AN ABSTRACT OF THE DISSERTATION OF

Ann M. Malosh for the degree of Doctor of Philosophy in Education presented November 14, 2012
Title: The Involvement of Career and Technical Education Advisory Committees in Modularizing Curriculum

Abstract approved:

Sam Stern

The emergence of modularized curriculum in community college career and technical education (CTE) programs has received substantial attention over the last decade, with researchers suggesting that this type of curriculum redesign may assist with student retention and success. The purpose of this study was to describe advisory committee member involvement in modularizing CTE programs. This study was undertaken for three reasons: (a) to address the limited research on the topic of advisory committee involvement in modularizing curriculum; (b) to respond to the increased momentum to expand working lifetime opportunities, in which modularization may play an integral part; and (c) to explore the suggestion that employers must take a leadership role in shaping the workforce and that this may be done effectively through work on an advisory committee.

The research was designed as a quantitative descriptive study using survey methodology. The study focused on community college CTE advisory committee members in Oregon and Wisconsin who were identified as being engaged in developing
career pathways. The primary research question asked respondents to describe their involvement in modularizing curriculum, and the secondary question asked them to specify the degree to which their involvement had occurred in the various aspects of modularizing curriculum.

The key findings of this descriptive study suggest that responding CTE advisory committee members in Oregon and Wisconsin are aware of the concept of curriculum modularization but have little involvement in the actual process of breaking down associate degree programs into smaller certificates. This study also shows that these same advisory committee members endorse more than they assist with developing the various aspects of modularizing curriculum, such as defining skills sets for various jobs, developing courses for appropriate content, reordering courses in an existing program, adding or deleting courses, and developing measureable outcomes.

Implications for practice from this study are: 1) provide more information and training to advisory committee members involved in modularizing curriculum in order to increase their level of understanding and thus strengthen their ability to participate effectively in reviewing and endorsing work already done by faculty, 2) provide advisory committee members with complete and detailed instructions regarding their work on the committee, and 3) develop a mandatory advisory committee orientation for all members to provide the needed information and training.
The Involvement of Career and Technical Education Advisory Committees in Modularizing Curriculum

by
Ann M. Malosh

A DISSERTATION
Submitted to
Oregon State University
in partial fulfillment of the requirements for the degree of
Doctor of Philosophy

Presented November 14, 2012
Commencement June 2013

APPROVED:

__________________________
Major Professor, representing Education

__________________________
Dean of the College of Education

__________________________
Dean of the Graduate School

I understand that my dissertation will become part of the permanent collection of Oregon State University libraries. My signature below authorizes release of my dissertation to any reader upon request.

__________________________
Ann M. Malosh, Author
ACKNOWLEDGEMENTS

I am sincerely and heartily grateful to the women in my life, for the support and guidance they showed me throughout my graduate studies and dissertation writing.

Success would not have been possible without you.

A special thanks to my daughter, Justene. You ROCK!
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Chapter 1: Introduction</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Focus of Study</td>
<td>2</td>
</tr>
<tr>
<td>Significance of Study</td>
<td>3</td>
</tr>
<tr>
<td>Definition of Key Terms</td>
<td>6</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Chapter 2: Literature Review</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Involvement of Career and Technical Education Advisory Committees</td>
<td>9</td>
</tr>
<tr>
<td>Employer Involvement in the Career Pathways Initiatives</td>
<td>20</td>
</tr>
<tr>
<td>Summary of Related Literature</td>
<td>32</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Chapter 3: Research Methodology</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Research Design</td>
<td>33</td>
</tr>
<tr>
<td>Participants and State Selection</td>
<td>36</td>
</tr>
<tr>
<td>Survey Instrument Design and Development</td>
<td>37</td>
</tr>
<tr>
<td>Data Collection</td>
<td>39</td>
</tr>
<tr>
<td>Strategies for the Protection of Human Subjects</td>
<td>40</td>
</tr>
<tr>
<td>Data Analysis Procedures</td>
<td>40</td>
</tr>
<tr>
<td>Limitations of the Study</td>
<td>40</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Chapter 4: Results</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Identification of Participants</td>
<td>43</td>
</tr>
<tr>
<td>Demographic Data</td>
<td>46</td>
</tr>
</tbody>
</table>
TABLE OF CONTENTS (Continued)

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Awareness, Training, and Communication</td>
<td>48</td>
</tr>
<tr>
<td>Developed and/or Endorsed</td>
<td>53</td>
</tr>
<tr>
<td>Chapter 5: Discussion and Conclusions</td>
<td>60</td>
</tr>
<tr>
<td>Lack of Involvement</td>
<td>61</td>
</tr>
<tr>
<td>Awareness Without Information or Training</td>
<td>64</td>
</tr>
<tr>
<td>Endorsing More Than Assisting</td>
<td>67</td>
</tr>
<tr>
<td>Broader Employer Input</td>
<td>71</td>
</tr>
<tr>
<td>Does Modularized Curriculum Offer Value to Students?</td>
<td>75</td>
</tr>
<tr>
<td>Should Advisory Committee Members be Involved in Modularizing Curriculum?</td>
<td>77</td>
</tr>
<tr>
<td>Recommendations for Further Study</td>
<td>79</td>
</tr>
<tr>
<td>References</td>
<td>83</td>
</tr>
<tr>
<td>Appendices</td>
<td>89</td>
</tr>
<tr>
<td>Appendix A. Survey</td>
<td>89</td>
</tr>
<tr>
<td>Appendix B. Letter to State Leads</td>
<td>92</td>
</tr>
<tr>
<td>Appendix C. Letter to Wisconsin</td>
<td>93</td>
</tr>
<tr>
<td>Appendix D. IRB Form (Moraine Park Technical College)</td>
<td>95</td>
</tr>
</tbody>
</table>
# LIST OF FIGURES

<table>
<thead>
<tr>
<th>Figure</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Occupational Area Representation of Survey Participants</td>
<td>46</td>
</tr>
<tr>
<td>2. Sector Representation</td>
<td>47</td>
</tr>
<tr>
<td>3. Years Serving as Members of Current Advisory Committee</td>
<td>48</td>
</tr>
</tbody>
</table>
# LIST OF TABLES

<table>
<thead>
<tr>
<th>Table</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Awareness, Training and Communication</td>
<td>50</td>
</tr>
<tr>
<td>2. Involvement in Defining Skill Sets for Various Jobs</td>
<td>54</td>
</tr>
<tr>
<td>3. Involvement in Developing Courses for Appropriate Content</td>
<td>55</td>
</tr>
<tr>
<td>4. Involvement in Reordering Courses in a Program</td>
<td>56</td>
</tr>
<tr>
<td>5. Involvement in Adding or Deleting a Course or Courses in a Program</td>
<td>57</td>
</tr>
<tr>
<td>6. Involvement in Measurable Outcomes Assessed/Certified After Each Module</td>
<td>58</td>
</tr>
<tr>
<td>7. Does Modularizing Curriculum Offer Value to Students?</td>
<td>59</td>
</tr>
</tbody>
</table>
Chapter 1: Introduction

The emergence of modularized curriculum in career and technical education programs in community colleges has received substantial attention over the last decade (Boggs, 2010; Bragg & Mills, 2005; Hess, 2006; Hughes & Karp, 2006; Jenkins, 2003). Many researchers have suggested that this new curriculum design may assist with student retention and student success by providing shorter education timeframes for skill and goal attainment (Dins, 2005; Hull, 2005; Jacobs & Warford, 2006; Stephens, 2009).

Modularizing curriculum involves segmenting whole areas of educational qualifications, such as associate degrees, into industry-supported sub-units (modules), each of which has measurable outcomes and leads to specific jobs. Given that curriculum modules do not already exist, the coursework content, program flow, and program length must be created. Each module’s content depends on the particular industry targeted, the skill requirements, the existing program design, the available resources to support change, and the current employee advancement system (Jenkins, 2005). These postsecondary certificates made up one million or 22% of awarded credentials in 2010; in comparison, in 1980, postsecondary certificates made up only 6% or 100,000 of awarded credentials (Carnevale, Hanson, & Rose, 2012).

In creating curriculum modules, guidance from employers is thought to be critical, as the outcomes of each completed module center largely on the skills needed for employment in a specific area of industry. Much of the best practices information and how-to guides regarding modularizing curriculum state that employer involvement offers
valuable information regarding ways to modularize curricula for student retention and completion, as well as successful employment (Stephens, 2009).

In community colleges, employers offering input for curriculum changes are often represented in advisory committees. The Vocational Education Act of 1963 formally designated an advisory committee’s purpose as giving input on workforce development needs. The Vocational Amendments of 1968 and 1976 mandated a more specific focus of providing curriculum guidance to career and technical education programs (Vocational Education Amendments of 1968, 1968; Vocational Education Amendments of 1976, 1976). Since the Vocational Education acts, community college programs have predominantly used career and technical education (CTE) advisory committees for programmatic input, communication, and connection with the workforce (Behymer, 1977; Bragg & Mills, 2005). These career and technical education advisory committees have now been tasked with the new role of guiding the curriculum modularization process. Unfortunately there is little existing research to describe the involvement of career and technical education advisory committees in curriculum modularization.

**Focus of the Study**

The major purpose of this quantitative descriptive survey study was to describe advisory committee member involvement in modularizing career and technical education programs. The primary research question of this study was:

1. What is the involvement of career and technical education advisory committees in modularizing curriculum?

The secondary research question of this study was:
2. What is the degree to which specific involvement of the advisory committee members has occurred in the various aspects of modularizing curricula, as defined by Bragg and Mills (2005)?

**Significance of the Study**

The purpose of this study was to describe the involvement of community college career and technical education advisory committees in modularizing curricula. This research had both scholarly and practical significance for three reasons. First, researchers have conducted very limited research on the involvement of career and technical education advisory committees in modularizing curricula, yet the magnitude of this practice is increasing, creating a tension between current and expected practice (Hull, 2005). Second, there is increased momentum to expand working lifetime opportunities, and modularized curriculum may play an integral part since modularization allows students to build upon their educational credentials as their life schedules allow (Boggs, 2010; Bragg & Mills, 2005). Third, it is suggested that employers must take a leadership role in shaping the workforce (Hull & Hinckley, 2007; Lattier, 2009), and this may be done effectively through work on advisory committees. This study described the current involvement, showing gaps in the process.

In the five decades since the Vocational Education Act of 1963, community colleges in the United States have been required to use advisory committees for programmatic input (Vocational Education Act of 1963, n.d.). Since then, the involvement of career and technical education advisory committees has increasingly become a standard requirement for many additional activities, such as grant applications,
funding agencies, and college accreditation standards (Welch & Gullickson, 2004). With over 1,000 public community colleges in the United States, over 10,000 advisory committees currently meet and offer input, from defining skill sets to providing job placement.

Over the last five years, employers, as part of advisory committees, have been asked to take on a new and expanding role key to the work of modularizing curriculum. This role is to participate in the process of creating shorter certificate programs from two-year associate degree programs. Current researchers and practitioners state that career and technical education advisory committees should be involved in modularizing curriculum due to their knowledge of the field (Alssid et al., 2002; Dins, 2005; Stephens, 2009). Unfortunately, there has been little research describing the current involvement of advisory committees in this effort, leaving a void of information regarding what they are actually undertaking, if anything, and how or if changes should occur.

In addition, research by Dins (2005), focusing on program modularization, identified that the college’s relationship with representatives from business and industry is a critical component of success in program modularization, given the belief that program modules should consist of employer-driven skill sets to meet employment qualifications. Dins’ research identified advisory committees and boards as key components for ensuring that career and technical education programs address the needed skill sets of business and industry, but her research stopped short of describing the actual involvement of the advisory committees in the important effort of modularizing curriculum.
The second reason that this study is significant is the current momentum for low-skilled workers to have increased opportunities for post-secondary training and education through modularized curriculum, assisting them in advancing to higher-skilled and higher-salaried jobs. In 2009, President Obama issued a challenge to the citizens of America, that each citizen successfully complete at least one year of college (Obama, 2009), thus doubling the number of Americans with post-secondary credentials by 2020. In September 2010, the American Association of Community Colleges, along with five other national organizations representing the 1,200 community colleges, signed a commitment letter supporting a completion agenda as a national imperative (Boggs, 2010). This joint commitment letter affirmed the need for a significant increase in college certificate and degree completion and pledged to change institutional culture and organizational structures from emphasizing access to emphasizing success.

Completion of post-secondary educational units may increase when curriculum is modularized in ways that enable working adults to remain in the workforce, while at the same time continuing with their education to earn credentials for higher-level employment (Warford, 2006). Modularized curriculum increases the likelihood that these educational modules will be combined to assist in further educational and workplace success. The research from this study provides information that may broaden the adoption of modularizing curriculum, and wider adoption may be a significant benefit to low-skilled adults.

The third reason the study is significant is the stated need for employer involvement in shaping the workforce (Hess, 2006; Hull & Hinckley, 2007; Jacobs &
Warford, 2006). Throughout history, employers have taken a key role in training employees. Through such things as apprenticeship programs and on-the-job training, employers have taught the skills needed in their own businesses. In recent history, however, many employers have stepped back from this leadership role in shaping their own workforce. Having less input into skills taught, and therefore into the degree of preparedness of their workers, many employers just settle for what others feel is important curriculum and adjust their business accordingly (Hull, 2007).

In an increasingly interconnected 21st century global economy, it is widely thought that employers need to be willing to become more involved in the creation of the workforce, or they risk not getting the quality of employees that they need to stay competitive. This needed involvement could be a commitment by the employers to participate in program modularization. According to a study by The Seattle Jobs Initiative, partnership with employers is a critical element in modularizing curriculum (Stephens, 2009). In each of the five states outlined in this study, colleges are expected to develop employer partners as part of curriculum development; but the report went on to say that the reality is that employer development ranges from formal to ad hoc, with the latter case being more common. This research study describes the involvement of employers on advisory committees in modularizing curriculum, and that description may help guide and increase future employer participation.

