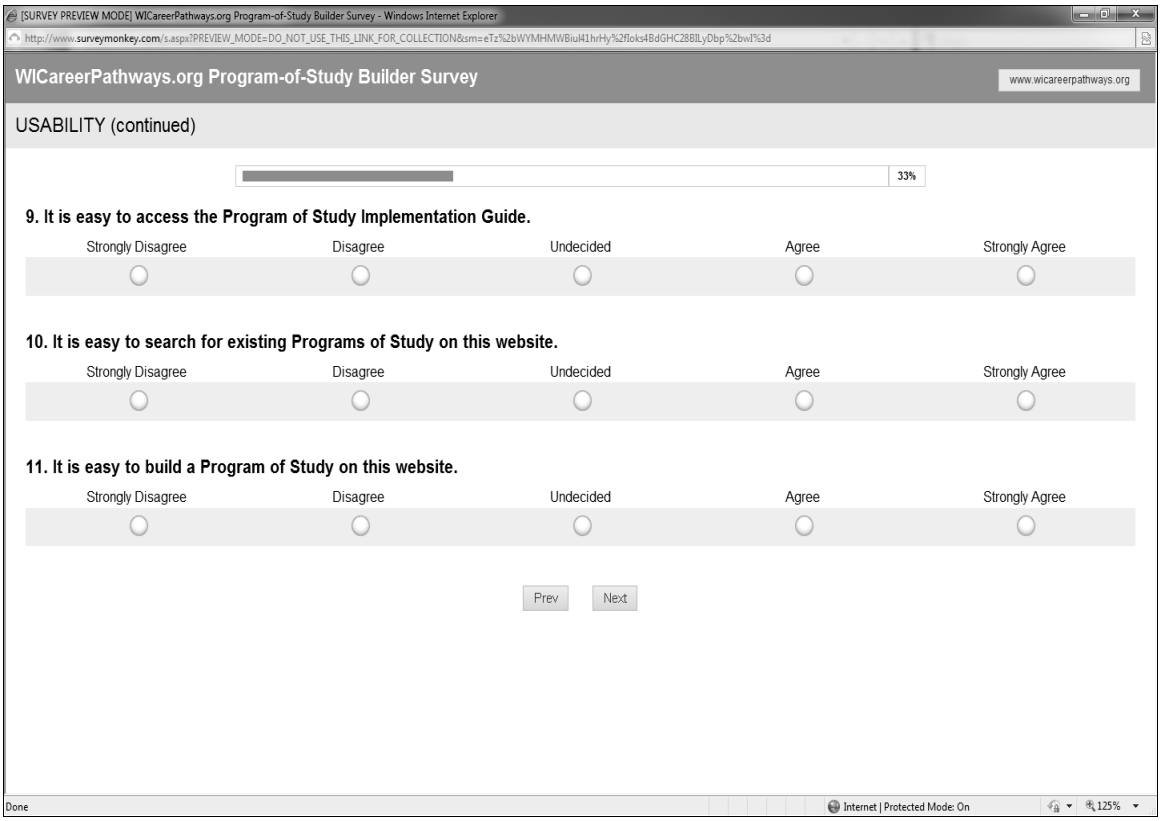
Internet | Protected Mode: On
125%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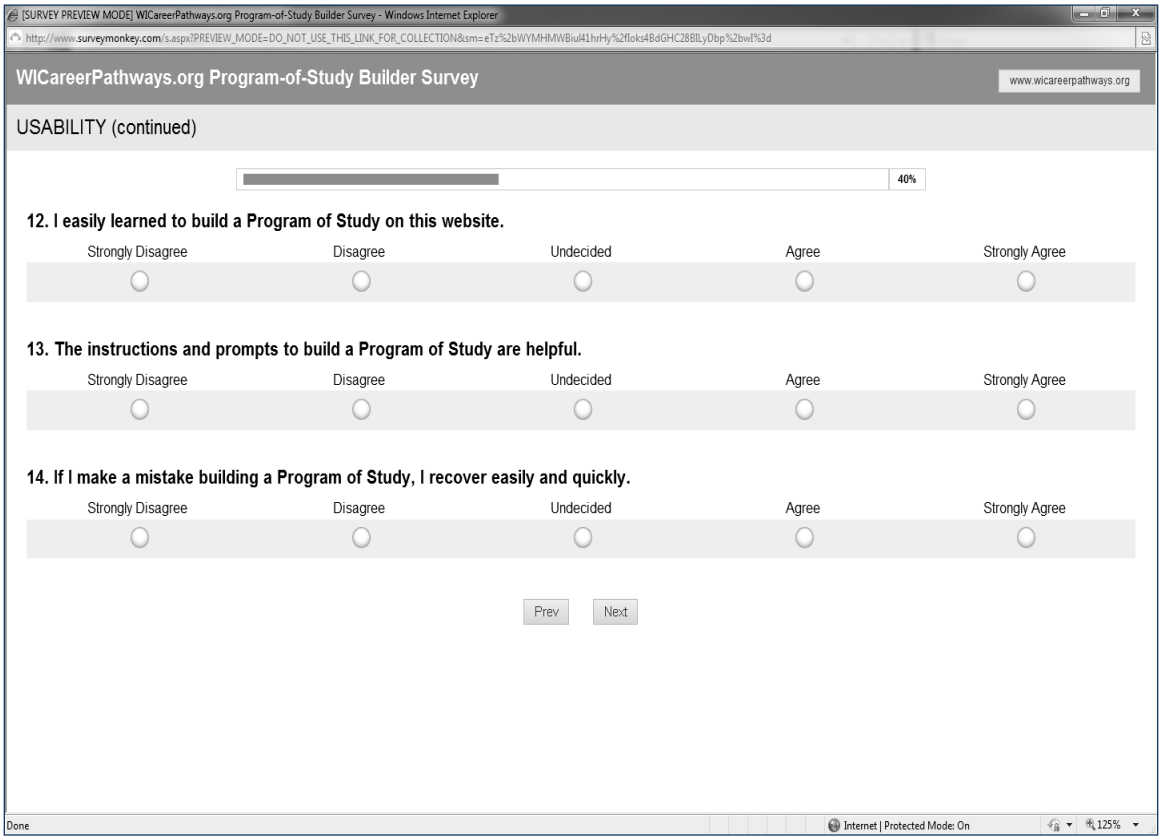
WICareerPathways.org Program-of-Study Builder Survey
www.wicareerpathways.org
USABILITY (continued)
33%
9. It is easy to access the Program of Study Implementation Guide.
Strongly Disagree
Disagree
Undecided
Agree
Strongly Agree
10. It is easy to search for existing Programs of Study on this website.
Strongly Disagree
Disagree
Undecided
Agree
Strongly Agree
11. It is easy to build a Program of Study on this website.
Strongly Disagree
Disagree
Undecided
Agree
Strongly Agree
Prev
Next
Done
Internet | Protected Mode: On
125%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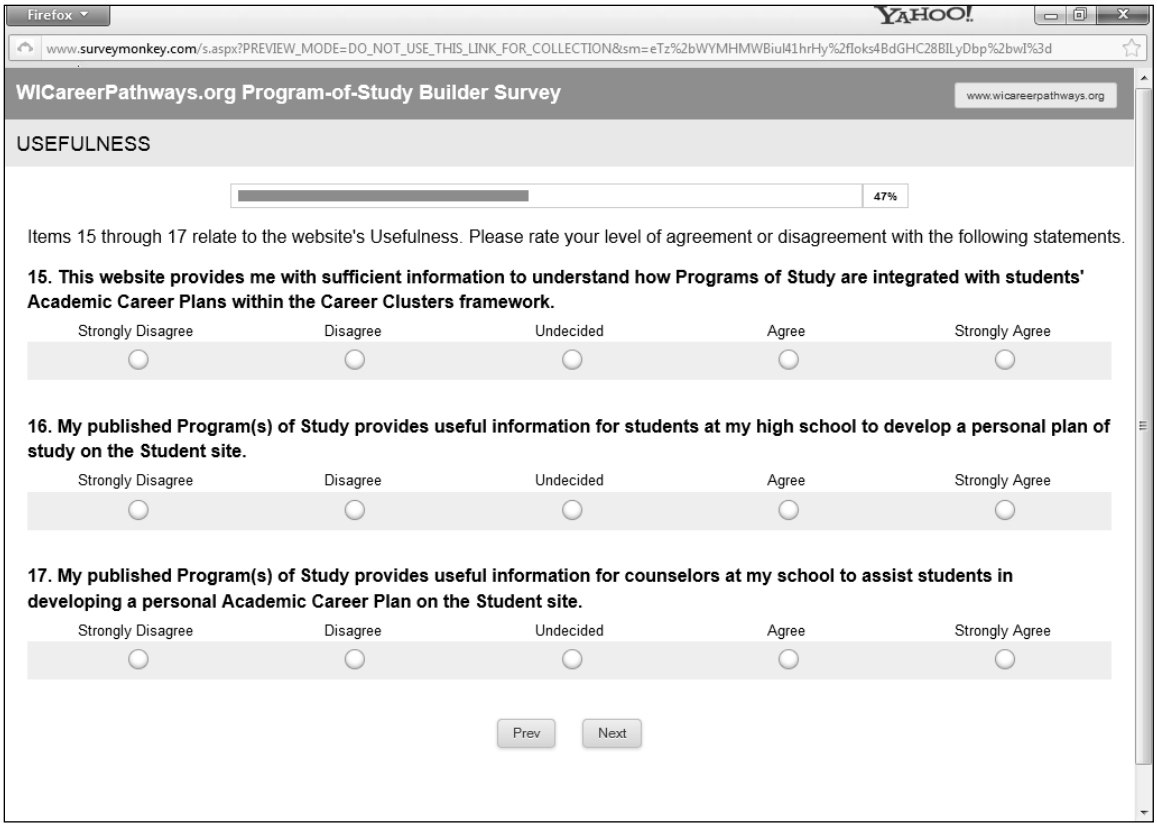
WICareerPathways.org Program-of-Study Builder Survey
www.wicareerpathways.org
USABILITY (continued)
40%
12. I easily learned to build a Program of Study on this website.
Strongly Disagree
Disagree
Undecided
Agree
Strongly Agree
13. The instructions and prompts to build a Program of Study are helpful.
Strongly Disagree
Disagree
Undecided
Agree
Strongly Agree
14. If I make a mistake building a Program of Study, I recover easily and quickly.
Strongly Disagree
Disagree
Undecided
Agree
Strongly Agree
Prev
Next
Done
Internet | Protected Mode: On
125%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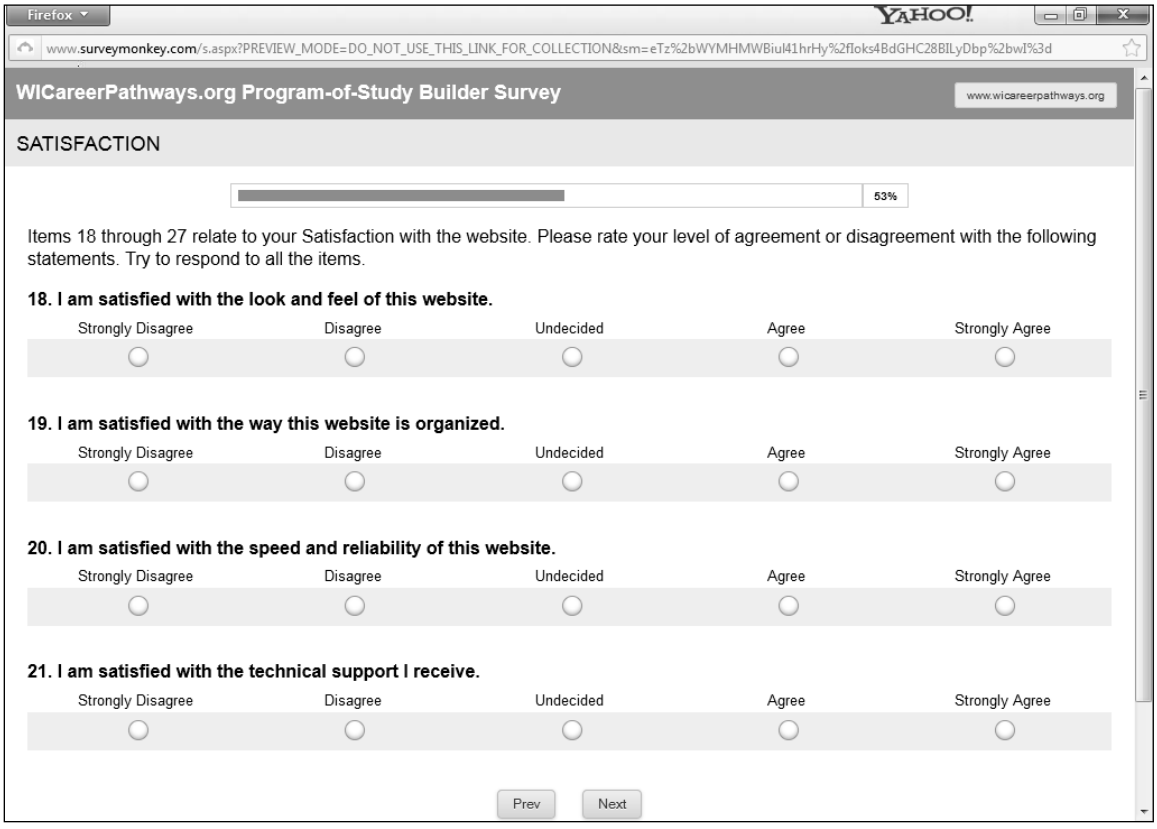
WICareerPathways.org Program-of-Study Builder Survey
www.wicareerpathways.org
USEFULNESS
47%
Items 15 through 17 relate to the website's Usefulness. Please rate your level of agreement or disagreement with the following statements.
