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Basic Skills Literature Review

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Basic skills education and its place in the American educational system have undergone a series of transformations since its development in the early 19th century. The need for basic skills education—also known as remedial or developmental education—became evident when academically under-prepared students began to enroll in colleges and universities (Arendale, 2005). Demand for basic skills also increased in vocational and job training programs, particularly because of the need to provide students with the basic skills to begin job-specific instruction (Grubb & Kalman, 1994).

Policymakers and practitioners define "basic skills" as foundational skills in subjects such as reading, writing and mathematics. According to a recent report (California Community Colleges, 2007) study and learning skills, and English as a Second Language (ESL) courses, have also been categorized as basic skills courses. Basic skills are viewed as critical to the completion of college-level courses, as well as necessary for personal achievement and advancement (Attewell, Lavin, Domina, & Levey, 2006; Perin, 2005). Policy emphases have viewed Basic Skills or Developmental Education as providing students with the academic skills necessary to cope with college-level academic work and complete a program or credential such as a college degree (Kozeracki, 2005).

Historically, students who were perceived to lack the basic skills necessary to persist in college-level coursework were termed "remedial" or "basic skills" students (Moss & Yeaton, 2006, p. 216). A deficit model of education—whereby instructors sought to provide students with the skills and knowledge they lacked—was put into place at many institutions (Arendale, 2005; Boylan, Bonham, & White, 1999). As theories of student development and retention became more prominent in education, however, deficit models of remedial education began to be replaced by those informed by developmental theories and these emphasized students' independence, encouraging students to take greater responsibility for their own learning (Wambach, Brothen, & Dikel, 2000). The developmental education approach used a more "multidimensional conceptualization, often implementing remediation as only one facet of assisting students" (Moss & Yeaton, 2006, p. 216). Developmental approaches take into consideration the wide range of factors and needs in students' lives, such as their socio-economic and demographic background, and social barriers to academic attainment, as well as students' academic under-preparation (Boylan et al.; Grubb, 2001; Kozeracki, 2005).

While students at both four-year institutions and community colleges enroll in remedial coursework, the majority of basic

skills education students are concentrated in community colleges (National Center for Education Statistics, 2003). Compared to all other institution types, community colleges offer, on average, a greater number of remedial courses (National Center for Education Statistics). Policymakers look to community colleges to be the main, if not sole, providers of basic skills education, arguing that they are the most cost-efficient and appropriate places to provide this instruction (Bettinger & Long, 2005). Increasingly, states have prevented or discouraged four-year institutions from offering remedial courses. In 2002, there were at least ten states preventing or discouraging four-year institutions from offering basic skills courses (Jenkins & Boswell, 2002); and in 2007, approximately 22 states or higher education systems had reduced or eliminated remedial education (Parker, 2007). As states continue to move towards concentrating basic skills courses in their community college systems the number of community college students who will require at least some remediation is expected to increase (Moss & Yeaton, 2006).

Basic skills education has become an important component in fostering student attainment particularly for community college students. This literature review provides an overview of basic skills education, explores some of the challenges and issues it faces within the community college setting, and highlights promising practices from the research literature that serve to enhance student attainment in community colleges. This review of research also explores important components and considerations for developing basic skills programs and identifies from the literature promising practices pertaining to how students can be identified, assessed, and supported effectively in basic skills programs.

Before discussing these promising practices, the review begins with a discussion of some of the challenges and issues facing community college basic skills programs.

Challenges and Issues in Community College Basic Skills Education

This discussion of the challenges and issues facing basic skills education is organized by the following issues: the lack of a unified framework for providing basic skills education; student issues; faculty issues; and challenges in assessing and evaluating basic skills programs and the students enrolled in these programs (Kozeracki, 2005; Perin, 2005). Each will each be discussed in the following section.

Lack of a Unified Framework for Providing Basic Skills Education

Of the numerous challenges faced by basic skills educators, the lack of a unified framework for providing, assessing, and evaluating basic skills programs is arguably one of the most challenging issues of all (Grubb, 2001; Moss & Yeaton, 2006). Community college basic skills programs are varied and diverse, and a program in place at one institution may not bear any resemblance to a program housed at another college in the same state or even the same district (Grubb & Cox, 2005; Oudenhoven, 2002). While researchers found that student outcomes in basic skills courses are frequently much lower than the normative expectations of policymakers or practitioners, no one knows for certain whether poor outcomes are due to the specific programmatic or curricular structure, the student services offered (or not offered), to instruction, or to a specific campus culture or attitudes toward basic skills education (California Community Colleges, 2007; Grubb; Parker, 2007).