**Definition of Key Terms**

**Career pathways.** A series of linked education courses and training programs, along with support services that allow individuals to gain the skills for employment
within a specific industry. The pathway should also advance employees to successively higher levels of education in that same occupational area. Each step on a career pathway is designed to prepare for the next level of employment or education (Jacobs & Warford, 2006).

**Common characteristics of career pathways.** (a) Data-driven decisions, from the first step of selecting industries and occupations for pathways development through the work of identifying gaps in education and training for the target businesses; (b) use of “road maps” showing the paths between education and training programs and jobs at different levels within a given industry or occupation sector; (c) links between developmental, transfer, and occupational programs within educational institutions and the articulation of credits across institutions; (d) programs structured in small modules with each leading to a recognized credential; and, (e) the flexibility to enter and exit education components as circumstances permit (Jacobs & Warford, 2006; Jenkins & Spence, 2006).

**Modularized curriculum.** Associate degree and certificate coursework grouped into smaller sets of courses (modules), each with measureable outcomes, which prepare students for jobs leading to career and educational goals (Dins, 2005).

**Roadmaps.** Graphical depictions of the courses or curriculum blocks that students can take to achieve their specific educational and employment outcomes. Roadmaps show connections among education, training programs, and jobs in a given sector at different levels. Core elements of roadmaps include (a) occupations, (b) wages, and (c) labor market data and demand (Jenkins & Spence, 2006).
Support services. Services including career assessment, outreach, recruitment, referrals between programs, mentoring, coaching, tutoring, financial aid, counseling, case management, child care, job-search skills, and job placement assistance (Jacobs & Warford, 2006).

Advisory committees. A group of individuals that has interest in the outcomes of educational curriculum as it may impact the skills of their future employees. This group meets at least annually with educators to provide guidance and confirmation of curriculum. Advisory committees use a variety of names such as advisory councils, advisory committees, or local technical committees (Jarrett, 1993).
Chapter 2: Literature Review

This study focused on the involvement of career and technical education advisory committees in modularizing curriculum. Though there is a lack of relevant current research, some existing research focused on advisory committees’ involvement in traditional curriculum design and decision making. There are also studies regarding employer involvement within the broader concept of career pathways, of which modularization is one key component.

This literature review supports the selection of the primary and secondary research questions and also the appropriateness of a survey method to answer the research questions. The studies in this literature review focused on gaining more information rather than testing a hypothesis.

The first section of the literature review examines community college advisory committee involvement in curriculum development and redesign. The second section describes the current research on the career pathways work, emphasizing employer involvement.

Involvement of Career and Technical Education Advisory Committees in Curriculum Redesign

Career and Technical Education (CTE) programs are planned course sequences of general education content and technical skills. Usually such programs focus on a specific career cluster or occupational area and prepare students to successfully transition into employment (Association for Career and Technical Education, 2006). One possible way
to include expert input into the development and maintenance of career and technical education programs is through the involvement of CTE advisory committees, potentially providing insight, connections, resources, and jobs.

Community college CTE advisory committees have been involved in various levels of curriculum development since such participation was mandated in 1963 by the Vocational Education Act. Scott (1988) defined an advisory committee as a group of individuals who meet regularly to provide advice or support to assist an organization or project.

To help understand the current involvement of CTE advisory committees, it may be beneficial to understand the evolution of these committees, which provides insight into how they arrived at their current level of involvement. The Vocational Education Act (VEA) of 1963 was the first federal act that specifically directed the roles and work of advisory committees at the local level. This act was then followed by a 1968 amendment requiring each state to develop advisory groups that represent a wide range of individuals with backgrounds coming from management, labor, students, educators, parents of disadvantaged students, and the disabled. The amendment stated that an advisory committee’s purpose is to ensure the implementation of state legislation and provide consistent feedback regarding program curricula (Vocational Education Amendments of 1968).

In 1976, the VEA was amended again to require the use of local advisory committees to provide input about labor market needs and demands in order to assist the community college in defining program enrollment (Vocational Education Amendments
of 1976, 1976). The 1976 amendment also adjusted the advisory committee makeup to require that the members of the advisory committee be representative of business and industry, along with others outside of education. This membership requirement ensured no one business or individual could have a disproportionate impact on the focus of the educational program.

Expanding upon its predecessors, the Carl D. Perkins Act of 1984 required CTE programs to provide information regarding skill standards and occupational competencies necessary for job entry and retention, requiring greater involvement from those outside education by mandating that all state advisory councils under the act include professional educators and non-educators from the community (Carl D. Perkins Vocational and Technical Education Act, 1984). In addition, the Perkins Act mandated that each state establish CTE committees that would develop skill standards to help define the curricula required to address the state’s labor market needs.

Finally, the Carl Perkins Act of 2006 placed an increased focus on the academic achievement of CTE students, attempting to strengthen the connections between secondary and post-secondary education and to define state and local accountability. The act also supported CTE advisory committees through linkages in programs of study (Carl D. Perkins Career and Technical Education Improvement Act, 2006). A central idea emerging throughout these different laws is that advisory committees are looked upon as groups that provide valuable input into educational program design and that these committees function as the connection between colleges and the businesses they serve.
According to studies by Miller (1987) and Brockman (1981), advisory committees generally

- are comprised of individuals or stakeholders with knowledge or experience related to a department, program, or activity;
- are focused on contributing to student and program success by assisting the faculty members in understanding and responding to changes in the industry;
- provide both program evaluation and student evaluation;
- are expected to have a connection with the department chair, faculty, and staff members and also to rely on them for ongoing information needed to work effectively in their role on the committee.

The involvement of advisory committees can differ widely with each program. Many state departments of education and community colleges provide a handbook that serves as a guide for vocational advisory committees. Based on sample community college advisory handbooks from Oregon, Virginia, Massachusetts, and Minnesota, the expected levels of involvement of many community college advisory committees are similar. According to the goals stated in the handbooks, an advisory committee’s primary purpose is to provide a link between employers and the college. These committees are formally organized and meet several times each academic year. They typically have no legislative or administrative authority, and they do not administer programs; the advisory committee’s function is, therefore, mostly to advise. Committee members are expected to make judgments about program strengths, weaknesses, and directions and then to advise program staff members based on those evaluations. Miller (1987) stated that advisory
committee members are expected to base their judgments and related suggestions on their
knowledge of program goals, methods, and successes, as well as on the expertise and
background they bring to their work on the advisory committee.

The purpose of each advisory committee can vary from committee to committee,
college to college, and state to state. Cuninggim (1985) discussed the structure and
purposes of college and university advisory committees and identified seven purposes for
establishing them. These include: (1) to strengthen the academic program; (2) to improve
the school's management; (3) to review and evaluate the mission, programs, and services
of the college; (4) to recruit personnel; (5) to raise funds; (6) to promote public relations;
and (7) to improve the school's relationships with other schools in and outside the
university, with the university's central administration, church, or state, community
agencies, and professional organizations (Cuninggim 1985, p. i).

Hightower (2006) suggested a different kind of involvement using advisory
committees. He recommended taking a “focus group” approach, which involves inviting
industry experts to participate in a structured series of two to three meetings
concentrating on one topic or issue. Once the goal has been met, the meetings are
completed. The committee members are then asked to recommend others from their field
to participate on the advisory committee, focusing on a different topic or issue.

An examination of publications in the Education Research Information
Clearinghouse (ERIC) showed many common roles for community college advisory
committees. A search of the database revealed that many CTE advisory committees
operate in two-year colleges and that they typically bring ideas from business and
industry to their work on those committees, attempting to ensure that the college programs are aligned with their constituents’ needs.

Researchers studying advisory committees frequently used Riendeau’s (1967) research as a foundation on which to build their own studies. Riendeau conducted a survey of 60 American junior colleges on the function of occupational advisory committees. From his study, he produced the following list of nine advisory committee functions:

1. Serves as a communication channel between the college and community occupational groups;
2. Lists the specific skills and suggests related and technical information for the course;
3. Recommends competent personnel from business and industry as potential instructors;
4. Helps evaluate the program instruction;
5. Suggests ways for improving the public relations programs at the junior college;
6. Assists in recruiting, providing internships, and in placing qualified graduates in appropriate jobs;
7. Keeps the college informed in changes in labor market, specific needs, and surpluses, etc.;
8. Provides means for the college to inform the community of occupational programs;
9. Assess program needs in terms of the entire community (Riendeau, 1967, p. 28).

The study of advisory committee functions by Riendeau and the report on the purposes of advisory committees by Cuninggim (1985) have similar findings. Both researchers suggested evaluation, communication, and recruitment as functions of advisory committees. The latter study by Cuninggim, added fund-raising as a core role of the committees. In addition, in separate studies researchers used survey methodology to
identify the primary functions and contributions of advisory committees. The studies conducted by Behymer (1977), Kutscher (1982), and Lattier (2009) agreed with Riendeau and Cuninggim that some of the primary responsibilities were in the areas of course content, course outcomes, and curriculum development.

Conroy’s (1996) research focused on curriculum development and guidance as a function of an advisory committee. This study focused on two- and four-year hotel and restaurant management programs and showed that advisory committees in the two-year programs focused on providing input for courses and facilities while the advisory committees in the four-year programs spent more of their time fundraising. Conroy (1996) concluded by suggesting that an advisory committee’s involvement is most beneficial when there is strong direction provided by the community college leadership.

Based on the literature review of community college advisory committees, their common functions are to identify workforce needs, recommend skills sets, review (validate) curriculum, collaborate with stakeholders and constituents to promote public relations, raise funds, recruit personnel, and evaluate the program.

While functions have clearly been identified, there have been few studies and papers on the impact or effectiveness of advisory committees on community colleges. Vu (1999) conducted a longitudinal study on the effects of an advisory committee on a manufacturing engineering program at a Texas community college. Vu observed two levels of involvement during a 10-year period. From September 1988 to August 1996, the advisory committee was somewhat involved, culminating with a high-involvement period from September 1996 to August 1998. During the high-involvement period, the advisory
committee assisted with the following: increasing enrollment, identifying expectations of the local manufacturing industry, providing job placement, developing curriculum, providing professional development to faculty members, and informing administrators of new manufacturing technology. Vu suggested that the program benefited during the period of high involvement by the advisory committee, as opposed to the somewhat involved period.

One of the most widely-known and accepted uses of CTE advisory committees is their work with curriculum development (Conroy, 1996; Cuninggim, 1985; Hess, 2006; Lattier, 2009; Myers, 2008). Advisory committees, with links to their employment sites and professional associations, are usually at the forefront of innovations and change in business practice in their places of employment and in similar organizations. Change can often occur so rapidly that it is difficult for faculty to stay current with innovations in their field without guidance from those within the industry sector (Grubb & Stromsdorfer, 1997). CTE advisory committees also make recommendations on subject matter deletions from curricula. When content is no longer relevant to a business and industry, advisory committees can provide that added support in the often difficult task of deleting courses and content.

The use of advisory committees is important to help validate curricula, and when a program needs to be revitalized or updated, an advisory committee can be very effective in the process so that the program can continue to meet the needs of the community it serves (Conroy, 1996). Many program administrators who feel a program needs a significant change in direction seek advisory committee members’ input, and a
modularized curriculum is a strong example of a course of study that needs significant change in the way it is structured.

Teitel (1994) suggested that community college administrators involved in a major transformation of their institutions use the influence of outsiders to bring about this institutional change because a stronger case for change is made when using recommendations and information from individuals outside the educational institution. Teitel also stated that the faculty and staff of a program going through drastic change might not perceive the outside suggestions in a positive light, and faculty and staff may seek new committee members instead of heeding the advice of the current ones.

According to research by Mercer (1990), an effective advisory committee has one primary purpose: to review issues related to program and course curricula and to make appropriate recommendations. In other words, members of the advisory committee review what needs to be taught to prepare students for success in the workplace. Curriculum discussions include topics such as specific content, emerging technologies, soft skills—such as communication skills—needed for success in the workplace, types of equipment used in the workplace, and workplace trends.

Miller (1987) suggested that conceptually, an advisory committee is well-suited for an active role in program evaluation because the advisory function itself is partially evaluative. Members are expected to make judgments about program strengths, weaknesses, directions, and then advise program staff members accordingly. Committee members are expected to base their evaluations and suggestions on knowledge of program goals, methods, and accomplishments. When advisory committees are in close
contact with program administrators, they have a greater opportunity to influence program change. The position of the advisory committee is typically independent of program decisions and operations, potentially giving members more of a neutral position than those involved directly with the program.

In this respect, Miller (1987) suggested that advisory committees could be considered qualified to function in the manner of an outside evaluator, even though the effectiveness may be limited by the action or inaction of program administrators. Similarly, as they lack structured day-to-day contact with a program, advisory committees are dependent upon department chairs and other faculty members to create an environment in which a useful advisory role may function. A study by Winsor (1992) suggested that CTE advisory boards might give credibility to the process of gaining and maintaining accreditation; an advisory committee could act as a checkpoint in gaining a favorable review.

Some studies specifically focusing on advisory committee members suggested they are not as helpful as many have assumed. A brief review of these studies helped guide how the questions were asked in this research study.

Krause (2000) reported that advisory committee members often do not receive clear expectations about their roles on advisory committees from the college leadership. He found that meetings lacked prepared agendas and minutes, and without an agenda, committee members were confused about their purpose. After long-term confusion, members became ambivalent and often stopped attending, or they attended meetings and merely served their time, not offering any significant feedback. In the end, the study
suggested that, in light of these results, some members of advisory committees do not fully accept their responsibilities. Krause’s (2000) findings were consistent with prior studies. Light (1982), Blair (1973), and Cochran (1980) all found that many committee members do not understand or accept their responsibilities as committee members. These studies also suggested that most members do not fully understand their role in the development of educational programs.

Ireland (1980) concluded that the involvement of advisory committee members is especially valuable for solving problems that are related to program content. In this study, over 200 advisory committee members representing 24 programs were surveyed to learn their involvement in 42 tasks, which were categorized into eight primary areas consisting of public relations, course-content advisement, community resources, program review/evaluation, occupational surveys, facility planning, student placement, and program staffing. The advisory committee rated program advisement and program review as two of their most important tasks. The study further explained that advisory committee members felt only minimally involved in each of the 42 tasks but that the involvement of advisory committee members is especially valuable for program content-related issues.