15. This website provides me with sufficient information to understand how Programs of Study are integrated with students' Academic Career Plans within the Career Clusters framework.
Strongly Disagree
Disagree
Undecided
Agree
Strongly Agree
16. My published Program(s) of Study provides useful information for students at my high school to develop a personal plan of study on the Student site.
Strongly Disagree
Disagree
Undecided
Agree
Strongly Agree
17. My published Program(s) of Study provides useful information for counselors at my school to assist students in developing a personal Academic Career Plan on the Student site.
Strongly Disagree
Disagree
Undecided
Agree
Strongly Agree
Prev
Next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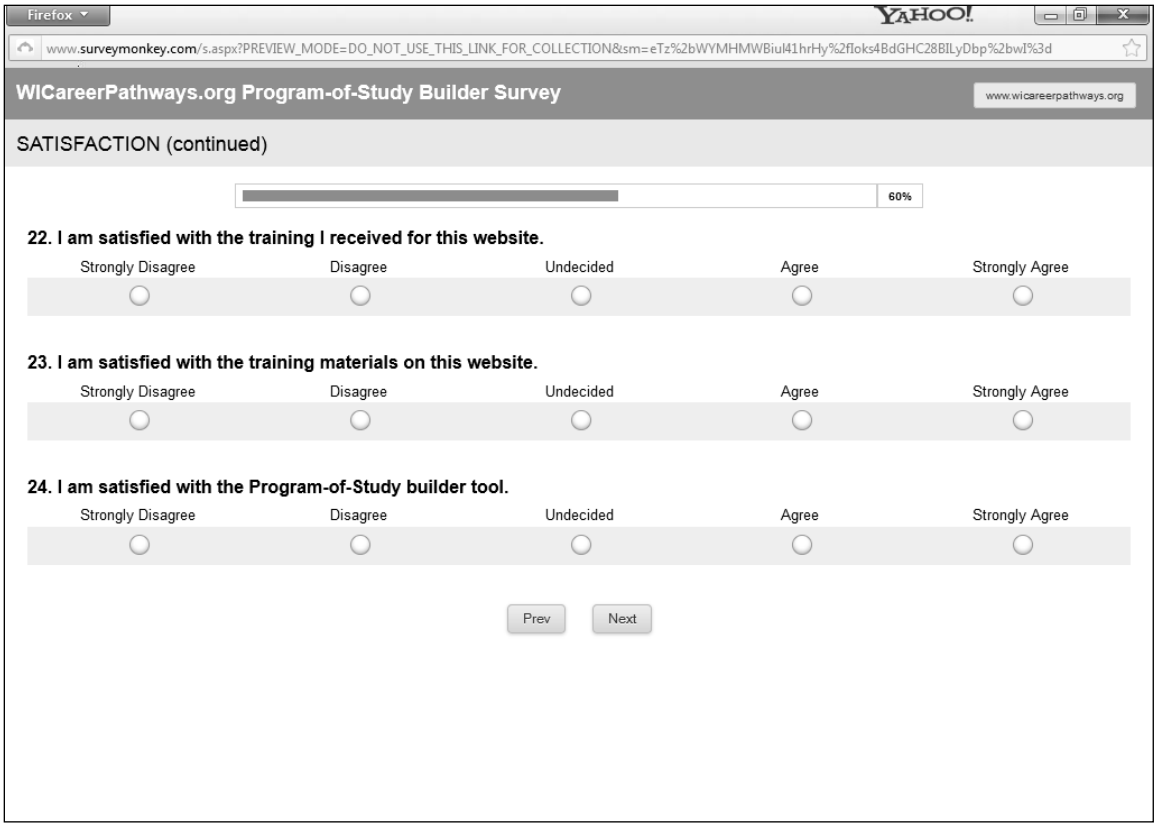
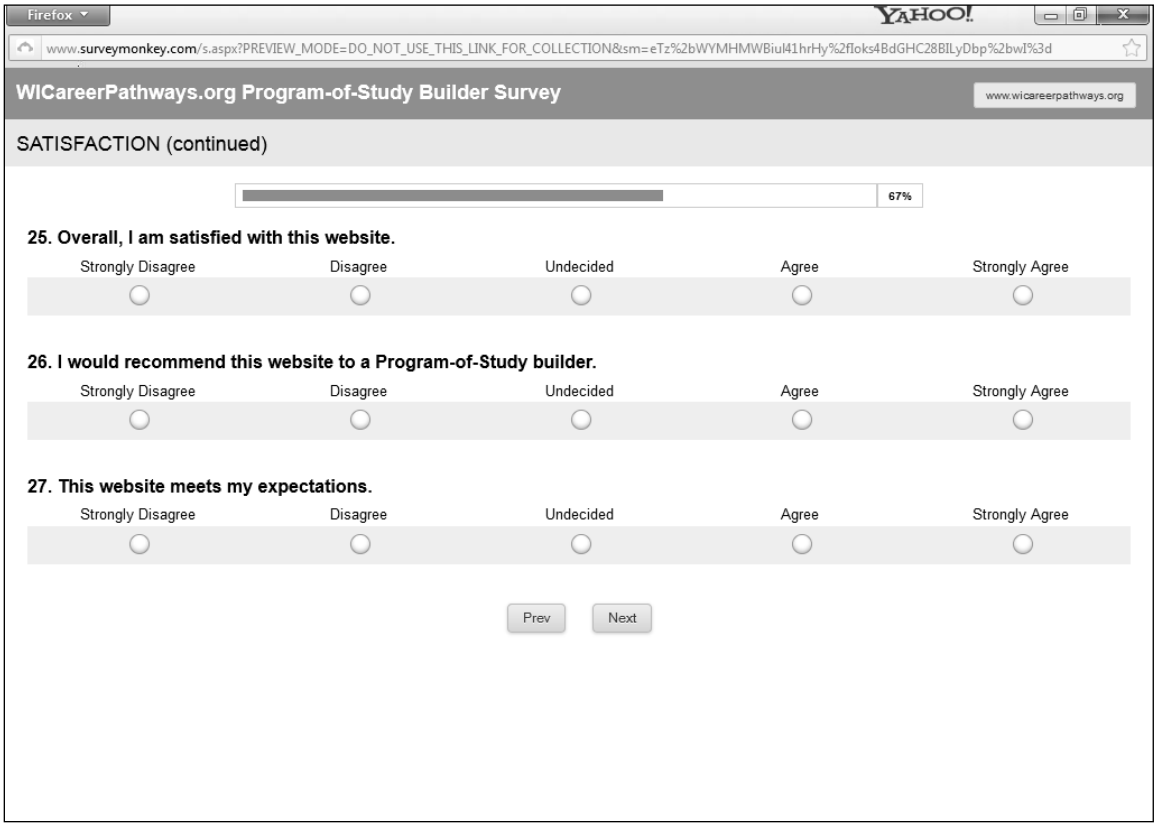
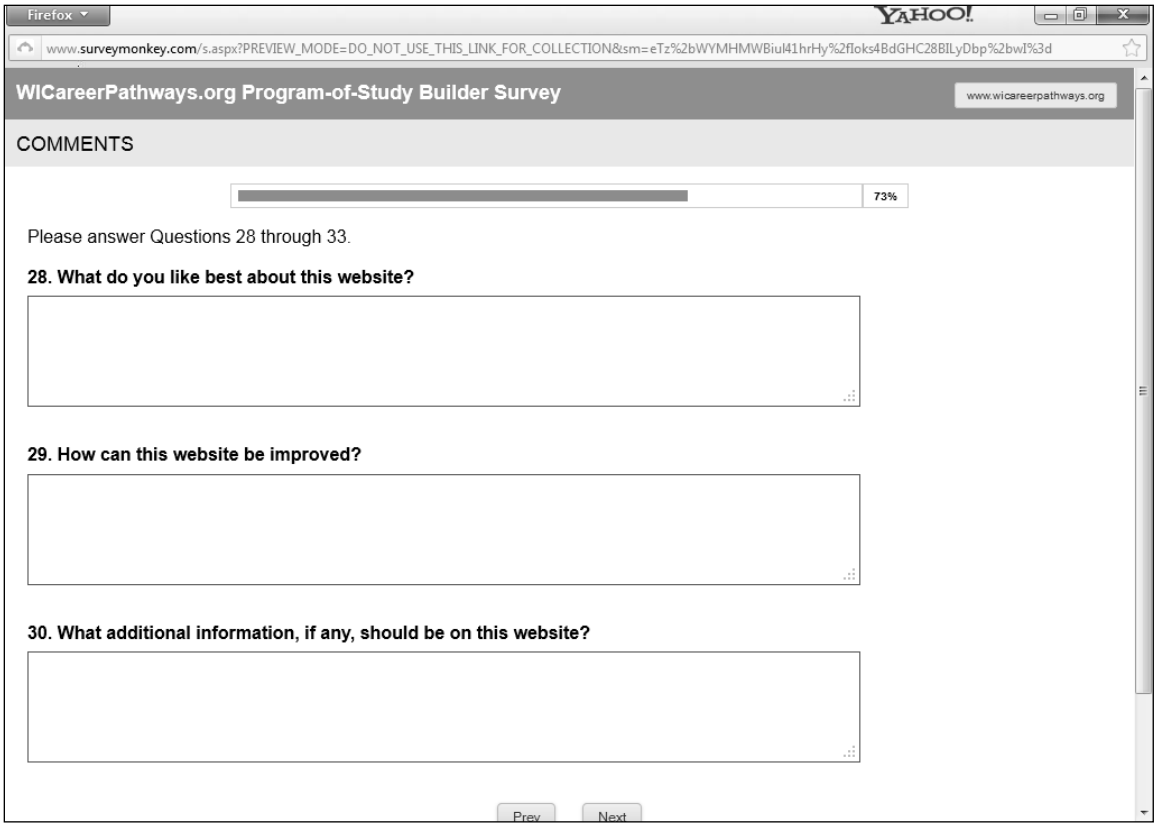
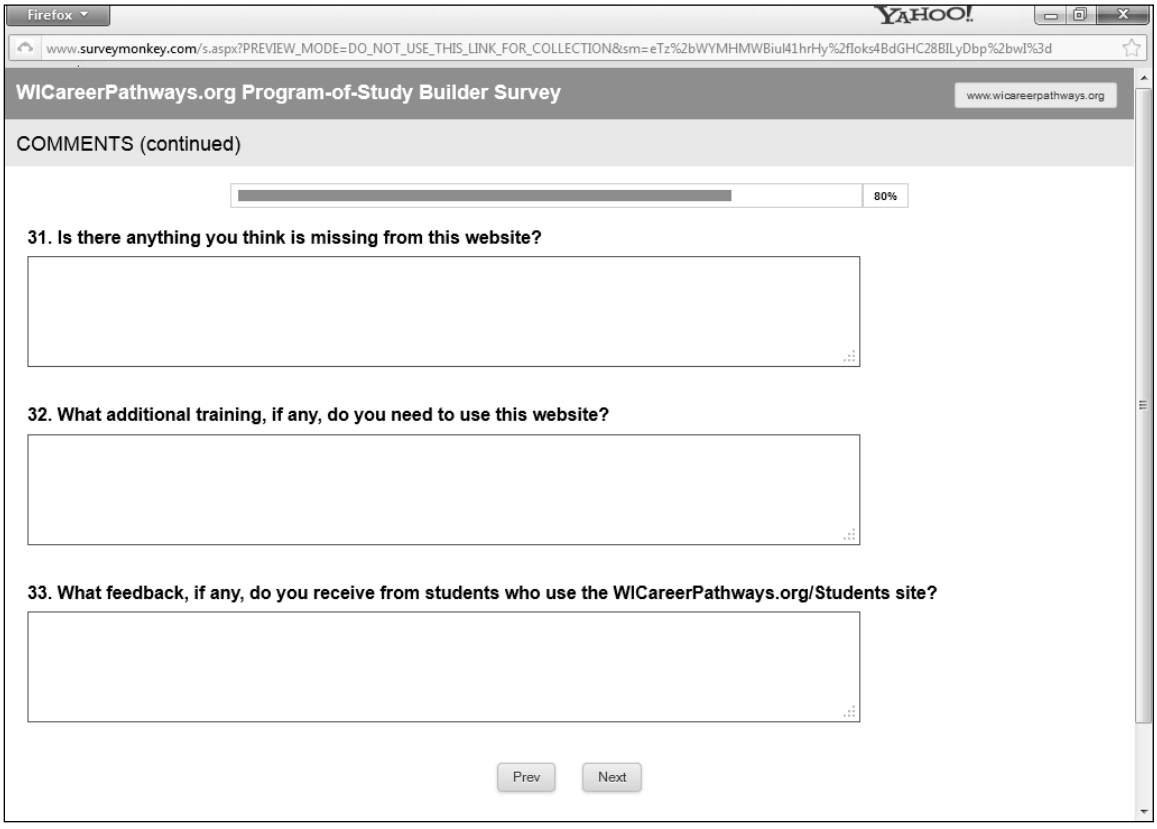
WICareerPathways.org Program-of-Study Builder Survey
www.wicareerpathways.org
SATISFACTION
53%
Items 18 through 27 relate to your Satisfaction with the website. Please rate your level of agreement or disagreement with the following statements. Try to respond to all the items.
18. I am satisfied with the look and feel of this website.
Strongly Disagree
Disagree
Undecided
Agree
Strongly Agree
19. I am satisfied with the way this website is organized.
Strongly Disagree
Disagree
Undecided
Agree
Strongly Agree
20. I am satisfied with the speed and reliability of this website.
Strongly Disagree
Disagree
Undecided
Agree
Strongly Agree
21. I am satisfied with the technical support I receive.
Strongly Disagree
Disagree
Undecided
Agree
Strongly Agree
Prev
Next