Additionally, community colleges may implement basic skills programs or courses without identifying expected benefits or outcomes, and without developing methods for assessing or evaluating how well the basic skills program helps students progress through an academic curriculum or meet their academic and career goals (Moss & Yeaton, 2006). Although community college faculty and administrators may express a preference for a developmental theory of basic skills preparation, in practice basic skills courses may simply take shape as "skill and drill" sessions that attempt to provide students with the reading, writing, and mathematical skills and knowledge they should have gained in grades 5-12 (Attewell et al., 2006; Grubb, 2001; Oudenhoven, 2002).

Student Issues

Community college faculty often differentiate between two groups of basic skills students: those from poor or ineffective high schools who did not receive sufficient instruction, and those who had access to adequate instruction in high school but who did not pay attention (Kozeracki & Brooks, 2006). In actuality, however, students enrolled in basic skills courses are diverse in age, in their social, socio-economic, academic, and ethnic backgrounds, and may have widely divergent learning preferences, goals, and needs (Hardin, 1998). Like the community college population at large, developmental education students are often students who have other commitments and responsibilities (Bailey & Weininger, 2002). Many of the students who require remedial courses are recent high school graduates; others are adult learners who have been out of school for sometime; and others are immigrants or refugees (Jenkins & Boswell, 2002). Some researchers found that an

increasing number of students were advised to enroll in pre-college ESL courses as an alternative to enrolling in basic skills classes in order to avoid the stigma associated with ESL (Grubb & Cox, 2005; Harklau, Siegal, & Losey, 1999).

Similarly, several researchers discuss the negative stigma attached to students' classification as "remedial" (Parker, 2007). Students' placement in basic skills programs, regardless of how useful they might be for their academic performance, may have a negative effect on their self-esteem and morale (Levin, 2007; Moss & Yeaton, 2006). Students may resent their placement in developmental courses, especially if they received good grades in high school (Maxwell & Kazlauskas, 1992). Researchers found that some students in developmental courses perceived themselves as "less than" those students who were able to enroll directly in college-level courses (Moss & Yeaton) and experienced frustration when they were required to take several basic skills courses before they were allowed to enroll in college-level classes (Attewell et al., 2006). This frustration, as well as the time it takes to reach college-level proficiency, may help to explain Adelman's (2005) finding that students who required remediation were less likely to reach their degree objectives.

In addition to these social challenges, basic education students also face financial obstacles. Although limited access to financial aid is not unique to the basic skills student, there are some additional financial barriers to continuing their education. For example, Pell Grants and other such funding mechanisms have required that students enroll in a specific number of credit bearing units in order to be eligible for financial support; but many remedial courses are not offered for

credit (California Community Colleges, 2007). Moreover, researchers found that a number of basic skills students were unaware of financial aid policies and procedures, suggesting that if basic skills students were informed of and received the same access to federal financial aid as their peers in credit-bearing classes, they would exhibit higher retention rates (California Community Colleges).

Faculty Issues

Developmental or basic education programs also face several challenges related to faculty. Indeed, students in basic skills classes frequently complain that they are asked to participate in non-engaging classroom activities, such as "skills and drills" approaches to learning mathematics and English. Faculty receive the blame for this instruction (Grubb, 2001, p. 8). Bundy (2000) opines that faculty have a responsibility to know basic skills pedagogy. "This does not require that everyone be an expert in teaching reading, writing, or math, but it does mean that teachers should be trained in the fundamentals of teaching these essentials" (p. 44).

Notwithstanding this prescription, however, faculty in basic skills courses may be new or part-time instructors and under or only moderately equipped with the training in pedagogy or curricular design that can be applied effectively in the developmental classroom (Levin, Kater, & Wagoner, 2006; Perin, 2005). Related to faculty preparation is the practice of community college academic leaders to hire new instructors with masters or doctoral degrees in prestigious disciplines such as literature rather than an individual with a graduate degree in developmental education or pedagogy (Kozeracki, 2005).

Although these new faculty may provide excellent instruction in the discipline in which they have been trained, according to Kozeracki many have not been exposed to specific basic skills pedagogy, developmental curriculum development, and techniques for identifying and teaching students with learning disabilities, which are all valuable skills that can be used to improve student learning. In spite of the need to provide training and professional development for faculty who teach remedial courses, because of insufficient funding, few community colleges host regular professional development seminars, and even fewer community colleges pay for their developmental instructors to attend conferences focused on improving basic skills education (Kozeracki, 2005).

An endemic condition and thus a challenge facing basic skills programs in community colleges according to scholars (Levin, Kater, & Wagoner, 2006; Roueche, Roueche, & Milliron, 1996) is the high percentage of instructors who have part-time faculty appointments. Part-time faculty are viewed as less engaged or invested in a particular college's basic skills program than full-time faculty (Grubb, 2001; Kozeracki, 2005; Roueche et al.), which can affect basic skills students negatively who may become discouraged by a slow rate of progress in basic skills courses and frustrated with non-engaging classroom activities, while at the same time having little access to additional help from instructors (Kozeracki). Furthermore, a heavy reliance on part-time faculty was also found to decrease a basic skills program's ability to implement innovative instructional practices, as part-time faculty typically are not compensated or rewarded for such work, and are provided

with few opportunities for professional development.