A variety of studies have confirmed that advisory committees are important in solving program-related issues (Myer, 2008). Cumulatively, these studies indicate that advisory committees can have a significant impact on changes to a program’s curriculum and competencies by offering advice on both what is and is not working. Teitel (1994) reported the widespread existence of committees that occur only on paper. Others have found that many programs and institutions do not effectively use their advisory
committees for advice or support (Axelrod, 1990). Much of the interest in the use of advisory committees appears to come from the federal government and the programs it funds (Gullickson, Lawrenz & Keiser, 2004).

Since the Vocational Education Act of 1963, which formally mandated advisory committees to assist in clarifying workforce education content, the basic concept of an advisory committee has continued. The functions of the advisory committee usually consist of: identifying skill sets needed for course content, recommending faculty, evaluating programs, informing the college of labor market changes, providing placement assistance and internships, and finally, helping with equipment purchases and donations.

Numerous researchers confirmed the value of using advisory committees for the development and evaluation of career and technical education programs and the importance of the connections the committees create between business and education. Currently missing from the literature is the involvement CTE advisory committees have when examining ways to modularize curriculum.

**Employer Involvement in the Career Pathways Initiatives**

Educators, politicians, and other stakeholders have influenced the way programs are organized for many years. The goal of the career pathway initiative is to assist community colleges and their partners in creating paths that lead from high school to two- and four-year degrees and, subsequently, employment.

Nationally, what is called the career pathways initiative began with the College and Career Transitions Initiative (CCTI). In the CCTI, 15 community colleges identified as having strong secondary to post-secondary partnerships committed themselves to
improving the academic performance of students in both high school and community college. These colleges formed a consortium with the goal of helping to identify, develop, and refine practices that help students move more effectively through all the stages of education. This effort focused on closing the achievement gap, developing educational options for students with diverse backgrounds and needs, and ensuring that students reach high standards at each educational level. The second and third of the consortium’s strategies began the push for modularized curriculum (Jacobs & Warford, 2006). The process of planning and the experience of working in partnership to complete the objectives of the CCTI led to many lessons being learned, one such being that the design of curriculum must be validated by employers (Hess, 2006).

Davis Jenkins, a senior researcher at the Community College Research Center at the Teachers College in Columbia University and one of the originators of modularized curriculum, suggested that the creation of small modules leading to a recognized credential was a key idea that would enable students to secure better jobs and higher levels of education and training. In some of his earlier writing about career pathways and modularized curriculum, Jenkins (2005) went on to say that when they are most successful, these small modules are built to achieve multiple objectives. He also proposed that, in order for employers to participate and stay engaged in building such modules, each employer must see the clear benefits arising from their involvement (Jenkins, 2005). Ideally, all partners should have opportunities to provide input into how programs are modularized at the outset, when the program is defining its goals and benchmarks. This
input builds a consensus around a shared vision and helps define roles to assist in the modularizing work.

A career pathway is a series of connected educational units, possibly with integrated work experience or on-the-job training and student support services, that assist adults in advancing to better jobs and higher levels of education. Career pathways typically target jobs relevant to local economies and are designed to create education paths or steps for the advancement of workers and job seekers, including those with basic skill deficiencies, and to supply qualified workers to employers. Typically, career pathways focus on high-demand, high-wage jobs, incorporate skills training and work experience, and upgrade training into one seamless system (Jenkins, 2005).

Although states differ slightly in their definition of career pathways, Jenkins and Spence (2006) suggested that these are key characteristics in a career pathway:

- Regional partnerships of community colleges and other educational institutions—along with the workforce, human service, and economic development agencies—and employers working in concert to support worker advancement and meet employer needs.
- “Road maps” jointly produced by educators and employers, showing connections between education and training programs and jobs in a given sector at different levels.
- Easy articulation of credits across educational institutions and clear connections among remedial, academic, and occupational programs within institutions; this will enable students to progress “seamlessly” from one level to the next and earn credentials while improving their career prospects.
- Curriculum defined in terms of competencies required for jobs and further education at the next level and, where possible, tied to industry skills standards, certifications, or licensing requirements.
- “Bridge programs” for educationally-disadvantaged students that teach basic skills, such as communication, math, and problem solving in the context of training for job advancement.
- Programs offered at times and places (including workplaces) convenient to working adults and structured in small modules with each leading to a
recognized credential to allow learners to enter and exit education as their circumstances permit.
• “Wrap-around” support services, including career assessment and counseling, case management, child care, financial aid, and job placement (Jenkins, D., & Spence, C., 2006. p3).

In 2002, the Workforce Strategy Center first examined the career pathways concept (Alssid et al., 2002). Since that time, this group has published numerous reports that provide best practices, evaluations, and “how-to” guides for practitioners and policymakers. Based on its work with regional partnerships and states across the country, the Workforce Strategy Center has developed a five-stage process for building career pathways. Generally speaking, the stages are gap analysis, career pathways planning, implementation, continuous improvement, and expansion. In a gap analysis for career pathways, labor market needs are analyzed, and the strengths and weaknesses of existing education and workforce development services are assessed. The areas with gaps are looked into more closely for further development. In career pathways planning, the college identifies and organizes employers and other partners. During this stage, employers are involved in mapping the structure of jobs, the job requirements, and promotion pathways in the specific industry sector. During implementation, memoranda of understanding specifying roles, commitments, and contributions of each partner are outlined. Continuous improvement defines the evaluation of program performance and student outcomes. Finally, expansion involves applying the pathways model to other populations and geographic areas and expanding partnerships to other organizations.
In keeping with the broader concepts of career pathways—yet focusing more specifically on employer involvement—Hull (2007) created a generic and adaptable model regarding employer involvement in adult career pathways development:

(a) career pathways are developed by colleges, but their focus and content are strongly influenced by local employers;
(b) each career pathway focuses on a single employment sector;
(c) participating employers identify the skills that workers in their sectors should possess;
(d) participating employers jointly create career ladders that identify what career pathways student employees must take to move upward incrementally in the workforce;
(e) colleges assume the responsibility of recruiting students and preparing them for entry-level employment;
(f) participating employers interview and hire students after they complete the first rung on the ladder;
(g) student employees work part-time for the employer partners while taking credits hours at the college;
(h) student employees work full-time while taking a lesser amount of credits at the college;
(i) each time a student employee progresses from one stage on the ladder to another, he or she is recognized and rewarded by the participating employer;
(j) participating employers must agree not to attempt to hire student employees away from one another (Hull, 2007, p.81-86).

Bragg and Mills (2005) defined nine roles for employers on a pathways committee. This work stated that employers should be empowered to engage in a number of roles supporting pathways development, which include the following:

(a) assess emerging occupations and employer needs, (b) set specifications for curriculum, (c) validate content, (d) assess program quality, (e) provide education and training experiences for students, (f) give credibility to career and technical education programs, (g) recruit students, (h) mentor and support students, and (i) place graduates in good jobs (Bragg & Mills, 2005, p. 175-179).

Bragg and Mills (2005) did not speak directly to the specific involvement of modularizing curriculum, but the second role dealing with curriculum specifications is, in effect, modularization. The curriculum modules for a career pathway program should be
aligned with exit points for employment to ensure that students have a full range of options.

Jacobs and Warford (2006) outlined five roles for employer involvement in developing career pathways:

(a) employer validation of career pathways;
(b) employer involvement in the determination of relevant skills;
(c) ongoing oversight of a pathway’s relevance and content;
(d) employer input and support for incumbent worker pathways; and
(e) employer support of graduates (Jacobs & Warford, 2006, p.6).

Jacobs and Warford (2006) focused on employer involvement in the broader concept of career pathways, emphasizing that the future of communities and the country, along with individuals, depends upon the ability of community colleges, with help from stakeholders, to move students into quality jobs and continuing life-long learning (Jacobs & Warford, 2006).

The three lists outlined above are consistent, with all of them defining the employer’s role as influencing program and curriculum development. They also leave unclear how employers actually do the influencing or suggesting, and none of the lists mention specific involvement in modularization.

This overview of the career pathways initiative leads to the more specific but limited literature regarding employer involvement with the second stage of career pathways development: career pathways planning. At this stage, programs are reviewed, organized, and, if employers and other partners recommend, modularized. In the United States over the past 10 years, numerous books, articles, presentations, and policy recommendations have suggested that employers have meaningful involvement in
curriculum modularization, but no studies were found that describe the involvement of employers and, more specifically, the involvement of an advisory committee member. The next section summarizes employer involvement in curriculum modularization.

Deciding what programs to include in potential modularizing discussions is one of the first ways employers are involved in planning curriculum modules. Looking at strengthening transitions into college and careers, a report from the Community College Research Center stated that employers can and should help institutions select occupational areas for modularization to ensure that students are being prepared for economically viable jobs (Hughes & Karp, 2006). Data used for this report consisted of interviews with site contacts from the College and Career Transition Initiative and other experts in education and workforce development. From those interviews, there was agreement on the importance of employer involvement in modularization and also on the idea that federal policy often gives employers a place in the conversation, for example, by requiring employer participation on Workforce Investment Boards (WIBs) as part of the Workforce Investment Act. However, many of the interviewees stated that their programs did not have a prescribed role for their employer partners. In addition, the research for this article found few policies that served as incentives to formalize employer participation.

There are examples of programs which have involved employers in different ways. Research in employer involvement with bridge programs, the DACUM (Develop a Curriculum) process, and the “Year Up” model offers some potential best practices that can be incorporated into the employer roles in modularizing curriculum.
A bridge training program prepares adults who may lack adequate basic skills to enter and succeed in post-secondary education and training; these are usually adults who have reading and math abilities below that of a high school freshman. Bridge programs typically teach adults in context with training for jobs and preparing for employment, and research finds that employers have numerous roles in the development and implementation of the curriculum of such programs. In the bridge development stages, the employer’s role is to identify specific entry-level requirements, technical and soft skills, and desired competencies for those who complete the program. Employers also may provide copies of manuals, forms, and procedures that could be incorporated into the curriculum. As the program is being developed, employers may provide program review and feedback; this step ensures that the student skill set upon completion is aligned with employer needs and expectations. During the implementation phase, employers stay involved with the bridge program by regular communication with program faculty, as well as through field trips, job shadowing, internships, and guest speaking (Henle, Jenkins, & Smith, 2005).

The DACUM (Developing a Curriculum) process was initiated in specific programs to ensure the material being taught matched employer needs (Norton, 1997). DACUM is an occupational analysis method focused on creating curricula based on three premises: (a) expert workers are best suited to describe their jobs, (b) any job can be effectively described in terms of competencies or tasks that productive workers perform, and (c) the specific knowledge, skills, and attitudes to perform the job correctly can also
be described. Ally and Coldeway (1999) used the following four-step process in defining skills needed:

1. A brainstorming session asked all the participants to provide skills sets needed by workers for a particular job.
2. After brainstorming, participants reviewed the list making suggestions for missing items.
3. Participants grouped the skills into clusters.
4. A final review of the clusters was completed and revisions were made in order to get consensus.

Ally and Coldeway (1999) conducted a survey of faculty who participated in a DACUM four years prior to find out if any changes had been made to the original set of competencies established through a DACUM process. They found faculty had made changes to the curriculum to keep its content current. Along with making changes to the competencies, faculty also removed 10% to 15% of them. A second DACUM was established, and changes were again made to the proficiencies, adding some and adjusting others. Ally and Coldeway said that the results of their findings reinforced the need to continually review competencies. The DACUM process also checked the necessary level of training in program areas, testing the presumption that an associate’s degree is needed when, in fact, a student may be employable with just a set of technical skills.

The Year Up project provides another example of employer involvement in curriculum development. Year Up, an organization that seeks to prepare urban young adults for high-paying careers and continued education, has had some success in
engaging employers. Its program model is premised on straightforward business principles: develop a relationship with customers, understand their needs, offer a top quality solution, and institute a management strategy of continuous improvement (Workforce Strategy Center, 2009). Year Up invites employers to develop curricula, tour classrooms, participate as guest lecturers, and provide frequent feedback regarding on-the-job performance. In addition, employers are frequent visitors to the classrooms.

Bridge programs, DACUM, and the Year Up program describe employer involvement in program design as taking the form of communicating skill sets needed for particular jobs. It is important that for various partners to be involved and stay engaged in modularizing curricula, each partner must see clear benefits coming from its involvement in the work (Jenkins & Spence, 2006). These authors also asserted that partners need some involvement at the beginning of the work, when the partnership is defining its goals and outcomes.

The career pathways model has provided benefits to students and the community along with local employers, who support it because it fits their needs. They want their employees to be skilled, knowledgeable, and ready for work. The modularized curriculum is responsive to such employers, understandable to the students, and relevant to the primary mission of the college: student success (Sass, Pedersen, & Truman, 2007).

In publications about career pathways development, there are examples of how individual state and community colleges have involved employers in program modularization. Rhodes State College in Lima, Ohio involved local employers when it modularized curriculum in manufacturing. The college invited many manufacturing
employers in the region to assist in the design of the new program; so far, the companies are sufficiently pleased with the results and are now helping fund the program. One of the reasons the college has cited success in this endeavor is that its involvement with its employer partners began early in the planning process (Jenkins & Spence, 2006).

Palm Beach Community College in Lake Worth, Florida realigned its curriculum to allow students to easily progress through career pathways in the college’s career and technical education programs. Local businesses and employers worked with college faculty to modularize associate degree programs into smaller modules or certificates. The process began with surveys conducted through the local business development board to identify needed programs. Once a program was identified as needed, its curriculum content was examined for relevance to the business community needs.