Firefox
YAHOO!
www.surveymonkey.com/s.aspx?PREVIEW_MODE=DO_NOT_USE_THIS_LINK_FOR_COLLECTION&sm=eTz%2bWYMHMWBiul41hrHy%2floks4BdGHC28BILyDbp%2bwI%3d
WICareerPathways.org Program-of-Study Builder Survey
www.wicareerpathways.org
SATISFACTION (continued)
60%
22. I am satisfied with the training I received for this website.
Strongly Disagree
Disagree
Undecided
Agree
Strongly Agree
23. I am satisfied with the training materials on this website.
Strongly Disagree
Disagree
Undecided
Agree
Strongly Agree
24. I am satisfied with the Program-of-Study builder tool.
Strongly Disagree
Disagree
Undecided
Agree
Strongly Agree
Prev
Next


Firefox
YAHOO!
www.surveymonkey.com/s.aspx?PREVIEW_MODE=DO_NOT_USE_THIS_LINK_FOR_COLLECTION&sm=eTz%2bWYMHMWBiul41hrHy%2floks4BdGHC28BILyDbp%2bwI%3d
WICareerPathways.org Program-of-Study Builder Survey
www.wicareerpathways.org
SATISFACTION (continued)
67%
25. Overall, I am satisfied with this website.
Strongly Disagree
Disagree
Undecided
Agree
Strongly Agree
26. I would recommend this website to a Program-of-Study builder.
Strongly Disagree
Disagree
Undecided
Agree
Strongly Agree
27. This website meets my expectations.
Strongly Disagree
Disagree
Undecided
Agree
Strongly Agree
Prev
Next


Firefox
YAHOO!
www.surveymonkey.com/s.aspx?PREVIEW_MODE=DO_NOT_USE_THIS_LINK_FOR_COLLECTION&sm=eTz%2bWYMHMWBiul41hrHy%2floks4BdGHC28BILyDbp%2bwI%3d
WICareerPathways.org Program-of-Study Builder Survey
www.wicareerpathways.org
COMMENTS
73%
Please answer Questions 28 through 33.
28. What do you like best about this website?
29. How can this website be improved?
30. What additional information, if any, should be on this website?
Prev
Next


Firefox
YAHOO!
www.surveymonkey.com/s.aspx?PREVIEW_MODE=DO_NOT_USE_THIS_LINK_FOR_COLLECTION&sm=eTz%2bWYMHMWBiul41hrHy%2floks4BdGHC28BILyDbp%2bwI%3d
WICareerPathways.org Program-of-Study Builder Survey
www.wicareerpathways.org
COMMENTS (continued)
80%
31. Is there anything you think is missing from this website?
32. What additional training, if any, do you need to use this website?
33. What feedback, if any, do you receive from students who use the WICareerPathways.org/Students site?
Prev
Next


Firefox
YAHOO!
www.surveymonkey.com/s.aspx?PREVIEW_MODE=DO_NOT_USE_THIS_LINK_FOR_COLLECTION&sm=eTz%2bWYMHMWBiul41hrHy%2floks4BdGHC28BILyDbp%2bwI%3d
WICareerPathways.org Program-of-Study Builder Survey
www.wicareerpathways.org
THANK YOU
100%
Thank you for completing the WICareerPathways.org Program-of-Study Builder Survey.
Prev
Done

Appendix F

Semistructured Focus-Group Interview Protocol

Semistructured Focus-Group Interview Protocol

Time of Interview:

Date:

Place:

Participants:

Introduction:
My name is Marge Rubin, and I am conducting a research study as part of my Ed.D. program at Nova Southeastern University. The purpose of this study is to conduct an evaluation of the WICareerPathways.org Web site. The data that I collect as part of my research will be used in my dissertation.

Your identity in this study will be treated as confidential. The results of this study may be published but will not give your name or include any identifiable reference to you.

The first phase of this study involved collecting and analyzing data from three surveys, one for each of three user groups of the WICareerPathways.org Web site: Career prep administrators, program-of-study builders and counselors and advisers.

You are here because of your role relating to the WICareerPathways Web site, either as a career prep administrator, program-of-study builder, and/or counselor and adviser. I encourage you to be open and honest in your answers so that accurate information can be gathered. I appreciate your time in assisting with this data collection.

Brief Description of the WICareerPathways Web site:
The WICareerPathways Web site aids secondary educators in the development of secondary-to-postsecondary programs of study, assists middle and high school students in career exploration and academic planning, and helps middle and high school counselors guide students for success in careers and college by providing them with access to school-wide and individual student Web site activity. The Web site was developed in phases following a year of planning during the 2008-09 fiscal year.

The first phase was launched in 2010 and included features and an interactive tool to assist secondary educators in the development of programs of study linking secondary coursework to postsecondary educational programs. The second phase called for the development of specific career exploration features aimed at middle and high school students. The third phase was developed to provide school counselors/adviser with access to school-wide and individual student activity on the WICareerPathways Web site.

Questions:

1. What are some of the strengths of the WICareerPathways Web site?

    a. Program-of-Study Builder site

    b. Student site

    c. Counselor and adviser site

2. What are some of the weaknesses of the WICareerPathways Web site?

    a. Program-of-Study Builder site

    b. Student site

    c. Counselor and adviser site

3. What suggestions do you have to improve existing features on the Web site?

    d. Program-of-Study Builder site

    e. Student site

    f. Counselor and adviser site

4. What suggestions do you have to add new features on the Web site?

    a. Program-of-Study Builder site

    b. Student site

    c. Counselor and adviser site

5. What is your reaction to the preliminary plan for ongoing development and improvement of the Web site?

6. Is there anything else you would like to comment on related to this research study?

Appendix G

Members of the Evaluation Committee

Members of the Evaluation Committee

Members of the evaluation committee were selected based on their expertise and involvement in the WICareerPathways Web site project. One member was selected based on her expertise in research and evaluation methods. The following individuals served as the evaluation committee members in the research study of the WICareerPathways Web site:

Director-Institutional Effectiveness, Fox Valley Technical College.

Manager-Learning Innovations and Technology, Fox Valley Technical College; serves as project technology developer of the WICareerPathways Web site; serves on the Wisconsin Career Pathways Web site project team; member of the executive team.

Education Director, Career Prep, Wisconsin Technical College System; oversees the WICareerPathways Web site grant activities and serves on the project team.

Assistant Director, Career and Technical Education, Wisconsin Department of Public Instruction; serves on the project team.

Appendix H

E-Mail Prenotifications to Participate in the Surveys

E-mail Pre-notification to Participate in
WICareerPathways.org Career-Prep Administrator Survey

Dear Career Prep Administrator,

I am conducting a research study as part of my EdD program at Nova Southeastern University. The purpose of this study is to conduct an evaluation of the WICareerPathways Web site. The data that I collect will be used in my dissertation.

In this proposed study, the 15 Wisconsin technical college career prep coordinators who serve in an administrative role on the Web site will be asked to complete the survey voluntarily. As a valued Web site user, your input and feedback are important to me. Taking part in this survey is your opportunity to voice your opinions about your Web site experience. The survey takes about 10-15 minutes to complete.

Participation in this survey is completely voluntary and your responses will be kept confidential. Please read the attached Participation letter for more details.

As an incentive, all participants who complete the survey will be included in a drawing for a $15 Barnes & Noble gift card. In addition, the results of the study will be available to you.

I would appreciate your taking the time to participate in this survey, which will be e-mailed to you in approximately two weeks.

Thank you in advance for your cooperation. If you have any questions, please feel free to contact me.

Sincerely,

Marge Rubin

E-mail Prenotification to Participate in
WICareerPathways.org Counselor and Adviser Survey

Dear Counselor/Advisor,

I am conducting a research study as part of my EdD program at Nova Southeastern University. The purpose of this study is to conduct an evaluation of the WICareerPathways Web site. The data that I collect will be used in my dissertation.

In this proposed study, approximately 200 counselors and advisors on the Web site will be asked to complete the survey voluntarily. As a valued Web site user, your input and feedback are important to me. Taking part in this survey is your opportunity to voice your opinions about your Web site experience. The survey takes about 15-20 minutes to complete.

Participation in this survey is completely voluntary and your responses will be kept confidential. Please read the attached Participation letter for more details.

As an incentive, all participants who complete the survey will be included in a drawing for a $15 Barnes & Noble gift card. In addition, the results of the study will be available to you.

I would appreciate your taking the time to participate in this survey, which will be e-mailed to you in approximately two weeks.

Thank you in advance for your cooperation. If you have any questions, please feel free to contact me.

Sincerely,

Marge Rubin

E-mail Prenotification to Participate in
WICareerPathways.org Program-of-Study Builder Survey

Dear Program-of-Study Builder,

I am conducting a research study as part of my EdD program at Nova Southeastern University. The purpose of this study is to conduct an evaluation of the WICareerPathways Web site. The data that I collect will be used in my dissertation.

In this proposed study, approximately 400 program-of-study builders on the Web site will be asked to complete the survey voluntarily. As a valued Web site user, your input and feedback are important to me. Taking part in this survey is your opportunity to voice your opinions about your Web site experience. The survey takes about 10-15 minutes to complete.

Participation in this survey is completely voluntary and your responses will be kept confidential. Please read the attached Participation letter for more details.

As an incentive, all participants who complete the survey will be included in a drawing for a $15 Barnes & Noble gift card. In addition, the results of the study will be available to you.

I would appreciate your taking the time to participate in this survey, which will be e-mailed to you in approximately two weeks.

Thank you in advance for your cooperation. If you have any questions, please feel free to contact me.

Sincerely,

Marge Rubin

Appendix I

E-Mail Invitations to Participate in the Surveys

E-mail Invitation to Participate in
WICareerPathway.org Career-Prep Administrator Survey

Greetings Career Prep Administrator,

I am conducting a research study as part of my Ed.D. program at Nova Southeastern University. The purpose of this study is to conduct an evaluation of the WICareerPathways.org Web site. The data that I collect will be used in my dissertation.

As a career prep administrator on the WICareerPathways.org Web site, you have been specifically selected to participate in the online WICareerPathways.org Career Prep Administrator Survey. The survey includes a five-point Likert Scale to rate several items related to the ease of use, usefulness, and satisfaction of the WICareerPathways.org Web site, and concludes with a few open-ended questions.

The survey takes about 10-15 minutes to complete. Your identity in this study will be treated as confidential. The results of this study may be published but will not give your name or include any identifiable reference to you.

As an incentive, all participants who complete the survey will be included in a drawing for a $15 Barnes & Noble gift card. In addition, the results of the study will be available to you.

If you choose to participate, please click on this link or type into your browser to access the survey:

Survey Link: http://www.SurveyMonkey.com/s/CareerPrepAdmin

Upon completion of this research study, a copy of the findings will be maintained in my office and will also be given to the Associate Vice President-Office of Instruction at the Wisconsin Technical College System office.

I would appreciate your participation in this important study. If you have any questions, please feel free to call me.

Sincerely,

Marge Rubin

E-Mail Invitation to Participate in the
WICareerPathways.org Counselor and Adviser Survey

Dear Counselor or Advisor,

I am conducting a research study as part of my Ed.D. program at Nova Southeastern University. The purpose of this study is to conduct an evaluation of the WICareerPathways.org Web site. The data that I collect will be used in my dissertation.

As a counselor or advisor on the WICareerPathways.org Web site, you have been specifically selected to participate in the online WICareerPathways.org Counselor/Advisor Survey. The survey begins with a few multiple-choice questions to collect demographic information, a five-point Likert Scale to rate several items related to the ease of use, usefulness, and satisfaction of the WICareerPathways.org Web site, and concludes with a few open-ended questions.

The survey takes about 15-20 minutes to complete. Your identity in this study will be treated as confidential. The results of this study may be published but will not give your name or include any identifiable reference to you.

As an incentive, all participants who complete the survey will be included in a drawing for a $15 Barnes & Noble gift card. In addition, the results of the study will be available to you.

If you choose to participate, please click on this link or type into your browser to access the survey:

Survey Link: http://www.SurveyMonkey.com/s/CounselorAdvisor

Upon completion of this research study, a copy of the findings will be maintained in my office and will also be given to the Associate Vice President-Office of Instruction at the Wisconsin Technical College System office.

I would appreciate your participation in this important study. If you have any questions, please feel free to call me.

Sincerely,

Marge Rubin

E-Mail Invitation to Participate in the
WICareerPathways.org Program-of-Study Builder Survey

Dear Program-of-Study Builder,

I am conducting a research study as part of my Ed.D. program at Nova Southeastern University. The purpose of this study is to conduct an evaluation of the WICareerPathways.org Web site. The data that I collect will be used in my dissertation.

As a program-of-study builder on the WICareerPathways.org Web site, you have been specifically selected to participate in the online WICareerPathways.org Program-of-Study Builder Survey. The survey begins with a few multiple-choice questions to collect demographic information, a five-point Likert Scale to rate several items related to the ease of use, usefulness, and satisfaction of the WICareerPathways.org Web site, and concludes with a few open-ended questions.

The survey takes about 10-15 minutes to complete. Your identity in this study will be treated as confidential. The results of this study may be published but will not give your name or include any identifiable reference to you.

As an incentive, all participants who complete the survey will be included in a drawing for a $15 Barnes & Noble gift card. In addition, the results of the study will be available to you.

If you choose to participate, please click on this link or type into your browser to access the survey:

Survey Link: http://www.SurveyMonkey.com/s/POSBuilder

Upon completion of this research study, a copy of the findings will be maintained in my office and will also be given to the Associate Vice President-Office of Instruction at the Wisconsin Technical College System office.

I would appreciate your participation in this important study. If you have any questions, please feel free to call me.

Sincerely,

Marge Rubin

Appendix J

E-Mail Reminders to Participate in the Research Study

E-Mail Reminder to Participate
WICareerPathways.org Career-Prep Administrator Survey

Dear Career Prep Administrator,

About two weeks ago, I sent you an e-mail invitation with a link to participate in a research study as part of my Ed.D. program at Nova Southeastern University. If you have already completed the survey, thank you for participating in this research study!

If you have not completed the survey, I would greatly appreciate you taking 10-15 minutes of your time to do so now. As a valued Web site user, your input and feedback are important to me. Taking part in this survey is your opportunity to voice your opinions about your Web site experience.

Participation in this survey is completely voluntary. The data you provide will be used to develop a plan for the ongoing development and improvement of the WICareerPathways Web site. Your survey responses will be kept confidential.

As an incentive, all participants who complete the survey will be included in a drawing for a $15 Barnes & Noble gift card. In addition, the results of the study will be available to you.