The lack of policies also plays a role in employer involvement in modularizing curriculum. A brief prepared by the Community College Research Center (CCRC) summarized state-level and legislative policies supporting the implementation of career pathways. Data gathered for the investigation consisted of interviews with the site contacts for the College and Career Transitions Initiative (CCTI) and other experts in workforce education and development. Those interviewed agreed they did not have prescribed roles for their employer partners and that there were few policies that served as incentives to formalize employer participation, although a few states had implemented policies that supported consistent involvement of employers in modularizing curriculum (Hughes & Karp, 2006). For example, Iowa’s Accelerated Career Education Program provides funds for associate degree programs that lead to high-wage employment. To
receive these funds, colleges must work with employer partners who then make a commitment to employ 25% of the program’s graduates and to pay them a reasonable wage. Kentucky’s Workforce Investment Network System also provides funds that can be used for modularization initiatives that demonstrate the commitment of employers to education (Hughes & Karp, 2006). Overall, despite the few examples given, a review of state policies found that employers seem to be, for the most part, absent in the policies examined.

While there are structural differences in the way programs are delivered in different countries, curriculum modularization outside the U.S. is occurring as well. Many countries in Europe have to some extent introduced modularization in their technical and vocational education and training (TVET) programs over the past 20 years. The reasons behind this move vary from country to country but often involve reforming training systems for such reasons as rationalizing education and training systems, making education and training more flexible and responsive to the needs of students and industry, and improving access to education and training (Stanwick, 2009). The involvement of employers has raised some concerns. In Australia, the involvement of employers in the development of modules has been seen by some as marginalizing the role of teachers. There is also concern regarding the employers’ approach to modularization. In South Africa, concerns were raised about the representativeness of employer groups and also the possible inequalities in power among stakeholders (Stanwick, 2009).
Summary of Related Literature

The relevant literature is consistent in revealing both the basic concept of an advisory committee and its typical functions. These functions include defining skill sets, recommending instructors, suggesting program outcomes, evaluating programs and graduates, improving public relations, and providing job placement assistance. Most authors reviewed also agreed on the value of using advisory committees for workforce education programs. The advice and guidance the committee members provide can potentially assist in developing focused programs for the community. This information provided a solid foundation upon which to develop survey questions to further investigate this topic.

In reviewing related literature, it is apparent that little, if any, research into the career and technical education advisory committees’ involvement in modularizing curriculum has been conducted. Most of the literature is more focused on a generic role for advisory committees or the more specific role of employers in developing career pathways.

The studies reviewed provided a rationale for a descriptive survey approach, which focused on the career and technical education advisory committees’ involvement in modularizing curriculum. The literature reviewed relied on surveys, interviews, and reviews of secondary data, all appropriate for using survey methodology. And as stated at the beginning of this chapter, the studies that emerged from this literature review focused on gaining additional information instead of testing a hypothesis.
Chapter 3: Research Methodology

The purpose of this study was to describe the involvement of career and technical education advisory committees in modularizing curriculum. This chapter describes the research design of this study, selection of both participants and states, development of the survey instrument, strategies to address reliability and validity, procedures in conducting the research and analyzing the data, and finally, the limitations of the study.

Research Design

Developing career pathways and modularizing curriculum is a nation-wide initiative that at some level is impacting most of the over 1,200 community colleges in the United States (Hull, 2005). A variety of research designs could have been used to understand the involvement of advisory committees in the modularization process, but, given that the purpose of this study was to describe the current practice, survey methodology was a good fit, being one of the most appropriate methods for researchers interested in collecting original data to help describe an activity too large to observe in person (Creswell, 2008; Rubin, 2007).

This particular survey focused on those community college career and technical education program advisory committees in Oregon and Wisconsin that were identified as being engaged in the career pathways initiative related to modularizing curriculum (Stephens, 2009). The state of Oregon has 17 independent community colleges, all offering coursework and/or degrees in career and technical education, developmental education, adult continuing education, and lower division transfer. Oregon community
colleges serve approximately 384,000 students each year (Department of Community Colleges and Workforce Development, 2012). Ten of the 17 Oregon community colleges pathways coordinators confirmed that they had modularized programs and agreed to send out the survey to those programs’ advisory committee members.

Wisconsin is made up of 16 technical colleges and 13 two-year community colleges. Only the 16 technical colleges were included in the survey has they were the only Wisconsin colleges designated by the pathways coordinators as having participated in modularization. The Wisconsin Technical College System serves 380,000 students each year offering more than 300 career programs, including associate degrees and technical diplomas (Wisconsin Technical College System, 2012). Three of the 16 Wisconsin community colleges confirmed modularization and agreed to send out the survey.

According to Lodico, Spaulding, and Voegtle (2006), the characteristics of survey methodology include a clearly defined sample, a specific issue, and questions that focus on the sample participants’ perceptions about their actions. To comply with those characteristics, the sample for this study was career and technical education advisory committee members in two of the five states most advanced in developing career pathways. The questions on the survey tool focused specifically on the involvement of advisory committee members in modularizing curriculum; and the questions on the survey tool asked the participants to rate their perception of their level of involvement in a variety of modularizing activities. Thus, the questions were straightforward and clearly stated.
This was a descriptive study designed to describe the involvement of career and technical education advisory committees in modularizing curriculum during one fixed point in time. Since a major purpose of descriptive research is to provide an overall “snapshot” of an activity by describing the situation (Rubin & Babbie, 1993) and not by looking for a detailed description, a survey was an appropriate method for this research and well-suited for the research questions.

The survey link was open from October 12th, 2011 to November 21st, 2011, and the participants had to begin and end the survey in one session. As stated in Chapter 1 of this dissertation, there has been significant work in advancing a career pathways curriculum design process, but what has yet to be studied is the specific involvement of career and technical education advisory committees in modularizing curriculum. Describing what currently exists is the first step in establishing a protocol for career and technical education advisory committees who are tasked with advising educators on how to modularize existing curriculum. A descriptive study approach allowed the researcher to provide data regarding the current status of career and technical education advisory committees in modularizing curriculum.

Finally, this descriptive survey was web-based. The literature suggests that email correspondence and the internet provide a capable means for conducting surveys as long as the population being surveyed has easy access to both a computer and the internet (Dillman, Smyth & Christian, 2008). In this case, all advisory committee members surveyed had an email address.
Participant and State Selection

The steps taken to reach the appropriate advisory committees in each of the two targeted states in the study were consistent, but the results differed. The following section will detail the path to the final result of surveying advisory committee members in Oregon and Wisconsin.

Stephens (2009) wrote that five states (Oregon, Washington, Kentucky, Wisconsin, and Arkansas) have an existing statewide framework for career pathways, and the advanced nature of their career pathways work suggests that these state are good candidates for further study. Based on this rationale, advisory committees in Oregon, Washington, Kentucky, Wisconsin, and Arkansas were originally selected for this study.

At the time that Stephens’ report was written, these five states represented three different stages of career pathways implementation: (a) mature, defined as fully-implemented efforts, like those underway in Arkansas, Kentucky, and Oregon; (b) intermediate, defined as the growing effort to develop critical tools to support the framework and enable students to access career pathways, in states like Washington; and (c) emergent, defined as burgeoning career pathways efforts, like those in Wisconsin (Stephens, 2009).

Guiding each of these state initiatives is a lead person who is charged with moving forward the career pathways initiative in his or her state (see Appendix A). These designated leads are appointed individuals who work in partnership with multiple stakeholders and directly with the pathway coordinators at each individual college. A request was made to each of the five state leads, asking them to identify all the community colleges in their state with career and technical education programs that have
participated in modularizing curriculum and then to provide the name and contact information of those colleges’ pathway coordinators.

While the initial study proposal suggested focusing on five states, due to the reported lack of advisory committee involvement in modularizing curriculum, as stated by the college’s pathways coordinators in Arkansas and Kentucky, those two states were dropped from the study. The pathways state lead in Washington never responded to contact attempts, leaving Wisconsin and Oregon as the two states used in conducting the survey.

The participants surveyed at the college sites in Wisconsin and Oregon included all members of the career and technical education advisory committees at those colleges identified by the college’s pathways coordinator as having modularized curriculum. These members included faculty, employers, students, and administrators. According to McMillan (2000), an essential component of designing a good research study is correct subject selection; therefore, through detailed conversation with the pathways coordinators, all possible effort was made to ensure that the survey reached all committee members. Their anonymity was assured to avoid response bias.

**Survey Instrument Design and Development**

The design of this survey was determined by a variety of factors, including the potential respondents, the amount of time the respondents might be able to spend on completing a survey, the number of potential respondents, the type of information sought from the survey, and the range of possible answers. Because the sample consisted of advisory committee members from a variety of organizations representing many sectors,
a short survey consisting of 19 closed-ended questions was created. The closed-ended questions limited wide variations in answers—thus possibly limiting more in-depth description—but it was an efficient and effective way to collect and analyze data from a large and geographically disperse population.

After a thorough search, this researcher found no existing surveys that measure advisory committees’ perceptions regarding modularization, although work by Bragg and Mills (2005) outlining possible employer roles in career pathways became the foundation for the design of the survey questions. Bragg and Mills (2005) looked at the full range of roles for employers on a pathways committee and defined nine specific roles, with two of these roles focusing specifically on modularizing curriculum: (a) setting specifications for curriculum and (b) validating content.

The survey instrument used a five-point Likert scale, asking respondents to evaluate their level of involvement in a variety of functions that the literature suggested are components of the process of modularizing curriculum. Five response choices were given on the survey instrument, providing an equal number of positive and negative choices along with a neutral position.

In late September 2011, a pilot study was conducted to strengthen the validity and reliability of the survey. A pilot survey was sent out to two advisory committees at Linn-Benton Community College: one committee in healthcare and one in manufacturing. This complied with Russ-Eft and Preskill’s (2001) suggestion that up to ten people are a satisfactory number for a pilot study.
Advisory committee members completed the survey and then responded to questions about the clarity of the survey questions, with 17 of a possible 40 committee members responding. From the 17 individuals, two suggestions for change were made. First, it was suggested that the term “modularizing curriculum” be more clearly defined. Based on this feedback, the survey was revised with a more complete definition of “modularizing curriculum.” The second suggestion, made by one respondent, was to add a “not applicable” choice. It was decided, however, that adding this choice was not appropriate since all the advisory committee members surveyed were part of a program involved in modularizing curriculum. In all situations, therefore, all the questions on the survey were deemed applicable.

**Data Collection**

As stated previously, advisory committee members from two states, Oregon and Wisconsin, were surveyed in this study. Data were collected using a web-based survey consisting of a series of questions with scaled responses providing answer options that were marked by the subjects completing the questionnaire. This survey link was provided to all advisory committee members of programs that had modularized curriculum, as defined by each college’s pathway coordinator. A reminder email was sent to all participating program coordinators and deans two weeks after the survey link was first sent. Representatives at one college in Wisconsin asked to have the survey response deadline extended by two weeks, and the request was granted.
Strategies for the Protection of Human Subjects

Approval for this study was obtained from the Oregon State University Institutional Research Board (IRB). All the necessary protocols ensuring participant confidentiality were followed, as prescribed by the IRB. The survey was created so that no personal or state-identifying information was required. One college in Wisconsin asked that it be allowed to review the IRB approval before the college was willing to participate. Once the review had been completed, the college agreed to participate.

Data Analysis Procedures

Data were gathered using Hosted Survey, a web-hosted survey software application tool that allows survey responses to be collected and downloaded to a Microsoft Excel file for assessment. No personal or state-identifying information was included in the survey results, maintaining complete anonymity of the respondents. The statistical functions of Microsoft Excel were used to analyze the data collected.

Limitations of the Study

Even though a survey design was a good fit for gathering information and perceptions from advisory committee members, this study contained several limitations, some expected in survey research and some particular to this study. Respondents were limited by the choices on the survey instrument, so there was no opportunity to probe for more detail in any area. The survey questions in this study could not be modified by the recipients; therefore, the researcher may be unaware of an important variable.

Gall, Gall, and Borg (2005) suggested that almost all survey research has certain risks, such as self-reporting bias and exaggeration, and this was a limitation of this study.
Data only reflected what was reported by advisory committee members. The accuracy of their involvement was based on their perceptions alone. It is unknown if all respondents had a clear understanding of each question on the survey or if an advisory committee member had some recent interaction that would bias his or her answers.

Another limitation of the study that posed a threat to external validity (generalizability) was the use of state leads and pathways coordinators to determine which programs had participated in modularization, thus establishing which committees received the survey. This study was dependent on the state leads’ ability to identify community colleges that are engaged in the modularization of CTE curriculum. There was a risk that not all the appropriate advisory committees were surveyed. In some situations, pathways coordinators declined to allow the survey to be sent to their advisory committees, even though the particular programs had been modularized. Finally, a limitation of this descriptive study was its inability to generalize to all community colleges or all programs at the selected community colleges.
Chapter 4: Results

The emerging practice in community colleges of modularizing curriculum is an important trend, and this study sought to explain and describe this practice. Modularizing curriculum involves breaking apart complete educational qualifications, such as associate degrees, into industry-supported segments, each of which has measurable outcomes and leads to a specific job. In many cases, the curriculum modules do not already exist; the module content, sequencing, and length must be developed, and this development process is thought to be strongest if driven by industry experts, such as employers and advisory committees (Bragg & Mills, 2005; Dins, 2005; Jenkins, 2005).

The results of this study addressed two research questions: (a) what is the involvement of career and technical education advisory committees in modularizing curriculum, and (b) what is the degree to which specific involvement of the advisory committee members has occurred in the various aspects of modularizing, as defined by Bragg and Mills (2005). These results are presented in a descriptive and non-evaluative manner.

To describe the involvement of career and technical education advisory committees in modularizing curriculum, this study focused on gathering information on advisory committee members’ perceptions related to their involvement in the process of developing modules. Survey methodology was used for this study because it is an appropriate method for collecting data to assist in describing an activity that is too large and difficult to observe in person. This survey focused on community college advisory
committees in Oregon and Wisconsin, two of the five states identified in a study by Stephens (2009) as being states engaged in the career pathways initiative related to modularizing curriculum. All career and technical education advisory committee members working with modularization in public community colleges in Oregon and Wisconsin were identified for this study by their respective college career pathway coordinators or their career and technical education coordinators.