Please click on this link or type the link into your browser to access the survey:

Survey Link: http://www.SurveyMonkey.com/s/CareerPrepAdmin

E-Mail Reminder to Participate
WICareerPathways.org Counselor and Adviser Survey

Dear Counselor/Advisor,

About two weeks ago, I sent you an e-mail invitation with a link to participate in a research study as part of my Ed.D. program at Nova Southeastern University. If you have already completed the survey, thank you for participating in this research study!

If you have not completed the survey, I would greatly appreciate you taking 15-20 minutes of your time to do so now. As a valued Web site user, your input and feedback are important to me. Taking part in this survey is your opportunity to voice your opinions about your Web site experience.

Participation in this survey is completely voluntary. The data you provide will be used to develop a plan for the ongoing development and improvement of the WICareerPathways Web site. Your survey responses will be kept confidential.

As an incentive, all participants who complete the survey will be included in a drawing for a $15 Barnes & Noble gift card. In addition, the results of the study will be available to you.

Please click on this link or type the link into your browser to access the survey:

Survey Link: http://www.SurveyMonkey.com/s/CounselorAdvisor

E-mail Reminder to Participate
WICareerPathways.org Program-of-Study Builder Survey

Dear Program-of-Study Builder,

About two weeks ago, I sent you an e-mail invitation with a link to participate in a research study as part of my Ed.D. program at Nova Southeastern University. If you have already completed the survey, thank you for participating in this research study!

If you have not completed the survey, I would greatly appreciate you taking 10-15 minutes of your time to do so now. As a valued Web site user, your input and feedback are important to me. Taking part in this survey is your opportunity to voice your opinions about your Web site experience.

Participation in this survey is completely voluntary. The data you provide will be used to develop a plan for the ongoing development and improvement of the WICareerPathways Web site. Your survey responses will be kept confidential.

As an incentive, all participants who complete the survey will be included in a drawing for a $15 Barnes & Noble gift card. In addition, the results of the study will be available to you.

Please click on this link or type the link into your browser to access the survey:

Survey Link: http://www.SurveyMonkey.com/s/POSBuilder

Appendix K

E-Mail Invitation to Participate in the Focus-Group Session

E-Mail Invitation to Participate in the Focus-Group Session

Dear Career Prep Administrator,

As you know from my previous email inviting you to participate in the WICareerPathways Career Prep Administrators Survey, I am conducting a research study as part of my Ed.D. program at Nova Southeastern University. The research study involves two phases. The first phase includes the administration of surveys to users of the Wisconsin Career Pathways Web site.

During the second phase, I will be conducting a follow-up focus-group session. As a career prep administrator, you are invited to participate in the session. Your identity in this study will be treated as confidential. I also ask that you keep the identity of the other focus-group participants confidential. Please review the attached Consent Form for more details about the research study and the focus-group session.

As an incentive, all individuals who participate in the focus-group session will receive a $15 Barnes & Noble gift card. In addition, the results of the study will be available to you.

If you are interested, please let me know by replying to this email by the end of the day on Thursday, August 29, 2013. The first four career prep administrators who respond will be selected to participate. They will need to sign the attached Consent Form and return to me in one of the following ways:

- Fax the signed form to me.
- Scan and send it to me as an email attachment.
- If you wish to return it to me by mail, please advise. I will provide you with a self-addressed stamped envelope.

I would appreciate your participation in the focus group, which will be held in the fall. As the time nears, I will send the participants an online scheduling poll (from www.doodle.com) to assist me in setting a convenient time and date for the focus-group session. If you have any questions, please feel free to call me.

Sincerely,

Marge Rubin

E-Mail Invitation to Participate in the Focus-Group Session

Dear Counselor or Advisor,

As you know from my previous email inviting you to participate in the WICareerPathways Program-of-Study Builders Survey, I am conducting a research study as part of my Ed.D. program at Nova Southeastern University. The research study involves two phases. The first phase includes the administration of surveys to users of the Wisconsin Career Pathways Web site.

During the second phase, I will be conducting a follow-up focus-group session. As counselor/ adviser, you are invited to participate in the session. Your identity in this study will be treated as confidential. I also ask that you keep the identity of the other focus-group participants confidential. Please review the attached Consent Form for more details about the research study and the focus-group session.

As an incentive, all individuals who participate in the focus-group session will receive a $15 Barnes & Noble gift card. In addition, the results of the study will be available to you.

If you are interested, please let me know by replying to this email by the end of the day on Thursday, September 26, 2013. The first four counselors and advisors who respond will be selected to participate. They will need to sign the attached Consent Form and return to me in one of the following ways:

- Fax the signed form to me.
- Scan and send it to me as an email attachment.
- If you wish to return it to me by mail, please advise. I will provide you with a self-addressed stamped envelope.

I would appreciate your participation in the focus group, which will be held in the fall. As the time nears, I will send the participants an online scheduling poll (from www.doodle.com) to assist me in setting a convenient time and date for the focus-group session. If you have any questions, please feel free to call me.

Sincerely,

Marge Rubin

E-Mail Invitation to Participate in the Focus-Group Session

Dear Program-of-Study Builder,

As you know from my previous email inviting you to participate in the WICareerPathways Program-of-Study Builders Survey, I am conducting a research study as part of my Ed.D. program at Nova Southeastern University. The research study involves two phases. The first phase includes the administration of surveys to users of the Wisconsin Career Pathways Web site.

During the second phase, I will be conducting a follow-up focus-group session. As a program-of-study builder, you are invited to participate in the session. Your identity in this study will be treated as confidential. I also ask that you keep the identity of the other focus-group participants confidential. Please review the attached Consent Form for more details about the research study and the focus-group session.

As an incentive, all individuals who participate in the focus-group session will receive a $15 Barnes & Noble gift card. In addition, the results of the study will be available to you.

If you are interested, please let me know by replying to this email by the end of the day on Thursday, October 3, 2013. The first four program-of-study builders who respond will be selected to participate. They will need to sign the attached Consent Form and return to me in one of the following ways:

- Fax the signed form to me.
- Scan and send it to me as an email attachment.
- If you wish to return it to me by mail, please advise. I will provide you with a self-addressed stamped envelope.

I would appreciate your participation in the focus group, which will be held in the fall. As the time nears, I will send the participants an online scheduling poll (from www.doodle.com) to assist me in setting a convenient time and date for the focus-group session. If you have any questions, please feel free to call me.

Sincerely,

Marge Rubin

Appendix L

E-Mail Invitation to Complete Online Scheduling Poll for Focus-Group Session

E-Mail Invitation to Complete Online Scheduling Poll for Focus-Group Session

Dear Focus-Group Session Participants,

You have identified yourself as an individual who is interested in participating in a follow-up focus group session. Thank you for your interest and anticipated participation!

Please use the link below to access an online meeting scheduling poll, which will assist me in setting a time and date for the focus-group session that is most convenient to participants. Please complete the scheduling poll within the next week. The focus-group session will last approximately one and a half hours.

Doodle Link: http://www.doodle.com/3qu5wgkqsg4yur6f

As an incentive, all participants in the focus-group session will receive a $15 Barnes & Noble gift card. The results of the study will be available to you.

I would appreciate your participation in the focus-group session of this important study. If you have any questions, please feel free to call me.

Thank you,

Marge Rubin

Appendix M

Response Numbers and Percentages of WICareerPathways.org
Career-Prep Administrator Survey Scaled Items

Response Numbers and Percentages of
WICareerPathways.org Career-Prep Administrator Survey
Scaled Items 1 through 9 (Usability)

	Usability Item	5 = Strongly Agree		4 = Agree		3 = Undecided		2 = Disagree		1 = Strongly Disagree	
		n	%	n	%	n	%	n	%	n	%
1.	This website is user friendly. (n = 15)	6	40.0	8	53.3	1	6.7	0	00.0	0	0.0
2.	This website is easy to navigate. (n = 15)	4	26.7	10	66.7	1	6.7	0	00.0	0	0.0
3.	It is easy to access Clusters, Pathways, College Majors/Programs and Careers on this website. (n = 15)	7	46.7	7	46.7	0	0.0	1	6.7	0	0.0
4.	It is easy to access the Program of Study Implementation Guide. (n = 15)	8	53.3	4	26.7	3	20.0	0	00.0	0	00.0
5.	It is easy to search for existing Programs of Study on this website. (n = 15)	5	40.0	7	46.7	1	6.7	1	6.7	0	00.0
6.	It is easy to add Program-of-Study Builders and Counselors/Advisors from the high schools in my district to this website. (n = 15)	11	73.3	2	13.3	1	6.7	1	6.7	0	00.0
7.	It is easy to add, remove, or edit my college's associate degree, technical diploma and apprenticeship programs on this website. (n = 15)	8	53.3	6	40.0	0	00.0	1	6.7	0	00.0
8.	It is easy to add my college's programs to Pathways on this website. (n = 15)	8	53.3	6	40.0	0	00.0	1	6.7	0	00.0
9.	If I make a mistake managing my college's programs and the high schools within my district, I recover easily and quickly. (n = 15)	7	46.7	6	40.0	2	13.3	0	00.0	0	00.0

Note: n = number and % = percentage

Response Numbers and Percentages of
WICareerPathways.org Career-Prep Administrator Survey
Scaled Items 10 through 14 (Usefulness)

Usefulness Item	5 = Strongly Agree		4 = Agree		3 = Undecided		2 = Disagree		1 = Strongly Disagree	
	n	%	n	%	n	%	n	%	n	%
10. My college's programs provide useful information for Program-of-Study builders to build a Program of Study on this website. (n = 15)	4	26.7	8	53.3	1	6.7	1	6.7	1	6.7
11. My college's programs provide useful information for middle and high schools Students to explore my college's programs on the www.WIcareerPathways/ Students website. (n = 15)	3	20.0	10	66.7	1	6.7	0	00.0	1	6.7
12. My college's programs provide useful information for middle and high school Counselors/ Advisors to assist students in developing a personal Academic Career Plan on the www.WICareer Pathways/Students website. (n = 15)	3	20.0	8	53.3	2	13.3	1	6.7	1	6.7
13. This website provides me with sufficient information to understand how Programs of Study are integrated with students' Academic Career Plans within the Career Clusters framework. (n = 15)	5	33.3	7	46.7	2	13.3	1	6.7	0	00.0
14. This website helps me connect with the high schools in my district. (n = 15)	4	26.7	6	40.0	1	6.7	4	26.7	0	00.0

Note: n = number and % = percentage

Response Numbers and Percentages of
WICareerPathways.org Career-Prep Administrator Survey
Scaled Items 15 through 24 (Satisfaction)

Satisfaction Item	5 = Strongly Agree		4 = Agree		3 = Undecided		2 = Disagree		1 = Strongly Disagree	
	n	%	n	%	n	%	n	%	n	%
15. I am satisfied with the look and feel of this website. (n = 15)	8	53.3	5	33.3	2	13.3	0	00.0	0	00.0
16. I am satisfied with the way this website is organized. (n = 15)	7	46.7	6	40.0	2	13.3	0	00.0	0	00.0
17. I am satisfied with the speed and reliability of this website. (n = 15)	6	40.0	8	53.3	0	00.0	1	6.7	0	00.0
18. I am satisfied with the technical support I receive. (n = 15)	12	80.0	3	20.0	0	00.0	0	00.0	0	00.0
19. I am satisfied with the training I received for this website. (n = 15)	7	46.7	7	46.7	0	00.0	1	6.7	0	00.0
20. I am satisfied with the training materials on this website. (n = 15)	6	40.0	8	53.3	1	6.7	0	00.0	0	00.0
21. I am satisfied with the reports on this website to manage my college's programs and the high schools within my district. (n = 15)	3	20.0	8	53.3	3	20.0	0	6.7	0	00.0
22. Overall, I am satisfied with this website. (n = 14)	7	50.0	4	28.6	3	21.4	0	00.0	0	00.0
23. I would recommend this website to counselors, teachers, administrators and students at the middle and high schools within my district. (n = 14)	9	64.3	4	28.6	1	7.1	0	00.0	0	00.0
24. This website meets my expectations. (n = 14)	5	35.7	6	42.9	0	00.0	3	21.4	0	00.0

Note: n = number and % = percentage

Appendix N

Response Numbers and Percentages of WICareerPathways.org Counselor and Adviser Survey Scaled Items

Response Numbers and Percentages of
WICareerPathways.org Counselor and Adviser Survey-
Student Web Site Scaled Items 6 through 15 (Usability)

	Usability-Student Web site Item	5 = Strongly Agree		4 = Agree		3 = Undecided		2 = Disagree		1 = Strongly Disagree	
		n	%	n	%	n	%	n	%	n	%
6.	The Student website is user friendly. (n = 68)	15	22.1	41	60.3	6	8.8	6	8.8	0	0.0
7.	The Student website is easy to navigate. (n = 67)	11	16.4	43	64.2	6	9.0	6	9.0	1	1.5
8.	It is easy for students to set up an account on the Student website. (n = 68)	18	26.5	36	52.9	7	10.3	5	7.4	2	2.9
9.	It is easy for students to take the Career Cluster Interest Inventory on the Student website. (n = 68	19	27.9	38	55.9	6	8.8	5	7.4	0	0.0
10.	It is easy for students to explore Clusters, Pathways, Careers, High School Programs of Study, and College Majors/Programs based on their Career Clusters Interest Inventory. (n = 66)	13	19.7	36	54.5	15	22.7	1	1.5	1	1.5
11.	It is easy for students to add Pathways and Careers to MiLocker. (n = 67)	10	14.9	31	46.3	22	32.8	4	6.0	0	0.0
12.	It is easy for students to convert a Program of Study to an Academic Career Plan. (n = 67)	4	6.0	26	38.8	31	46.3	6	9.0	0	0.0
13.	It is easy for students to personalize their Academic Career Plan on the Student website. (n = 63)	8	12.7	33	52.4	20	31.7	2	3.2	0	0.0
14.	It is easy for students to add photos, documents, and links to their MiLocker on the Student website. (n = 64)	5	7.8	26	40.6	30	46.9	3	4.7	0	0.0
15.	It is easy for students	4	6.3	25	39.7	29	46.0	4	6.3	1	1.6

to change their high school on the Student website. (n = 63)		

Note: n = number and % = percentage

Response Numbers and Percentages of
WICareerPathways.org Counselor and Adviser Survey-
Student Website Scaled Items 16 through 20 (Usefulness)

Usefulness-Student Web site Item	5 = Strongly Agree		4 = Agree		3 = Undecided		2 = Disagree		1 = Strongly Disagree	
	n	%	n	%	n	%	n	%	n	%
16. The Student website provides useful information to guide my students in college and careers. (*n* = 62)	20	32.3	32	51.9	8	12.9	2	3.2	0	0.0
17. The Student website provides me with sufficient information to understand how Programs of Study are integrated with students' Academic Career Plans within the Career Clusters framework. (*n* = 62)	14	22.6	32	51.6	12	19.4	3	4.8	1	1.6
18. My high school's Program(s) of Study provides useful information for students to develop a personal Academic Career Plan on the Student website. (*n* = 60)	8	13.3	25	41.7	18	30.0	7	11.7	2	3.3
19. The Student website provides useful information to guide my students in the development of an Academic Career Plan. (*n* = 60)	11	18.3	32	53.3	14	23.3	3	5.0	0	0.0
20. The Student website provides useful information to share during student/parent conferences. (*n* = 60)	13	21.7	26	43.3	16	26.7	3	5.0	2	3.3

Note: n = number and % = percentage

Response Numbers and Percentages of
WICareerPathways.org Counselor and Adviser Survey-
Student Website Scaled Items 21 through 27 (Satisfaction)

Satisfaction-Student Web site Item	5 = Strongly Agree		4 = Agree		3 = Undecided		2 = Disagree		1 = Strongly Disagree	
	n	%	n	%	n	%	n	%	n	%
21. I am satisfied with the way the Student website is organized. (*n* = 59)	13	22.0	27	45.8	12	20.3	4	6.8	3	5.1
22. I am satisfied with the speed and reliability of the Student website. (*n* = 58)	13	22.4	30	51.7	12	20.7	2	3.4	1	1.7
23. I am satisfied with the technical support I receive when guiding students on the Student Website. (*n* = 59)	7	11.9	16	27.1	34	57.6	2	3.4	0	0.0
24. I am satisfied with the training I received for the Student website. (*n* = 59)	11	18.6	26	44.1	15	25.4	6	10.2	1	1.7
25. I am satisfied with the training materials for the Student website. (*n* = 59)	8	13.6	25	42.4	22	37.3	4	6.8	0	0.0
26. Overall, I am satisfied with the Student website. (*n* = 59)	13	22.0	31	52.5	9	15.3	4	6.8	2	3.4
27. The Student website meets my expectations. (*n* = 59)	15	25.4	26	44.1	12	20.3	4	6.8	2	3.4

Note: n = number and % = percentage

Response Numbers and Percentages of
WICareerPathways.org Counselor and Adviser Survey-
Counselor Components Scaled Items 28 through 33 (Usability)

Usability-Counselor Components Item	5 = Strongly Agree		4 = Agree		3 = Undecided		2 = Disagree		1 = Strongly Disagree	
	n	%	n	%	n	%	n	%	n	%
28. The Counselor/ Advisor site is user friendly. (*n* = 58)	9	15.5	31	53.4	16	27.6	1	1.7	1	1.7
29. The Counselor/ Advisor site is easy to navigate. (*n* = 57)	10	17.5	31	54.4	13	22.8	2	3.5	1	1.8
30. I can easily view school-wide data on the Counselor/Advisor site. (*n* = 57)	8	14.0	28	49.1	19	33.3	1	1.8	1	1.8
31. I can easily access student data on the Counselor/Advisor site. (*n* = 59)	7	11.9	25	42.4	25	42.4	2	3.4	0	0.0
32. I can easily create a student group on the Counselor / Advisor site. (*n* = 59)	6	10.2	15	25.4	35	59.3	2	3.4	1	1.7
33. I can easily view my students' profiles and Academic Career Plans on the Counselor/Advisor site. (*n* = 58)	8	13.8	22	37.9	26	44.8	1	1.7	1	1.7

Note: n = number and % = percentage

Response Numbers and Percentages of
WICareerPathways.org Counselor and Adviser Survey-
Counselor Components Scaled Items (Usefulness)
34 through 36

	Usefulness-Counselor Components Item	5 = Strongly Agree		4 = Agree		3 = Undecided		2 = Disagree		1 = Strongly Disagree	
		n	%	n	%	n	%	n	%	n	%
34.	The Counselor/ Advisor site provides useful information to guide my students in the development of an Academic Career Plan. (*n* = 59)	6	10.2	31	52.5	21	35.6	0	0.0	1	1.7
35.	The Counselor/ Advisor site provides useful information to learn about the student population's interests. (*n* = 58)	7	12.1	27	46.6	22	37.9	1	1.7	1	1.7
36.	Setting up a student group on the Counselor/Advisor site is useful. (*n* = 57)	2	3.5	17	29.8	36	63.2	1	1.8	1	1.8

Note: n = number and % = percentage

Response Numbers and Percentages of
WICareerPathways.org Counselor and Adviser Survey-
Counselor Components Scaled Items 37 through 45 (Satisfaction)

Satisfaction-Counselor Components Item	5 = Strongly Agree		4 = Agree		3 = Undecided		2 = Disagree		1 = Strongly Disagree	
	n	%	n	%	n	%	n	%	n	%
37. I am satisfied with the look and feel of the Counselor/Advisor site. (*n* = 56)	12	21.4	24	42.9	15	26.8	3	5.4	2	3.6
38. I am satisfied with the way the Counselor/ Advisor site is organized. (*n* = 54)	10	18.5	21	38.9	18	33.3	3	5.6	2	3.7
39. I am satisfied with the speed and reliability of the Counselor/ Advisor site. (*n* = 54)	11	20.4	24	44.4	17	31.5	1	1.9	1	1.9
40. I am satisfied with the technical support I receive when I am using the Counselor/ Advisor site. (*n* = 55)	7	12.7	19	34.5	29	52.7	0	0.0	0	0.0
41. I am satisfied with the training I received for the Counselor/Advisor site. (*n* = 53)	9	17.0	20	37.7	15	28.3	8	15.1	1	1.9
42. I am satisfied with the training materials for the Counselor/Advisor site. (*n* = 53)	6	11.3	18	34.0	20	37.7	8	15.1	1	1.9
43. Overall, I am satisfied with the Counselor/ Advisor site. (*n* = 53)	8	15.1	24	45.3	16	30.2	3	5.7	2	3.8
44. I would recommend this website to a school counselor or advisor (*n* = 53)	16	30.2	23	43.4	10	18.9	1	1.9	3	5.7
45. The Counselor/ Advisor site meets my expectations. (*n* = 53)	7	13.2	27	50.9	14	26.4	2	3.8	3	5.7

Note: n = number and % = percentage

Appendix O

Response Numbers and Percentages of WICareerPathways.org Program-of-Study Builder Survey Scaled Items

Response Numbers and Percentages of WICareerPathways.org
Program-of-Study Builder Survey Scaled Items 6 through 14 (Usability)