Each college’s career pathways coordinator or the career and technical education program coordinator sent a link to an online survey to advisory committee members of programs defined as being involved in modularizing curriculum. This same group was sent a reminder email a week before the survey web link was scheduled to close. The survey web link was open for five and a half weeks, from October 12th, 2011 to November 21st, 2011.

**Identification of Participants**

The participants surveyed at the college sites in Wisconsin and Oregon included each member of the career and technical education advisory committees at those colleges that were identified by the college’s pathways coordinator as having modularized curriculum. These members included faculty, employers, students, and administrators.

The initial sample size was 1,518 members, with 79 email requests returned as undeliverable and 5 respondents not consenting to take the survey, making for a final sample size of 1,434. Surveys were completed by 300 people, giving this study a return rate of 21.0%, and 100.0% of the respondents answered all of the survey questions.
The data presented in these results were gathered from 300 survey responses from Oregon and Wisconsin. Next is an explanation of how Oregon and Washington became the states targeted in this survey. On September 2nd, 2011, an email was sent to the statewide pathways coordinators in Arkansas, Kentucky, Oregon, Washington, and Wisconsin (see Appendix C), explaining the researcher’s request to survey advisory committee members working with programs that have participated in modularizing curriculum.

The Washington statewide coordinator was unresponsive after contact was attempted through email on both September 2nd, 2011 and September 26th, 2011. Due to the lack of response, Washington did not participate in the survey.

In Arkansas, the statewide pathways coordinator sent an email to the state’s pathways contacts through the state’s pathways list serve, asking for the contact person for program advisory committees at each of those campuses to make contact with the researcher. Three community colleges responded to the request, and all three replied that they are engaging in curriculum modularizing but that advisory committee members have not been involved. Because of this information, Arkansas was not asked to participate in the survey.

In Kentucky, the statewide pathways coordinator responded to the researcher’s request by providing the contact information of the individual who oversees curriculum committees at the state level. She responded that, in Kentucky, advisory committees play a role in competencies embedded within the program curriculum but that faculty has the responsibility for modularization. The faculty’s experience in the delivery of those
competencies shapes the modularization breakdown, and advisory committees are not involved at this level. Based on this information, Kentucky was not asked to participate in the survey.

In Oregon, the state pathways coordinator emailed the request to the Oregon Pathways Alliance group, which consists of the pathways coordinators at each of the 17 community colleges in Oregon. From that email, the researcher was contacted by pathways coordinators from ten colleges, and all ten of those colleges confirmed that they had modularized programs and agreed to send out the survey link to the appropriate advisory committee members.

Wisconsin has two designated pathway leads, one focusing on adult basic education (ABE) and one focusing on career and technical education (CTE) programs. The design of career pathways at each of their 16 technical colleges varies from college to college, and not all colleges have used modularization as part of their career pathways work. The state lead focusing on career and technical education programs provided the researcher with the contact information, by program area, for the administrators at each technical college. A request to participate was sent to this group (see Appendix D), and the researcher was then contacted by deans from three colleges who agreed to send out the survey link to the appropriate advisory committee members. One college asked that this study’s IRB approval be submitted for its review and requested that the researcher complete the college’s own IRB form (see Appendix E).
Demographic Data

As shown in Figure 1, the main occupational areas of the programs represented on this survey, based on the occupational categories from the National Center for Educational Statistics, were trade and industry (30.3%, N=91) and healthcare (23%, N=69), as these two areas made up over 50% of those surveyed. Survey respondents from business and marketing amounted to 13% (N=39), and the remaining ten occupational areas listed on the survey totaled under 10%.

Figure 1. Occupational Area Representation of Survey Participants
In addition, the occupational sector of most of the survey completers was management (44%, N=132), followed by post-secondary education representatives (21.7%, N=65) and then labor (21.3%, N=64). Students, former students, and representatives of the K-12 system represented less than 14%.

Figure 2. Sector Representation

As part of the demographic information, respondents were also asked the number of years they had served as members of an advisory committee. Responses ranged from less than a year to 34 years. The most common response was a service of 2 years,
reported by 14% of the respondents (N=42), and the largest number of respondents served between 2 and 6 years (57%, N=170).

![Pie chart showing years of service for current advisory committee members.]

*Figure 3.* Years Serving as Members of Current Advisory Committee

To summarize the demographic information, the largest number of survey respondents worked in management, represented either the trade or healthcare industry, and served on this advisory committee between 2 and 6 years.

**Awareness, Training, and Communication**

To better understand the involvement of advisory committee members in the modularization of curriculum, the survey asked five questions that focused on awareness, training, and within-organization communication about the concept of modularization. In
the survey, modularization was defined as certificate and degree coursework grouped into smaller sets of courses (as individual certificates, for example, which can be linked to other certificates and add up to a degree) that specifically prepared students for discrete jobs leading to their ultimate career and educational goals. The overall responses of this section are outlined in Table 1. The first question asked respondents if they were aware of the concept of modularization, and the majority of respondents indicated at least some level of awareness of that concept. Of the respondents, 38.3% indicated some awareness, 19% reported more than some awareness, and 15.7% indicated that they were fully aware of the concept of modularization, making a total of almost three-fourths of respondents who indicated some level of awareness.
<table>
<thead>
<tr>
<th>Question</th>
<th>1 Never</th>
<th>2 Sometimes</th>
<th>3 Very Often</th>
</tr>
</thead>
<tbody>
<tr>
<td>Are you aware of the concept of modularizing?</td>
<td>20.3%</td>
<td>6.7%</td>
<td>19%</td>
</tr>
<tr>
<td></td>
<td>N=61</td>
<td>N=20</td>
<td>N=57</td>
</tr>
<tr>
<td>How often have you received any information and/or any training in the</td>
<td>45.3%</td>
<td>18.0%</td>
<td>9.7%</td>
</tr>
<tr>
<td>practice of modularizing?</td>
<td>N=136</td>
<td>N=54</td>
<td>N=29</td>
</tr>
<tr>
<td>How often have you suggested ways to break down associate degree</td>
<td>39.7%</td>
<td>18.3%</td>
<td>11.0%</td>
</tr>
<tr>
<td>program into smaller certificates?</td>
<td>N=119</td>
<td>N=55</td>
<td>N=33</td>
</tr>
<tr>
<td>How often have you spoken with colleagues in your field for their</td>
<td>39.3%</td>
<td>22.3%</td>
<td>3.7%</td>
</tr>
<tr>
<td>input regarding breaking down associate degree programs?</td>
<td>N=118</td>
<td>N=67</td>
<td>N=11</td>
</tr>
<tr>
<td>How often have you spoken within your organization regarding job</td>
<td>37.3%</td>
<td>17.7%</td>
<td>14.0%</td>
</tr>
<tr>
<td>possibilities for graduates of the shorter (modularized) program?</td>
<td>N=112</td>
<td>N=53</td>
<td>N=42</td>
</tr>
</tbody>
</table>

The second question in this section asked how often respondents had received any information or any training in the practice of modularization. In contrast to the first question, the largest number of respondents, 45.3%, answered that they had never received information or training, and 18% indicated that they had less than sometimes
received information or training, making well over half the respondents having received almost no information or training regarding the concept of modularizing curriculum.

The next three questions in this section focused on the amount and kinds of communication by advisory committee members regarding modularizing curriculum. The third survey question asked how often advisory committee members suggested ways to break down associate degree programs into smaller certificate programs. The largest number of respondents, 39.7%, answered that they had never suggested ways to break down associate degree programs. Combining that number with the number of respondents who indicated that they had less than sometimes suggested ways to break down associate degree program, over 58% of respondents had, at the most, almost never suggested ways to break down associate degree programs into smaller certificate programs. Respondents who indicated that they sometimes suggested ways to break down associate degree programs into smaller certificates totaled 81, or 27%.

The fourth question in this section asked respondents how often they had spoken with colleagues in their field for input regarding breaking down associate degree programs into smaller certificate programs. Similar to the third question, the largest number of respondents, 39.3%, answered that they had never spoken with colleagues in their field for their input regarding breaking down associate degree programs into smaller certificates, and 22.3% indicated that they did this less than sometimes. Combining these two responses, over 61% of respondents reported having rarely or never spoken with colleagues in their field for input regarding breaking down associate degree programs into smaller certificates. One-fourth of the respondents indicated that they had sometimes
spoken with colleagues in their field for their input regarding breaking down associate degree programs into smaller certificates.

The final question in the awareness, training, and communication section of the survey asked respondents how often they had spoken within their organization regarding job possibilities for graduates of the shorter (modularized) program. Similar to responses to the previous two questions in this section, the largest number of respondents, 37.3%, indicated that they had never spoken within their organization about job possibilities for graduates of the modularized program, and 17.7% reported they had done this rarely or occasionally. Combining these two responses shows that 55% of respondents are involved very little in speaking within their organization about the job possibilities for graduates of the shorter (modularized) program. Also similar to the first two questions in this section, one-fourth of respondents answered sometimes to this question.

The results of the awareness, training, and communication section show that the majority of respondents have some level of awareness of the concept of modularizing. The results also show that, although they are aware, the majority have had little to no information or training in the concept of modularization, and the majority of respondents have never or rarely suggested ways to break down associate degree programs. Further, the majority of respondents have never or rarely communicated within their organization for input in the way programs are broken down and the potential for job possibilities. The answer of very often had the lowest number of responses for all four questions focusing on information/training and communication, averaging 4.5%.
Developed and/or Endorsed

Using a five-point scale ranging from never to very often, the respondents were asked to rate to what extent they assisted in developing and then endorsing the following aspects of modularizing curriculum, as defined by Bragg and Mills (2005): skill sets needed for various jobs, courses for appropriate content, reordered courses in a program, addition or deletion of a course or courses in a program, and measureable outcomes that are assessed (and in some instances certified).

The first question in this section asked the respondents about the type of their involvement specifically as it related to assisting in developing skill sets needed for various jobs. The responses are outlined in Table 2. It appears the majority of advisory committee members have been involved in assisting in the development of skills, as a total of 80.3% of survey respondents indicated that they assisted sometimes, more than sometimes, or very often.

The same question was then asked again, but the involvement level changed to endorsing skill sets needed for various jobs. The responses are outlined in Table 2. The data indicated that the majority of advisory committee members were also involved in endorsing already developed skill sets, as a total of 87% of survey respondents indicated that they endorsed sometimes, more than sometimes, or very often. The largest percentage of respondents, 35.3% (N=106), indicated that they endorsed already developed skill sets needed for various jobs more than sometimes. These results indicate that advisory committees do have involvement in defining skills sets for various jobs,
with the involvement being expressed slightly more by endorsing than by actually assisting.

Table 2.
*Involvement in Defining Skills Sets for Various Jobs*

<table>
<thead>
<tr>
<th></th>
<th>1 Never</th>
<th>2 Sometimes</th>
<th>3 Sometimes</th>
<th>4 Sometimes</th>
<th>5 Very Often</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assisted</td>
<td>12.7%</td>
<td>7%</td>
<td>30.3%</td>
<td>31.7%</td>
<td>18.3%</td>
</tr>
<tr>
<td>N=38</td>
<td>N=21</td>
<td>N=91</td>
<td>N=95</td>
<td>N=55</td>
<td></td>
</tr>
<tr>
<td>Endorsed</td>
<td>8.3%</td>
<td>4.7%</td>
<td>20.7%</td>
<td>35.3%</td>
<td>31%</td>
</tr>
<tr>
<td>N=25</td>
<td>N=14</td>
<td>N=62</td>
<td>N=106</td>
<td>N=93</td>
<td></td>
</tr>
</tbody>
</table>

The second question in this section asked the respondents about the level of their involvement specifically as it related to assisting in developing courses for appropriate content. The responses are outlined in Table 3. The data showed that the majority of advisory committee members were involved in assisting in the development of courses for appropriate content, as a total of 76.7% of survey respondents indicated that they assisted sometimes, more than sometimes, or very often.

And when it came to endorsing such courses, the data also indicated that the majority of advisory committee members were involved in endorsing the already established course content, as a total of 86.0% of survey respondents indicated that they endorsed sometimes, more than sometimes, or very often. The responses are outlined in Table 3. The largest number of respondents indicated that they endorsed already established course for appropriate content more than sometimes. Much as with the skill
sets above, these results indicate that advisory committees do have involvement in developing courses for appropriate content, with the involvement being expressed slightly more by endorsing than by actually assisting.

Table 3.

<table>
<thead>
<tr>
<th></th>
<th>1 Never</th>
<th>2 Sometimes</th>
<th>3 Sometimes</th>
<th>4 Very Often</th>
<th>5 Very Often</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Assisted</strong></td>
<td>14%</td>
<td>9.3%</td>
<td>24.7%</td>
<td>31.7%</td>
<td>20.3%</td>
</tr>
<tr>
<td>N=42</td>
<td>N=28</td>
<td>N=74</td>
<td>N=95</td>
<td>N=61</td>
<td></td>
</tr>
<tr>
<td><strong>Endorsed</strong></td>
<td>9.7%</td>
<td>4.3%</td>
<td>26.3%</td>
<td>32%</td>
<td>27.7%</td>
</tr>
<tr>
<td>N=29</td>
<td>N=13</td>
<td>N=79</td>
<td>N=96</td>
<td>N=83</td>
<td></td>
</tr>
</tbody>
</table>

The next question in this section asked respondents how often they assisted in reordering courses in a program. The responses are outlined in Table 4. In a departure from the previous two questions, half of respondents had never or rarely assisted in reordering courses in a program. Out of all five “assisting” questions in this section, this response had the highest number of never responses at 32.3%. Next, 25.7% of respondents indicated that they sometimes assisted in reordering course in a program, and 24% indicated that they often or very often assisted in reordering courses in a program.

However, when the same question was asked of respondents in regard to endorsing already reordered courses, the results show that a majority of advisory committee members were involved in endorsing the already developed skill sets, with a total of 59% of survey respondents indicating that they endorsed sometimes, more than
sometimes, or very often. The largest number of respondents, 30.3%, indicated that they endorsed already reordered courses sometimes. The responses are outlined in Table 4.