	Usability Item	5 = Strongly Agree		4 = Agree		3 = Undecided		2 = Disagree		1 = Strongly Disagree	
		n	%	n	%	n	%	n	%	n	%
6.	This website is user friendly. (*n* = 88)	17	19.3	59	67.0	5	5.7	6	6.8	1	1.1
7.	This website is easy to navigate. (*n* = 88)	14	15.9	59	67.0	9	10.2	5	5.7	1	1.1
8.	It is easy to access Clusters, Pathways, College Majors/ Programs and Careers on this website. (*n* = 88)	19	21.6	56	63.6	11	12.5	1	1.1	1	1.1
9.	It is easy to access the Program of Study Implementation Guide. (*n* = 84)	10	11.9	57	67.9	15	17.9	2	2.4	0	0.0
10.	It is easy to search for existing Programs of Study on this website. (*n* = 84)	14	16.7	59	70.2	9	10.7	2	2.4	0	0.0
11.	It is easy to build a Program of Study on this website. (*n* = 84)	12	14.3	47	56.0	21	25.0	3	3.6	1	1.2
12.	I easily learned to build a Program of Study on this website. (*n* = 80)	16	20.0	40	50.0	19	23.8	5	6.3	0	0.0
13.	The instructions and prompts to build a Program of Study are helpful. (*n* = 79)	13	16.5	48	60.8	16	20.3	2	2.5	0	0.0
14.	If I make a mistake building a program of Study, I recover easily and quickly. (*n* = 80)	14	17.5	36	45.0	24	30.0	6	7.5	0	0.0

Note: n = number and % = percentage

Response Numbers and Percentages of WICareerPathways.org
Program-of-Study Builder Survey Scaled Items 15 through 17 (Usefulness)

Usefulness Item	5 = Strongly Agree		4 = Agree		3 = Undecided		2 = Disagree		1 = Strongly Disagree	
	n	%	n	%	n	%	n	%	n	%
15. This website provides me with sufficient information to understand how Programs of Study are integrated with students' Academic Career Plans within the Career Clusters framework. (*n* = 83)	6	.72	49	59.0	24	28.9	4	4.8	0	0.0
16. My published Program(s) of Study provides useful information for students at my high school to develop a personal plan of study on the Student site. (*n* = 83)	8	9.6	42	50.6	29	34.9	4	4.8	0	0.0
17. My published Program(s) of Study provides useful information for counselors at my school to assist students in developing a personal Academic Career Plan on the Student site. (*n* = 83)	6	7.2	46	55.4	27	32.5	4	4.8	0	0.0

Note: n = number and % = percentage

Response Numbers and Percentages of WICareerPathways.org
Program-of-Study Builder Survey Scaled Items 18 through 27 (Satisfaction)

Satisfaction Item	5 = Strongly Agree		4 = Agree		3 = Undecided		2 = Disagree		1 = Strongly Disagree	
	n	%	n	%	n	%	n	%	n	%
18. I am satisfied with the look and feel of this website. (*n* = 82)	10	12.2	55	67.1	13	15.9	4	4.9	0	0.0
19. I am satisfied with the way this website is organized. (*n* = 83)	12	14.5	55	66.3	11	13.3	3	3.6	2	2.4
20. I am satisfied with the speed and reliability of this website. (*n* = 82)	15	18.3	51	62.2	15	18.3	1	1.2	0	0.0
21. I am satisfied with the technical support I receive. (*n* = 83)	10	12.0	37	44.6	32	38.6	4	4.8	0	0.0
22. I am satisfied with the training I received for this website. (*n* = 83)	14	16.9	38	45.8	20	24.1	8	9.6	3	3.6
23. I am satisfied with the training materials on this website. (*n* = 83)	11	13.3	41	49.4	28	33.7	3	3.6	0	0.0
24. I am satisfied with the Program-of-Study Builder tool. (*n* = 83)	9	10.8	44	53.0	24	28.9	6	7.2	0	0.0
25. Overall, I am satisfied with this website. (*n* = 81)	13	16.0	52	64.2	13	16.0	3	3.7	0	0.0
26. I would recommend this website to a Program-of-Study Builder. (*n* = 82)	17	20.7	43	52.4	17	20.7	5	6.1	0	0.0
27. This website meets my expectations. (*n* = 82)	13	15.9	51	62.2	13	15.9	5	6.1	0	0.0

Note: n = number and % = percentage

Appendix P

Descriptive Analysis of WICareerPathways.org Career-Prep Administrator Survey Scaled Items

Descriptive Analysis of WICareerPathways.org
Career-Prep Administrator Survey Scaled Items by Section

Item	Min.	Max.	Mean	SD
Usability				
1. This website is user friendly. (n = 15)	3	5	4.33	.62
2. This website is easy to navigate. (n = 15)	3	5	4.20	.56
3. It is easy to access Clusters, Pathways, College Majors/Programs and Careers on this website. (n = 15)	2	5	4.33	.82
4. It is easy to access the Program of Study Implementation Guide. (n = 15)	3	5	4.33	.82
5. It is easy to search for existing Programs of Study on this website. (n = 15)	2	5	4.20	.86
6. It is easy to add Program-of-Study Builders and Counselors/Advisors from the high schools in my district to this website. (n = 15)	2	5	4.53	.92
7. It is easy to add, remove, or edit my college's associate degree, technical diploma and apprenticeship programs on this website. (n = 15)	2	5	4.40	.83
8. It is easy to add my college's programs to Pathways on this website. (n = 15)	2	5	4.40	.83
9. If I make a mistake managing my college's programs and the high schools within my district, I recover easily and quickly. (n = 15)	3	5	4.33	.72
Usefulness				
10. My college's programs provide useful information for Program-of-Study builders to build a Program of Study on this website. (n = 15)	1	5	3.87	1.13
11. My college's programs provide useful information for middle and high schools Students to explore my college's programs on the www.WIcareerPathways/ Students website. (n = 15)	1	5	3.93	.96
12. My college's programs provide useful information for middle and high school Counselors/Advisors to assist students in developing a personal Academic Career Plan on the www.WICareer Pathways/Students website. (n = 15)	1	5	3.73	1.10
13. This website provides me with sufficient information to understand how Programs of Study are integrated with students' Academic Career Plans within the Career Clusters framework. (n = 15)	2	5	4.07	.88
14. This website helps me connect with the high schools in my district. (n = 15)	2	5	3.67	1.18
Satisfaction				
15. I am satisfied with the look and feel of this website. (n = 15)	3	5	4.40	.74
16. I am satisfied with the way this website is organized. (n = 15)	3	5	4.33	.72
17. I am satisfied with the speed and reliability of this website. (n = 15)	2	5	4.27	.80
18. I am satisfied with the technical support I receive. (n = 15)	4	5	4.80	.41
19. I am satisfied with the training I received for this website. (n = 15)	2	5	4.33	.82
20. I am satisfied with the training materials on this website. (n = 15)	3	5	4.33	.62
21. I am satisfied with the reports on this website to manage my college's programs and the high schools within my district. (n = 15)	2	5	3.87	.83
22. Overall, I am satisfied with this website. (n = 14)	3	5	4.29	.83
23. I would recommend this website to counselors, teachers, administrators and students at the middle and high schools within my district. (n = 14)	3	5	4.57	.65

24. This website meets my expectations. (n = 14)	2	5	3.93	1.14

Note: n = number and % = percentage

Appendix Q

Descriptive Analysis of WICareerPathways.org
Counselor and Adviser Survey Scaled Items

Descriptive Analysis of WICareerPathways.org
Counselor and Adviser Survey-Student Web Site Scaled Items

Student Web Site Item	Min.	Max.	Mean	SD
Usability				
6. The Student website is user friendly. (n = 68)	2	5	3.96	.82
7. The Student website is easy to navigate. (n = 67)	1	5	3.85	.86
8. It is easy for students to set up an account on the Student website. (n = 68)	1	5	3.93	.97
9. It is easy for students to take the Career Cluster Interest Inventory on the Student website. (n = 68)	2	5	4.04	.82
10. It is easy for students to explore Clusters, Pathways, Careers, High School Programs of Study, and College Majors/Programs based on their Career Clusters Interest Inventory. (n = 66)	1	5	3.89	.79
11. It is easy for students to add Pathways and Careers to MiLocker. (n = 67)	2	5	3.70	.80
12. It is easy for students to convert a Program of Study to an Academic Career Plan. (n = 67)	2	5	3.42	.74
13. It is easy for students to personalize their Academic Career Plan on the Student website. (n = 63)	2	5	3.75	.72
14. It is easy for students to add photos, documents, and links to their MiLocker on the Student website. (n = 64)	2	5	3.52	.71
15. It is easy for students to change their high school on the Student website. (n = 63)	1	5	3.43	.78
Usefulness				
16. This Student website provides useful information to guide my students in college and careers. (n = 62)	2	5	4.13	.76
17. The Student website provides me with sufficient information to understand how Programs of Study are integrated with students' Academic Career Plans within the Career Clusters framework. (n = 62)	1	5	3.89	.87
18. My high school's Program(s) of Study provides useful information for students to develop a personal Academic Career Plan on the Student website. (n = 60)	1	5	3.50	.98
19. The Student website provides useful information to guide my students in the development of an Academic Career Plan. (n = 60)	2	5	3.85	.78
20. The Student website provides useful information to share during student/parent conferences. (n = 60)	1	5	3.75	.97
Satisfaction				
21. I am satisfied with the way the Student website is organized. (n = 59)	1	5	3.73	1.05
22. I am satisfied with the speed and reliability of the Student website. (n = 58)	1	5	3.90	.85
23. I am satisfied with the technical support I receive when guiding students on the Student Website. (n = 59)	2	5	3.47	.75
24. I am satisfied with the training I received for the Student website. (n = 59)	1	5	3.68	.96
25. I am satisfied with the training materials for the Student website. (n = 59)	2	5	3.63	.81
26. Overall, I am satisfied with the Student website. (n = 59)	1	5	3.83	.97
27. The Student website meets my expectations.	1	5	3.81	1.01

Descriptive Analysis of WICareerPathways.org
Counselor and Adviser Survey-Counselor Components Scaled Items

Counselor Components Item	Min.	Max.	Mean	SD
Usability				
28. The Counselor/Advisor site is user friendly. (n = 58)	1	5	3.79	.79
29. The Student website is easy to navigate. (n = 57)	1	5	3.82	.83
30. It is easy for students to set up an account on the Student website. (n = 57)	1	5	3.72	.80
31. It is easy for students to take the Career Cluster Interest Inventory on the Student website. (n = 59)	2	5	3.63	.74
32. It is easy for students to explore Clusters, Pathways, Careers, High School Programs of Study, and College Majors/Programs based on their Career Clusters Interest Inventory. (n = 59)	1	5	3.39	.79
33. It is easy for students to add Pathways and Careers to MiLocker. (n = 58)	1	5	3.60	.82
Usefulness				
34. The Counselor/Advisor site provides useful information to guide my students in the development of an Academic Career Plan. (n = 59)	1	5	3.69	.73
35. The Counselor/ Advisor site provides useful information to learn about the student population's interests. (n = 58)	1	5	3.66	.79
36. Setting up a student group on the Counselor/Advisor site is useful. (n = 57)	1	5	3.32	.66
Satisfaction				
37. I am satisfied with the look and feel of the Counselor/Advisor site. (n = 56)	1	5	3.73	.98
38. I am satisfied with the way the Counselor/Advisor site is organized. (n = 54)	1	5	3.63	.98
39. I am satisfied with the speed and reliability of the Counselor/Advisor site. (n = 54)	1	5	3.80	.86
40. I am satisfied with the technical support I receive when I am using the Counselor/ Advisor site. (n = 55)	3	5	3.60	.71
41. I am satisfied with the training I received for the Counselor/Advisor site. (n = 53)	1	5	3.53	1.01
42. I am satisfied with the training materials for the Counselor/Advisor site. (n = 53)	1	5	3.38	.95
43. Overall, I am satisfied with the Counselor/Advisor site. (n = 53)	1	5	3.62	.95
44. I would recommend this website to a school counselor or advisor. (n = 53)	1	5	3.91	1.04
45. The Counselor/ Advisor site meets my expectations. (n = 53)	1	5	3.62	.97

Appendix R

Descriptive Analysis of WICareerPathways.org
Program-of-Study Builder Survey Scaled Items

Descriptive Analysis of WICareerPathways.org
Program-of-Study Builder Survey Scaled Items

Item	Min.	Max.	Mean	SD
Usability				
6. This website is user friendly. (n = 88)	1	5	3.97	.79
7. This website is easy to navigate. (n = 88)	1	5	3.91	.77
8. It is easy to access Clusters, Pathways, College Majors/Programs and Careers on this website. (n = 88)	1	5	4.03	.70
9. It is easy to access the Program of Study Implementation Guide. (n = 84)	2	5	3.89	.62
10. It is easy to search for existing Programs of Study on this website. (n = 84)	2	5	4.01	.61
11. It is easy to build a Program of Study on this website. (n = 84)	1	5	3.79	.78
12. I easily learned to build a Program of Study on this website. (n = 80)	2	5	3.84	.82
13. The instructions and prompts to build a Program of Study are helpful. (n = 79)	2	5	3.91	.68
14. If I make a mistake building a program of Study, I recover easily and quickly. (n = 80)	2	5	3.72	.84
Usefulness				
15. This website provides me with sufficient information to understand how Programs of Study are integrated with students' Academic Career Plans within the Career Clusters framework. (n = 83)	2	5	3.69	.68
16. My published Program(s) of Study provides useful information for students at my high school to develop a personal plan of study on the Student site. (n = 83)	2	5	3.65	.72
17. My published Program(s) of Study provides useful information for counselors at my school to assist students in developing a personal Academic Career Plan on the Student site. (n = 83)	2	5	3.65	.69
Satisfaction				
18. I am satisfied with the look and feel of this website. (n = 82)	2	5	3.87	.68
19. I am satisfied with the way this website is organized. (n = 83)	1	5	3.87	.79
20. I am satisfied with the speed and reliability of this website. (n = 82)	2	5	3.98	.65
21. I am satisfied with the technical support I receive. (n = 83)	2	5	3.64	.76
22. I am satisfied with the training I received for this website. (n = 83)	1	5	3.63	1.00
23. I am satisfied with the training materials on this website. (n = 83)	2	5	3.72	.74
24. I am satisfied with the Program-of-Study Builder tool. (n = 83)	2	5	3.67	.77
25. Overall, I am satisfied with this website. (n = 81)	2	5	3.93	.69
26. I would recommend this website to a Program-of-Study Builder. (n = 82)	2	5	3.88	.81
27. This website meets my expectations. (n = 82)	2	5	3.88	.74

Appendix S

Internal Reliability Results of Survey Instruments

Internal Reliability Results of Survey Instruments

Internal Reliability of Career-Prep Administrator Survey

Section	Number	Cronbach's Alpha
Usability items 1 through 9	9	.835
Usefulness items 10 through 14	5	.856
Satisfaction items 15 through 24	10	.912

Internal Reliability of Counselor and Adviser Survey – Student Web Site

Section	Number	Cronbach's Alpha
Usability items 6 through 15	10	.898
Usefulness items 16 through 20	5	.879
Satisfaction items 21 through 27	7	.920

Internal Reliability of Counselor and Adviser Survey – Counselor Components

Section	Number	Cronbach's Alpha
Usability items 28 through 33	6	.920
Usefulness items 34 through 36	3	.854
Satisfaction items 37 through 45	9	.965

Internal Reliability of Program-of-Study Builder Survey

Section	Number	Cronbach's Alpha
Usability items 6 through 14	9	.899
Usefulness items 15 through 17	3	.785
Satisfaction items 18 through 27	10	.938

Appendix T

Demographic Profile of WICareerPathways.org Counselor and Adviser Survey Respondents

Demographic Profile of WICareerPathways.org
Counselor and Adviser Survey Respondents

Distribution of Respondents by Role at High School

Role at High School (Question 1)	Number	Percentage
Counselor	52	74.3
Teacher	9	12.9
Other	9	12.9

Note. The 9 respondents who selected Other answered as follows: middle school counselor; MS counselor; career and college advisor; associate principal; career services director & scholarship coordinator; district curriculum administrator; CTE program leader; I'm at the middle school; CTE coordinator.

Distribution of Respondents by Type of High School

Type of High School (Question 2)	Number	Percentage
Rural	42	59.2
Suburban	17	23.9
Urban	11	15.5
Other	1	1.4

Note. The one respondent who selected Other answered as follows: town of 9,000.

Distribution of Respondents by Gender

Gender (Question 3)	Number	Percentage
Male	15	21.1
Female	56	78.9

Distribution of Respondents by Age Group

Age Group (Question 4)	Number	Percentage
20-35	19	26.8
36-50	30	42.3
51 plus	22	31.0

Distribution of Respondents by Learning about this Web Site

Learning about this Web Site (Question 5)	Number	Percentage
Local technical college Career Prep Coordinator	43	55.8
Middle school colleagues	6	7.8
High school colleagues	15	19.5
Website training or presentation	8	10.4
Other	5	6.5

Note. The 5 respondents who selected Other answered as follows: CESA 8 employee; N/A; district CTE coordinator; sales rep; CESA 10 workshop (CTE and Carl Perkins funding)

Appendix U

Demographic Profile of WICareerPathways.org
Program-of-Study Builder Survey Respondents

Demographic Profile of WICareerPathways.org
Program-of-Study Builder Survey Respondents

Distribution of Respondents by Role at High School

Role at High School (Question 1)	Number	Percentage
Teacher	48	54.5
Career & Technical Education Coordinator	10	11.4
Counselor	20	22.7
Curriculum Specialist	0	0.0
Principal	3	3.4
Other	7	8.0

Note. The 7 respondents who selected Other answered as follows: youth apprenticeship coordinator; retired CTE teacher, trainer, acting director NAF-CTE Academies, Perkins grant writer; FCS teacher and STW coordinator; CTE coordinator and BMIT teacher; CTE coordinator and teacher; guidance secretary; LVEC

Distribution of Respondents by Type of High School

Type of High School (Question 2)	Number	Percentage
Rural	58	65.2
Suburban	21	23.6
Urban	9	10.1
Other	1	1.1

Note. One respondent selected Other as follows: city the size of 12,700 people.

Distribution of Respondents by Gender

Gender (Question 3)	Number	Percentage
Male	31	35.2
Female	57	64.8

Distribution of Respondents by Age Group

Age Group (Question 4)	Number	Percentage
20-35	23	26.1
36-50	37	42.0
51 plus	28	31.8

Distribution of Respondents by Learning about this Web Site

Learning about this Web Site (Question 5)	Number	Percentage
Local technical college Career Prep Coordinator	34	35.8
High school colleagues	21	22.1
Website training or presentation	28	29.5
Other	12	12.6

Note. The 12 respondents who selected Other answered as follows: WKCE Conference; high school CTE coordinator; attending a conference; CESA 10; Perkins team leader meetings; was sent to me; part of work group; conversation with the authors during development; served on website team; CESA-10 as Carl Perkins team leader; google search, while working on pathways; DPI-CTE conference.

Appendix V

Recommendations From the Preliminary Plan

Preliminary Plan Recommendations for Ongoing Development and Improvement of the WICareerPathways Web Site

Based on the quantitative and qualitative data analysis, this researcher made the following recommendations in priority order:

1. Improve the program-of-study builder tool. Make it easier and quicker for program-of-study builders to edit, update, and copy existing programs of study.

2. Provide more training to program-of-study builders and counselors/advisors. Provide specific training on use of the website to build programs of study. Incorporate program-of-study implementation in the training, broaden the audience to include administrators and seek ways to make the training accessible and convenient. Develop training materials that include program-of-study implementation. Provide specific training on the use of the student website and counselor components. Develop training materials that include the career development process and academic and career planning. Establish programs of study as the foundation for student academic career plans, and train users on the website's conversion of a program of study to a student's academic career plan.

3. Create reports for career prep administrators relating to usage and specific data requests. This would assist career-prep administrators in connecting with high schools in their district.

4. Provide information related to academic and career planning on the website.

5. Develop a marketing plan to increase awareness and promote the website to school districts and students.

6. Improve the Career Cluster Interest Survey. Add more assessments.

7. Maintain accessibility related to clusters, pathways, college majors/programs,

careers, and programs of study. Add information relating to careers and job data. Provide direct links to majors offered by the University of Wisconsin and Wisconsin private colleges. Develop connections to out-of-state colleges and universities.

8. Develop connections with other career development websites, specifically WISCareers.

9. Improve performance (speed and reliability) of the website to meet career prep administrators' satisfaction.

10. Maintain the website's look and feel and user-friendliness, but improve navigation to meet user expectations.

11. Improve the technical support offered on the website to meet the expectations of program-of-study builders and counselors/advisors.

12. Promote the new portal to businesses to help students learn about area businesses.

13. Maintain the manner in which career prep administrators add high school program-of-study builders and counselor/advisors, add their college programs to pathways, and add, remove or edit their college's associate degree, technical diploma and apprenticeship programs on this website.

14. Maintain school-wide data featured on the counselor/advisor site.