These results show that, while advisory committees may not have as much involvement in assisting with reordering courses, they do have involvement in endorsing already reordered courses.

Table 4.

*Involvement in Reordering Courses in a Program*

<table>
<thead>
<tr>
<th></th>
<th>1 Never</th>
<th>2</th>
<th>3 Sometimes</th>
<th>4</th>
<th>5 Very Often</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assisted</td>
<td>32.3%</td>
<td>17.7%</td>
<td>25.7%</td>
<td>19.3%</td>
<td>5%</td>
</tr>
<tr>
<td></td>
<td>N=97</td>
<td>N=53</td>
<td>N=77</td>
<td>N=58</td>
<td>N=15</td>
</tr>
<tr>
<td>Endorsed</td>
<td>27.7%</td>
<td>13.3%</td>
<td>30.3%</td>
<td>19.7%</td>
<td>9%</td>
</tr>
<tr>
<td></td>
<td>N=83</td>
<td>N=40</td>
<td>N=91</td>
<td>N=59</td>
<td>N=27</td>
</tr>
</tbody>
</table>

The fourth question in this section asked respondents about their level of involvement as it relates specifically to assisting in adding or deleting courses in a program. The responses are outlined in Table 5. It appears the majority of advisory committee members were involved in assisting in the development of skills, as 68.3% of survey respondents indicated that they assisted sometimes, more than sometimes, or very often.

Following the same pattern as above, the same question was asked again of respondents, but the involvement changed to the issue of endorsing already added or deleted courses in a program. The responses are outlined in Table 5. The data indicated
that the majority of advisory committee members were involved in endorsing the already
developed skill sets, as a total of 74.4% of survey respondents indicated that they
endorsed sometimes, more than sometimes, or very often. The largest number of
respondents, 33.0%, indicated that they endorsed added or deleted courses sometimes.
These results indicate that advisory committee members do have involvement in adding
or deleting courses in a program, with the involvement being expressed slightly more by
endorsing than by actually assisting.

Table 5.

Involvement in Adding or Deleting a Course or Courses in a Program

<table>
<thead>
<tr>
<th></th>
<th>1 Never</th>
<th>2 Sometimes</th>
<th>3 Sometimes</th>
<th>4 Very Often</th>
<th>5 Very Often</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assisted</td>
<td>19.3%</td>
<td>12.3%</td>
<td>33.3%</td>
<td>25.3%</td>
<td>9.7%</td>
</tr>
<tr>
<td>N=58</td>
<td>N=37</td>
<td>N=100</td>
<td>N=76</td>
<td>N=29</td>
<td></td>
</tr>
<tr>
<td>Endorsed</td>
<td>16.7%</td>
<td>9.0%</td>
<td>33.0%</td>
<td>28.7%</td>
<td>12.7%</td>
</tr>
<tr>
<td>N=50</td>
<td>N=27</td>
<td>N=99</td>
<td>N=86</td>
<td>N=38</td>
<td></td>
</tr>
</tbody>
</table>

The last question in this section asked respondents to what extent they had
assisted in creating measurable outcomes that are assessed after each module. The
responses are outlined in Table 6. The largest number of respondents (31.7%, N=95)
indicated that they sometimes assisted in creating measurable outcomes. The next
highest response was never at 24.0% (N=72).

Similar to the previous four questions, a similar question was asked, but the
involvement changed to the action of endorsing already created measurable outcomes
that are assessed after each module. The responses are outlined in Table 6. The data indicated that the majority of advisory committee members were involved in endorsing already established measureable outcomes, as a total of 87% of survey respondents indicated that they endorsed sometimes, more than sometimes, or very often. These results indicate that advisory committees do have involvement in creating measurable outcomes in a program, with the involvement being expressed slightly more by endorsing than by actually assisting.

Table 6.

Involvement in Measurable Outcomes Assessed/Certified After Each Module

<table>
<thead>
<tr>
<th></th>
<th>1 Never</th>
<th>2 Sometimes</th>
<th>3 Sometimes</th>
<th>4 Sometimes</th>
<th>5 Very Often</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assisted</td>
<td>24%</td>
<td>15.3%</td>
<td>31.7%</td>
<td>21.3%</td>
<td>7.7%</td>
</tr>
<tr>
<td>N=72</td>
<td>N=46</td>
<td>N=95</td>
<td>N=64</td>
<td>N=23</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>1 Never</th>
<th>2 Sometimes</th>
<th>3 Sometimes</th>
<th>4 Sometimes</th>
<th>5 Very Often</th>
</tr>
</thead>
<tbody>
<tr>
<td>Endorsed</td>
<td>20%</td>
<td>13%</td>
<td>28%</td>
<td>27%</td>
<td>12%</td>
</tr>
<tr>
<td>N=60</td>
<td>N=39</td>
<td>N=84</td>
<td>N=81</td>
<td>N=36</td>
<td></td>
</tr>
</tbody>
</table>

In each of the five questions focusing on the aspects of modularizing curriculum as defined by Bragg and Mills (2005), participants responded that they “endorsed” slightly more often than they “assisted.” These results show that career and technical education advisory committee members’ involvement in modularizing curriculum more often occurs after a program’s curriculum has already been adjusted than before, in the planning stages.
The final question on the survey asked respondents to report their opinion regarding the value that modularization offers students. The responses are outlined in Table 7. Almost all respondents indicated that there is value to modularizing curriculum, as noted by 90.4% of respondents indicating that they feel modularized curriculum offers value to students sometimes, often, or very often.

Table 7.

*Does Modularizing Curriculum Offer Value to Students?*

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Never</td>
<td>3.0%</td>
<td>6.7%</td>
<td>38.0%</td>
<td>33.7%</td>
<td>18.7%</td>
</tr>
<tr>
<td>N=9</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sometimes</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>N=20</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sometimes</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>N=114</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Very Often</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>N=101</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Very Often</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>N=56</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Chapter 5: Discussion and Conclusions

Modularizing curriculum in career and technical education programs in community colleges appears to be a practice that may assist with student retention and completion (Boggs, 2010; Bragg & Mills, 2005; Hess, 2006; Hughes & Karp, 2006; Jenkins, 2003). The modularized curriculum design provides shorter education timelines for completion and employment (Dins, 2005; Hull, 2005; Jacobs & Warford, 2006; Stephens, 2009). Often guidance from employers is suggested to be a critical component, with many of the best and most promising practices suggesting that employer involvement offers valuable information on ways to modularize for both student completion and employment (Stephens, 2009). In community colleges, employers offering input on program design are most often represented by advisory committees, and previous research has not been done to show what type of involvement advisory committee members typically engage in regarding modularizing curriculum. In fact, previous research on curriculum design for career pathways tends to be limited to generalized statements of how employers can be involved on career pathway teams and has not targeted the specific work of modularizing curriculum, nor has it focused on advisory committees’ involvement in this effort. This study approached employer involvement through advisory committees in Oregon and Wisconsin and targeted the specific tasks thought to be part of the modularizing curriculum process.

This chapter presents a discussion of the findings regarding career and technical education advisory committee members’ involvement in modularizing curriculum. Only
advisory committee members who work with programs that have modularized curricula were included in this survey. Organized by possible conclusions gained from data analysis, the discussion explores the insights that have emerged from such analysis, as well as the implications for practice. The chapter concludes with recommendations for future study.

This study was guided by two research questions: (a) what is the involvement of career and technical education advisory committees in modularizing curriculum, and (b) what is the degree to which the specific involvement of advisory committee members has occurred in the various aspects of modularizing? Possible conclusions from this research are described in the subsequent sections.

**Lack of Involvement**

One important conclusion drawn from the survey is the surprising lack of involvement that advisory committees have in breaking down associate degrees into smaller certificates. In fact, the results revealed that over 58% of respondents had never or almost never suggested ways to break down associate degree programs into smaller certificate programs.

The literature clearly articulates that the breaking down of associate degree programs into smaller certificates is at the core of the modularization process, enabling individuals to earn more credentials over a flexible period of time and allowing the students to meet their own timeline needs and to obtain employment more quickly (Jenkins, 2003). Cantu, Garcia, Kozumplik, Larsen, and Nyborg (2011) contended that employers play a primary role in curriculum design and delivery, stating that engaging
employers early in the design process ensures that the career pathways align with industry needs. Studies by Bragg & Mills (2005), Hull (2007), and Jacob & Warford (2006) defined the employer’s role as one of influencing program and curriculum development. Overall, when programs look to modularize, the literature consistently suggested that early employer involvement in curricular conversation is vital to curriculum development and design. In contrast, the results from this study indicated that advisory committees, the groups that community colleges define as representing employer input, did not have involvement in the specific task of breaking down associate degree programs into smaller certificates, also known as modularizing.

One possible reason for this disconnect could be, quite simply, that advisory committee members are not asked to provide input on program modularization because college faculty and administrators consider modularizing curriculum the responsibility of college personnel. This lack of involvement aligns with the feedback from multiple career pathways coordinators in Kentucky and Arkansas who stated that their advisory committee members are not involved in program modularization; indeed, their program faculty singularly decides how associate degree programs will be divided into smaller certificate programs.

There may also be a reluctance to engage advisory committee members too deeply in the relatively new initiative of career pathways modularization, instead keeping them out of conversations until the initiative has been better established. One possible reason for such action could be a desire to protect volunteer advisory committee members from being overwhelmed by a barrage of new initiatives.
Another possible reason for the lack of advisory committee involvement in modularizing curriculum could be the absence of training in or understanding of the concept of modularization. Without knowledge of curriculum modularization, advisory committee members would not know what to recommend or even that it is possible to break down associate degree programs. Over half of the respondents in this survey reported that they had either never or rarely received information or training in the concept of modularization. Conversely, 219 of the 300 respondents had between some and full awareness of the concept of modularization, so the lack of involvement in modularization would not seem to stem from ignorance of the concept.

A fourth reason for this lack of participation could be that, with full advisory committee agendas, the faculty creating the agendas prefer to focus on internship sites, donations, and other more specifically employer-related conversations than those around curriculum development and design.

There could be one final conclusion drawn from the survey regarding the lack of reported involvement of advisory committee members in suggesting ways to break down associate degree programs into smaller certificates: committee members may already have been indirectly involved in this work in terms of their input on details of programs, such as skill sets and course requirements. This appears likely, given survey results that indicated over 80% of respondents had assisted in developing skills sets needed for various jobs, and over 70% had assisted in developing courses for appropriate content.
Awareness Without Information or Training

Although advisory committee members reported that they were aware of the concept of modularizing curriculum, they also responded that they had received little or no information or training about the concept. The results of the survey showed that even though almost three-fourths of respondents had some level of awareness of the concept of modularization, over 63% of respondents had rarely or never received information or training regarding the concept.

However, the literature was clear about the need for information and training when engaging a team of cross-agency partners on career pathways work. According to the literature, all partners should understand the overall picture of developing career pathways, and the training should include information about how an effective career pathway system works. They need to understand that successful career pathways systems depend on how well participant outcomes align with employer needs and that it is paramount to consistently evaluate performance data in order to make course corrections when needed (Cantu et al. 2011, Hull, 2005, Jacobs & Warford, 2006 ). In addition, based on regional accreditation standards, advisory committees must also understand what courses need to be included in a certificate program and what courses need to be included in an associate degree. This information helps to guide the modularization process.

Why then, did over 63% of advisory committee members report that they had never or rarely received information or training regarding breaking down associate degree programs into smaller segments? A rather startling possibility is that advisory committees are not in fact used to suggest ways to break down associate degree programs
into smaller certificates, so the faculty members creating advisory board agendas feel the committee only needs to be made aware that program modularization is taking place. The level of training described by the literature would require a time commitment that already full agendas would find difficult to accommodate. Announcing a program’s modularization on a consent agenda would make the committee aware, thus describing the survey responses, but again, as reflected in the survey results, not truly informed or trained. If any other stakeholder group had been assigned responsibility for program redesign, that group would be given the task of learning about the components of career pathways systems, modularization being one such component.

Less dramatic but equally plausible is the possibility that college faculty and administrators believe they are providing advisory committee members adequate information and training regarding modularization; however, the members themselves do not feel they understand the concept and so reported that they have received little or no information and training. Krause (2000) stated that often advisory committee members do not receive clear expectations or explanations of their roles on advisory committees. Information and training about the topic of modularization may be shared in a “pre-meeting” packet of information sent to advisory committee members in the days leading up to a meeting, but there is a good chance that a busy advisory committee member would only have time to scan the material, or even worse, not look through the items at all. In this case, the advisory committee member would arrive at the meeting with a less complete level or even a nonexistent level of understanding and, in the event of a full agenda, little time for questions or explanations.
Advisory committee members may become aware of the concept of modularizing curriculum through indirect routes, such as college newsletters, websites, or other publications. These publications typically spend only a brief time defining curriculum modularization and much more of the time discussing student outcomes and successes. These publications are often used to exemplify program successes, highlighting a particular student or group of students. If an advisory committee member read the article, he or she would understand modularized curriculum and its relationship to a program but would typically not be given a thorough explanation with all the nuances of modularizing and most certainly would not have an opportunity to be trained in how to actually modularize.

The conclusion suggested in this section, that most advisory committee members reported that they did not receive information or training regarding modularization, provides valuable information for advisory committee chairpersons and other educators, considering that the results demonstrated that, although advisory committee members do have an understanding of the concept of modularization, they have not received information and training in the model, which in all probability impacts their involvement in modularizing curriculum. The study’s recommendation to provide more information and training to advisory committee members may increase their level of understanding and in turn strengthen their ability to participate in breaking down associate degree programs into smaller certificates. Even if advisory committee members are not actually participating in modularizing the curriculum, training would help them be more effective in reviewing and endorsing the work done by faculty. It could also provide more
productive conversations between advisory committee members themselves, as well as within an occupational area, in relation to breaking down degree programs and the resulting job possibilities for graduates of the shorter degree. These conversations could stimulate more ideas regarding additional ways to modularize curriculum.

If indeed advisory committees are not involved in modularizing curriculum, they must, at the very minimum, be brought into the conversation before the smaller certificate programs are approved, granted financial aid eligibility, and, in the end, offered to students. It is important that organizations hiring graduates of the modularized programs have the opportunity to endorse or approve the curriculum changes to ensure there will be jobs after each module. Aside from employers, there are few who can provide this confirmation.

**Endorsing More Than Assisting**

Another conclusion drawn from this study is the discovery that advisory committee members were involved with endorsing more often than assisting when it came to developing each of the various aspects of modularizing curriculum as defined by Bragg and Mills (2005). Of the five tasks listed (creating skill sets needed for various jobs, creating courses for appropriate content, reordering courses in a program, adding or deleting a course or courses in a program, and assessing measurable outcomes), depending on the task, up to 27% of respondents endorsed more than assisted.

Since the early 2000s, experts in career pathways and modularizing curriculum have stated that breaking down associate degree programs into smaller certificates should be driven by employers and that employers are the best group to direct how programs
should be broken down into smaller modules and what potential jobs are at the end of each of the certificate programs (Hull, 2005; Bragg & Mills, 2005; Cantu et al., 2011). To reiterate a previous point, in community colleges employers are typically represented through advisory committees. The literature was mixed when it came to the primary role employers have in career pathways work. Some reports suggested that employers are involved with the initial identification of curriculum and the ways it is modularized (Hull, 2005; Bragg & Mills, 2005, Hughes & Karp, 2006), while others suggested that employers validate already established course redesign work (Cantu et al., 2011; Holzer & Nightingale, 2009).

The first aspect of modularizing curriculum focused on skill sets, and over 80% of respondents answered that they were sometimes to very often involved with developing and/or endorsing skill sets needed for various jobs. The second aspect focused on appropriate content in courses, and 76% of respondents answered that they were sometimes to very often involved with developing and/or endorsing appropriate skill sets needed in creating a strong program. These aspects of modularizing curriculum are important, as they set the framework for how the program could be broken down in ways that allow the students to gain the appropriate skills for the job. Advisory committee engagement in these activities is, therefore, consistent with the literature on career pathways, which stated that validating the skills needed in each course assists with ensuring that training programs teach the skills needed for the profession (Cantu et al., 2011).
The third aspect of modularizing curriculum focused on reordering courses, and this study’s findings showed that advisory committees had somewhat less involvement with reordering courses, as only 47% of respondents answered that they sometimes to very often assisted in reordering courses, and 59% answered that they sometimes to very often endorsed already reordered courses. This suggests that advisory committees were thinking of the curriculum as a whole, as opposed to the sequence of individual courses or concepts that comprise the program. This is important, since thinking about curricula in these smaller components is a mindset consistent with modularization.

The fourth aspect of modularizing curriculum focused on adding and deleting courses, and the findings of this study showed that 68% of advisory committee members sometimes to very often assisted in adding or deleting courses, and 74% of respondents sometimes to very often endorsed the results of course additions or deletions in a program. This also suggests that the thinking of advisory committees is more focused on individual skills than on the grouping or packaging of courses.

The final aspect of modularization focused on providing outcomes that could be measured after completion of each module. This study found that 60% of respondents participated in assisting with creating measurable outcomes, and an even higher percentage (87%) endorsed already established measurable outcomes. This question also showed the largest gap between assisting and endorsing, spanning a 27% difference, which would suggest that advisory committee members see the value of outcomes and could indeed apply those outcomes to smaller certificates within the programs, if provided with the opportunity.
These overall results demonstrate that career and technical education advisory committee members’ involvement in modularizing curriculum more often comes after a program’s curriculum has been adjusted instead of during the curriculum redesign. Advisory committees may not be driving this change; indeed, they may just be responding to what has already been decided.

One possible reason that advisory committees endorse changes more often than assisting in making new ones may be that program faculty members perform the redesign themselves and ask for advisory committee members’ approval after the fact. Federal and state requirements typically ask for an advisory committee to “sign off” on a change, not participate in the actual redesign. It may seem simpler for program faculty to ask the advisory committee members for clearance and uphold the minimum standards of participation. Taking this conclusion one step further, an advisory committee may have never been asked to participate in anything more complex than rubber stamping decisions that have already been made.

Another possible explanation for more advisory committees endorsing than assisting could simply be a factor of time. Advisory committees usually meet a couple of hours once a term, while major program changes can demand hours and hours of work. Advisory committee members simply do not have enough time to devote to this work. Spending valuable advisory committee meeting time in conversations unique to employer input, such as discussing job opportunities, internship sites, and donations, may be considered more vital than curriculum input, given the fact that program faculty already has this expertise.
One further possible explanation for advisory committees acting to endorse rather than assist with the development of modularized programs may be a result of the advisory committee members requesting it themselves. Advisory committee members may feel that making curricular changes is the work of program faculty and staff; instead, they may prefer to make comments or suggestions once changes have been made. This would support their involvement with having input while allowing them to step out of the more detailed and focused conversations of curriculum design, such as financial aid eligibility, the number of courses and program credits allowed, and the flow into another program, as well as possible outside accreditation standards. Advisory committees may feel that the work of understanding the variety of nuances in program design should stay in the hands of program faculty and staff, who are expected to have this knowledge.

**Broader Employer Input**

The results from the survey indicated a lack of internal employer discussion about the topic of modularizing curriculum and its possible impact on program content and graduates. The results from the survey also indicated a lack of discussion about the topic of modularization with advisory committee colleagues outside their organization but in their own field. To be specific, the survey results indicated that over 60% of advisory committee member respondents had never or rarely spoken with colleagues in their field for input regarding breaking down associate degree programs into smaller certificates. The results also indicated that over half of advisory committee member respondents had never or rarely spoken within their own organization regarding job possibilities for graduates of the shorter (modularized) program. The data showed a lack of
communication among colleagues and coworkers in regards to asking for input about what smaller certificate programs could arise from an associate degree program and also about job potential for graduates of the smaller certificate programs.

The literature discussing career and technical education advisory committee input showed that one of the responsibilities of advisory committee members is to represent their organization or industry in the advisory committee meetings. Miller (1987) suggested that advisory committee members base their judgments and suggestions on their expertise in the field and also on the background they bring with them from their organization. An expectation of an advisory committee member is to represent the industry or sector he or she comes from, as well as the organization at which he or she is employed. Cantu et al.,(2011) stated that employers assisting with career pathways efforts bring to the conversation knowledge of occupational vacancies in their organization and the occupational areas that should be part of a career progression, such as modularized curriculum. They also stated that curriculum should only be modularized if there are discrete jobs after each module, as one of the most important reasons to modularize a program is to enable a student to go to work more quickly than if he or she would have attained the full associate degree.

One reason career and technical education advisory committee members may not have conversations about program modularization or the job possibilities for graduates of the shorter program is that the advisory committee members understand their role on the advisory committee as being only one-way communication, where that one way is to provide the program they represent with the feedback it requests. They may consider their
responsibility to be bring information to the program they advise but not take back information to share with other members in their organization or industry, which would create a discussion providing additional input from colleagues. If committee members believe their responsibility on the committee is to share their expertise as it is, committee members may only be giving input based on what they individually know and not seeking additional information from peers. The lack of feeling that this is their responsibility could stem from simply not being asked by the committee chair to participate in conversations in their own organizations.

Because the results of this survey showed that advisory committee members felt modularized curriculum does offer value to students, the lack of conversation would not seem to occur simply because the members do not think the work is of value but perhaps because they do not have a clear enough understanding of what modularizing curriculum is; therefore, they may be uncomfortable or unable to have a productive conversation asking for input from their own organization. Recapping from Chapter 4, 45% of survey respondents answered that they had never received information or training in the practice of modularization, and 18% indicated that they had rarely received information or training, making well over half the respondents having received almost no information or training regarding the concept of modularizing curriculum. Based on the survey results, it is not hard to believe that the lack of conversation comes from the lack of understanding.

Another reason advisory committee members may not have spoken to colleagues in their field for input on modularizing curriculum and job possibilities for graduates of the modularized program could be due to a lack of time to engage in the conversation.
Organizations have become leaner, with each employee having more job responsibilities. For example, in the past ten years in nursing alone, a nurse’s responsibilities have increased (Ward, 2012). One impact of the additional workload is less time in the day to participate in other activities beyond assisting patients. Applying this example to other occupations, there certainly could be a lack of time for advisory committee members to engage in meaningful conversation within their employment and occupational sectors.

This lack of communication or conversation between colleagues within an organization could impact the breadth of knowledge an advisory committee member brings to the advisory committee meetings. In turn, that might limit the potential of advisory committee input when discussing modularizing curriculum. Advisory committee members add value to the career and technical education committees on which they serve when they can fully represent the organizations they come from. Understanding the variety of work, jobs, products, customers, and community relations in an organization helps provide a full picture of the work of that particular company. Most often, a single employee only has a thorough understanding of the job he or she does and perhaps the jobs in his or her particular work group. This means that this single employee understands the skills sets needed to do his or her particular job but often would not have an understanding of the skills sets in jobs outside of his or her immediate division, work group, or team. For example, a dental assistant participating on an advisory committee would be able to share in-depth knowledge of the skills needed in this occupation, but the dental assistant may be less able to participate in conversations about dental office procedures or the dental hygienist’s work, even though the dental assistant could be asked
to participate in conversations about either of the latter subjects. Speaking with colleagues in the dental office would, however, enable this advisory committee member to more thoroughly represent the dental office holistically.

One recommendation from this study is to make sure that advisory committee members are given complete and detailed instructions as to what their work is on the committee. If part of their work is to have conversations within their own organization, they should be told this as part of their advisory committee orientation. If the advisory committee does not have an orientation, one should be developed and made mandatory. This will provide the information and training needed for advisory committee members to participate more fully on the committee.

Another recommendation is to provide each advisory committee member with a way to give anonymous feedback about his or her views on the information and training received as an advisory committee member. Information should be gathered consistently, and changes should be made based on the feedback.

**Does Modularized Curriculum Offer Value To Students?**

According to the results of the survey, 90% of respondents felt that modularizing curriculum adds value to students. The literature clearly articulated the fact that advisory committees play an important role in supporting career and technical education programs. Without their support, the very existence of a particular program may be in jeopardy. The Carl Perkins Act made the role of career and technical education advisory committees part of the foundation on which to build and maintain a program (Carl D. Perkins Vocational and Technical Education Act, 1984). Activities such as enrollment, skills
standards, occupational competencies, and internship sites all fall under the auspices of the advisory committee. Based on this information, having the support of advisory committees is significantly important to the ongoing curriculum modularization work.

There are numerous reasons why having the support of advisory committee members is important. Advisory committees with a positive opinion about modularized curriculum may help support the already modularized programs. In the community college career and technical education area, advisory committee support is critical to the ongoing success of a program. Program success is defined by many as having a high majority of students completing the program, going to work in the program’s field, and retaining the job for at least six months. Financial aid approval and program donations are two examples of actions that must be supported by advisory committees. Because this study showed that 90% of respondents felt modularizing curriculum offers value to students, the process of modularizing joins the former two examples as another critical part of program development and accountability.

The impact of advisory committee members’ support may help push the modularization conversation into the national spotlight. Curriculum modularization is considered by many to be systems change, and systems change most often happens at a higher level than each community college. State and national dialogue about curriculum modularization will help align policies and funding towards ongoing work in curriculum modularization.

The results of this particular survey question elicited questions but no definite answers. There should be concern that 90% of advisory committee members responded
that modularizing curriculum adds value to students, and yet the majority of those members have little or no information and training in the process. What are advisory committee members basing their positive opinion on? Are they basing this judgment on conversations with program graduates or new employees in their organization? Are they being told by program faculty that modularization helps students complete? This opinion question offers interesting information and will be discussed again in the section of this document dealing with recommendations for further research.

Should Advisory Committee Members Be Involved in Modularizing Curriculum?

Surprisingly, during the course of the survey administration, the career pathways and program coordinators from several schools relayed to the researcher that advisory committees are simply not involved in modularizing curriculum, stating instead that faculty are responsible for all curriculum work. This is contrary to the existing literature, which stated that employers and education or training partners must work together to modularize programs that meet student and industry needs (Cantu et al., 2011). The literature went on to report that modularized curriculum without employer input may put students at risk of completing programs that do not teach the skills needed in the particular jobs that the program targets (Bragg & Mills, 2005; Hull, 2007).

One possible reason community colleges ask their faculty to modularize without involving advisory committee members could be because advisory committee members who represent employers may focus too much on their industry’s specific requirements. If an advisory committee is made up of too many individuals from a certain organization, the curriculum being developed could get skewed to represent the needs of the particular
organization and may not be representative of the larger industry needs. Conversely, if an advisory committee is made up of a significantly diverse group of employers representing a diverse set of companies, there is a risk of the curriculum becoming too broad or complicated in an attempt to cover all the topics the employers suggest. However, if faculty takes responsibility for modularizing curriculum, an employer’s direct input can be filtered through the views and knowledge of the faculty. This could provide a more comprehensive view of what the curriculum should look like.

Potential complications of meeting state and regional accrediting standards while looking at ways to break down already established associate degrees into smaller certificates may very well be another possible reason why community college program representatives ask their faculty to modularize and do not ask their advisory committee members to participate. Certificate programs have an abundance of criteria they must follow in order to obtain state approval. For example, in Oregon career pathways certificate programs must follow the following criteria: 1) range from 12 to 108 credits, 2) range from 180 to 1,350 clock hours, 3) relate to an AAS degree or to a larger certificate of completion at that same college, and 4) include all coursework at the collegiate level. Many items in the previous list are details that program faculty would need to know in order to begin curriculum modularization and, most probably, items that most individuals on an advisory committee would not know. Accrediting standards from national agencies provide another layer of detail, and typically advisory committee members do not have or are not asked to have an understanding of these areas.
Another possible reason why advisory committee members may not be asked to participate in program modularization is that program faculty members use the established certificate program criteria to do the modularization themselves and then talk with colleagues at other community colleges for endorsement of the newly modularized program proposal. Speaking with a colleague who has successfully offered a modularized program may offer a level of confidence that advisory committees simply cannot: that the curriculum redesign will help with student completion and employment. Programs from other colleges can provide data about degree persistence and completion that provide a stronger foundation than that of an advisory committee.

**Recommendations for Further Study**

The results of this descriptive study suggest that career and technical education advisory committee members in Oregon and Wisconsin who are part of programs that have modularized curricula have awareness of the concept of curriculum modularization but little involvement in the actual process of breaking down associate degree programs into smaller certificates. This study also shows that these same advisory committee members endorse more than assist with developing the various aspects of modularizing curriculum, such as defining skills sets for various jobs, developing courses for appropriate content, reordering courses in an existing program, adding or deleting courses, and developing measurable outcomes. This study took the first step in describing the advisory committees’ involvement in modularizing curriculum in Oregon and Wisconsin, but there is more research that needs to be done in order to provide true guidance for advisory committee members and career pathways coordinators.
Holzer and Nightgale (2009) stated that curriculum modulation, as part of the career pathways initiative, has not yet been evaluated with any academic rigor, that it is a “promising” practice but not a “proven” practice. Replication of this study in other states that embrace the career pathways initiative would provide a wider-range description of what the advisory committee involvement is in modularizing curriculum. It would also reveal consistency or inconsistency with the results of other states surveyed.

Because of the findings of this study, another survey reaching out to career pathways program coordinators, asking them if there are other stakeholder groups who assist with modularizing curriculum, could potentially illuminate other groups who may be involved in modularizing curriculum. The same instrument as the survey used in this study could be given to the new stakeholder groups defined by the career pathways coordinators as the group actually involved in modularization.

Another suggestion for future research is to look specifically at the effectiveness of advisory committee involvement in modularized curriculum. Are students more successful when a program has been modularized with an advisory committee’s direct assistance or when an advisory committee has simply endorsed what has already been created?

A third area for further research would be to evaluate the specific training elements that impact advisory committee members’ ability to conduct the work of modularization. Examining the specific components that influence their thought process or their ability to think of the profession in logical groupings would assist in curriculum design for the committee itself.
Another area of possible study is to study those colleges that reported that faculty
do all of the modularization without assistance from advisory committees. As discussed
in Chapter 4 and earlier in this chapter, college pathways coordinators in the states of
Kentucky and Arkansas reported that they do not have advisory committees involved in
modularizing curriculum; instead, faculty conducts this activity. Because advisory
committee members at those colleges do not have the opportunity to modularize
curriculum, they were not asked to participate in this study’s survey. Further research
regarding who participates in modularizing curriculum and when and how the industry is
able to give input would be important to study in the future. This information would help
inform those involved in modularizing curriculum about other entities providing input
into the process of breaking down associate degree programs into smaller certificates.

An additional area of potential study would be to use the same survey questions
with one additional item focusing on the respondent’s level of participation on the
advisory committee. This may lead to a greater understanding of how the level of
participation does or does not impact their work on the committee, and if highly active
members behave differently than those who are much less involved.

Finally, another area of possible study is to use the data highlighted from this survey
and cross tabulate it with other aspects of the survey. One suggestion is to compare
responses broken down by the number of years served on an advisory committee, as this
may provide information regarding the impact of longevity. Is a new advisory committee
member more apt to participate in curriculum modularization, or does participation
happen more frequently when one has served a number of years? The same study could be done with sectors and occupations.
References


Ireland, M. A. (1980). *A study of the relationship of lay advisory committee usage and measures of technical occupational program effectiveness in Dallas county community college district.* Doctoral Dissertation. The University of Texas, Austin, TX.


Light, J. (1982). *A practitioner’s guide to using and meeting with advisory groups.* Columbus: Ohio State University, National Center for Research in Vocational Education.


Vu, J. (1999). *Impact of differing relationships between a community college and local industry on a program’s viability*. Doctoral dissertation. Walden University, Minneapolis, MN.


Appendix A

Survey of Advisory Committee Members

For this survey, curriculum modularization is defined as certificate and degree coursework grouped into smaller sets of courses (as individual certificates, for example, which can be linked to other certificates and add up to a degree) and specifically prepares students for discrete jobs leading to their ultimate career and educational goals. Each sub-unit (module) has measurable outcomes that are assessed in their own right.

Which occupational area best represents the advisory committee you serve on?

As an advisory committee member, which sector do you best represent?

How many years have you been a member of this advisory committee?

Are you aware of the concept of modularizing curriculum (see definition above)?

Using the scale below, since joining the advisory committee, how often have you:

- Received any information and/or had any training in the practice of modularizing curriculum?
- Suggested ways to break down associate degree programs into smaller certificate programs?
- Spoken with colleagues in your field for their input regarding breaking down associate degree programs into smaller certificate programs?
- Spoken within your organization regarding job possibilities for graduates of the shorter (modularized) program?
The following are some possible contributions advisory committee members can make in the modularizing process. Using the scale below, during advisory committee meetings, to what extent have you assisted in developing:

<table>
<thead>
<tr>
<th>Contribution</th>
<th>1 Never</th>
<th>2 Sometimes</th>
<th>3</th>
<th>4</th>
<th>5 Very Often</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skill sets needed for various jobs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Courses for appropriate content</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reordered courses in a program</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Addition or deletion of a course or courses in a program</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Measureable outcomes that are assessed (and in some instances certified) after each module</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Using the same parameters as directly above, to what extent have you endorsed:

<table>
<thead>
<tr>
<th>Contribution</th>
<th>1 Never</th>
<th>2 Sometimes</th>
<th>3</th>
<th>4</th>
<th>5 Very Often</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skill sets needed for various jobs</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Courses for appropriate content</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reordered courses in a program</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Addition or deletion of a course or courses in a program</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Measureable outcomes that are assessed (and in some instances certified) after each module</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

In your opinion, does modularizing curriculum offer value to students?

<table>
<thead>
<tr>
<th>Opinion</th>
<th>1 Never</th>
<th>2 Sometimes</th>
<th>3</th>
<th>4</th>
<th>5 Very Often</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
*The categories under the drop menu are: Agriculture and National Resources, Business and Marketing, Communications, Computer Science, Design, Education, Engineering and Agricultural Science, Healthcare, Personal and Consumer Science, Protective Services, Public, Social, Human, and Legal Services, Trade and Industry, and Other (Based on the categories from the National Center for Educational Statistic).

** The categories under this drop menu are: Business/Industry Labor, Business/Industry Management, K-12 Education, Post-Secondary Education, Student /Former Student
Appendix B

Letter to State Leads

Hello Pathway State Leads,

Mimi Maduro was kind enough to share your contact information with me. I am hopeful I have an opportunity to provide you and your state some research data regarding employer involvement in modularizing (chunking) curriculum and I am asking for your assistance.

I will try to be brief in my explanation. My name is Ann Malosh and I am a doctoral student at Oregon State University conducting research about the work of advisory committees. The purpose of my research is to describe the involvement advisory committee members have in modularizing curriculum. Since the emergence of modularizing curriculum in career and technical education programs in community colleges has received substantial attention over the last decade and advisory committees have been tasked with assisting the curriculum modularization process, yet there appears to be little research to describe the involvement career and technical education advisory committees actually have into curriculum modularization this study is important to all those involved in career pathways efforts.

Stephens (2009) writes that five states, Oregon, Washington, Kentucky, Wisconsin and Arkansas, have in place a statewide framework for career pathways and because of the advanced nature of their career pathways work, suggests these state are good candidates for further study. Your state was identified by Stephens and Mimi identified you as the potential state contact for me. This research method chosen for this study is a descriptive survey method and it will focus on community college advisory committee members.

I am requesting your help in guiding me to the colleges involved with career pathways work and more specifically, if possible, to the career and technical education contacts in order for me to request email addresses of their advisory committee members so I can send them a very short (less than 5 minute) survey. The plan is to send this survey link in October.

I am very open to suggestions, cautions, “words of wisdom,” etc. as I try to gather this information from as many advisory committee members as possible.

Thank you for your consideration and I look forward to hearing from you.

Best Regards,

Ann
Appendix C

Letter to Wisconsin

Jayson Chung was kind enough to share your contact information. I have a request of you and I would very much appreciate your help!!

My name is Ann Malosh and I’m a doctoral student at Oregon State University (in addition to my day job as a dean at Linn-Benton Community College in Albany, Oregon), conducting research about the work of advisory committees in curriculum design and the Pathways Initiative.

I am requesting your help in sharing the survey link and explanation (see the letter below) with your career and technical education advisory committee members. The link and explanation are at the end of this email.

In brief, the purpose of my research is to describe the involvement advisory committee members have or do not have in modularizing curriculum. Since the emergence of modularized (chunked) curriculum in career and technical education programs in community colleges, there has been much talk of employer involvement yet there appears to be little research to describe what is actually happening.

In the report, Charting a path: An exploration of the statewide career pathways efforts in Arkansas, Kentucky, Oregon, Washington, and Wisconsin, the author shares that the five states reviewed have a statewide framework already in place for career pathways and, because of the advanced nature of their career pathways work, suggests that these states are good candidates for further study. As you can see, Wisconsin was part of the report and one of five states selected for my research.

Again, I am asking you send the explanation and request below to your career and technical education advisory committee members. Please feel free to contact me with questions or concerns. My phone number is: 541-917-4932 and email is ann.malosh@linnbenton.edu.

Best regards,

Ann
Dear Advisory Committee Member,

My name is Ann Malosh and I am a doctoral student at Oregon State University conducting research about the work of advisory committees. I am also a division dean at Linn-Benton Community College in Albany, Oregon. The purpose of my research is to describe the involvement advisory committee members (such as yourself) have in curriculum design. I would like to invite you to be part of this research study by completing an electronic survey (5 minutes or less) about your involvement in the curriculum development and modularization process. The link is below:


Your participation in the research study is completely voluntary and all responses will be anonymous. I will share the results with your college contacts once the research is completed (sometime during the winter). The survey link will be open until October 31, 2011.

If you have any questions about this research, please feel free to ask. I am available by email ann.malosh@linnbenton.edu or phone 541-917-4932. Thank you for your consideration and time.

Sincerely,

Ann Malosh
Appendix D

IRB Form

Research Proposal Submission Form

Institutional Review Board approval is required whenever a Moraine Park Technical College faculty, staff, or student conducts a research study in which data is collected from human subjects.

Title of Proposal: The involvement of career and technical education advisory committees in modularizing curriculum

Date submitted: 10-21-11

Name(s) of researcher(s): Ann Malosh (Oregon State University)

Faculty Research Advisor (if researchers are students): Dr. Sam Stern (Oregon State University)

Intended start date: immediately

Intended finish date: November 14, 2011

Defining Level of Review Required:

Please respond "yes" or "no" to each of the following four questions, and then refer to the decision table below to decide the level of IRB review to seek:

1. Does your proposed research involve participants who are entitled to special protection? (i.e. Pregnant mothers, children in school, minors, prisoners, handicapped or mentally disabled persons, economically disadvantaged persons, or educationally disadvantaged persons )

   Yes ☐  No ☒

2. Does your proposed research involve the collection of potentially sensitive information about your participants? (For example, financial standing, potentially criminal involvement, misuse of prescription drugs, etc.)

   Yes ☐  No ☒

3. Does your proposed research involve more than minimal risk to your

   Yes ☐  No ☒
participants? (Minimal risk research poses a probability and magnitude of harm or discomfort no greater than the harm or discomfort encountered in daily life, or during performance of routine physical or psychological examination or tests. For example, raising anxiety levels, phlebotomy, stress testing, etc.)

4. Does your proposed research involve the intentional deception of your participants? (For example, will your participants be told untruths?)

Decision Table

Based on your answers to the above questions, determine the level of IRB review to seek, and check the appropriate level below.

<table>
<thead>
<tr>
<th>Level of Review (check one)</th>
<th>Pattern of answers to “Defining Level of Review Required”</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimal ☒</td>
<td>“No” to all four questions</td>
<td>You may proceed upon receipt of a letter of approval.</td>
</tr>
<tr>
<td>Limited ☒</td>
<td>“Yes” to Q1; “No” to all others</td>
<td>You may proceed upon receipt of a letter of approval.</td>
</tr>
<tr>
<td>Full Review ☒</td>
<td>“Yes” to any or all of Q 2, 3, or 4</td>
<td>You should take care to fully address in this application the need for your research to utilize your proposed methodology. <strong>You must await the receipt of the letter of approval before proceeding.</strong></td>
</tr>
</tbody>
</table>

Required Documentation

Please ensure that the following required documentation is appended to your application, in this order. **Incomplete applications will not be approved.**

1 **Introduction:** A short description of the proposed study.
   . A description would typically (a) state the purpose of the study, (b) describe the intended participants, and (c) state any benefits of the study.

2 **Data Collection:** A thorough description of proposed data collection process.
   . This would typically cover (a) sample selection, (b) incentives for involvement (if any), and (c) any special aspects of the proposed collection process.
3 **Procedures:** A copy of any researcher-designed data collection instrument(s) (For example, surveys, interview protocols, focus group prompts, etc. It is not necessary to enclose copies of well-known standardized tests.)

4 **Subject Protection:** A statement of how the privacy (and, if relevant, the health) of the participants will be protected.

5 **Informed Consent:** A copy of the informed consent document that will be used with all the participants must be included for research involving more than minimal risks to subjects. Elements of the informed consent document include statements of:
   - Voluntary participation.
   - Participant’s rights to withdraw, ask questions, obtain results, and remain anonymous.
   - Research purpose and procedures.
   - Risks and benefits of the research.
   - The means of contacting the researcher (name, telephone number, e-mail address) must be included, and a space for the date and signature of the participant is required.

An informed consent document does not need to be included for research involving no more than minimal risks to subjects, although details on how subjects’ rights and welfare will be protected need to be addressed.

6 **For Full Board Review Only:** If you have checked the box on the Decision Table for Full Board Review you should take care to fully address in this application the need for your research to utilize your proposed methodology.