Assessment and Evaluation Challenges

The ways in which community college students are assessed and placed are surrounded by considerable debate (Perin, 2005). Assessment examinations are accepted and utilized widely on community college campuses, but the types of assessments vary considerably from institution to institution. Furthermore, scholars, practitioners, and policymakers cannot agree on the best way to assess and place incoming students. In some cases, students may be advanced to a higher level before they have acquired the skills necessary to succeed (Grubb, 2001).

The evaluation of basic skills education for effectiveness is another major challenge for community colleges. As Perin (2005) pointed out, to be effective, evaluations of community college basic skills programs must be systemic and continuous; they must be reported to stakeholders both inside and outside the college; and they must inform decision-making. However, few community colleges evaluate their developmental education programs in this manner. Furthermore, while student feedback has been found to be essential in evaluating and improving basic skills education, community colleges often do not have the capacity to assess, measure, and retrieve feedback from students on their views and experiences in basic skills courses (Higbee, Arendale, & Lundell, 2005).

There is a lack of consensus among practitioners about ideal student outcomes in basic skills education (Bettinger & Long, 2005; Malnarich, 2005). Should basic skills programs be evaluated by the number or

percentage of students passing one course and moving onto the next level, by the percentage of students moving on to college-level academic or vocational courses, or by the percentage of students who started at a basic skills level who eventually transfer or earn a degree? Alternately, should basic skills programs take into account the specific educational and socio-economic barriers that students must overcome when stakeholders assess a program's effectiveness (Higbee et al., 2005)? These are all important considerations when evaluating and assessing basic skills education programs.

Promising Practices in Community College Basic Skills Education

Because basic skills and developmental education serve a large and diverse student population whose needs are divergent leading to concerns about appropriate and effective practice (Hardin, 1998; Oudenhoven, 2002), a variety of practices have surfaced that reputedly lead to improved student learning outcomes. As scholars (Boylan & Saxon, 1998; Roueche & Roueche, 1999) posit, effective basic skills programs engage in supportive organizational, instructional, and student support activities and practices. Several of these practices and prescriptions are described in the following sections.

Clear Mission, Philosophy, and Goals of Basic Skills Education

The general consensus of practitioners and scholars is that a clearly defined and well-articulated mission statement helps distinguish and guide the critical activities of a community college (Bogart, 1994; Boggs, 1995; Roueche, Baker, & Rose, 1987). A mission statement can help foster a culture of support for basic skills

education at the institution (Ableman & Dalessandro, 2008). This mission statement, it is argued, should be widely disseminated across the campus and easily accessible to faculty, administrators, and staff so that they have a clear understanding of the institution's philosophical orientation toward basic skills instruction (Oudenhoven, 2002). Embedded in mission statements are values and priorities of programs, including basic skills, which can facilitate the navigation of institutional priorities (McPhail & McPhail, 2006). At the same time, however, a mission statement that supports basic skills instruction by itself is not enough. It is also important that community college leaders support the statement with their actions (Roueche & Roueche, 1999). Examples of positive and effective leadership aligned with the goals of supporting basic skills education at a college include recruiting and hiring well-qualified faculty and staff and providing opportunities for continued professional training and development (Roueche & Roueche).

Centralized and Decentralized Approaches to Basic Skills Instruction

Scholars continue to debate whether basic skills courses should be provided through a centralized or stand-alone administrative structure, through a centralized or mainstreamed model, or through various departments on a community college campus (Boylan et al., 1999; Dale & Drake, 2005; Quirk, 2005; Roueche, Roueche, & Ely, 2001). Since there are both benefits and drawbacks of delivering basic skills education through these two approaches, the way in which community colleges design their basic skills education programs is an important consideration.

Quirk (2005) described some of the main differences between centralized and decentralized programs. Centralized programs house basic skills education in a specific department on campus and assign responsibility for teaching pre-college academic courses to a specific group of administrators and faculty members. Centralized programs may provide their own student support services, or they may send students to outside counseling, tutoring, or other campus services. Centralized programs provide students with a specific location at the community college where they can take courses, seek academic advice or counseling, and participate in other types of student support services or groups. It can be an effective approach because basic skills faculty are hired specifically to teach in that department (as opposed to disciplinary faculty who are asked to teach developmental courses), and as such are more likely to have a vested interest in their courses and students (Perin, 2005).

Decentralized programs, on the other hand, seek to embed basic skills courses into various departments on a campus, crossing disciplinary lines and support service areas. They may be organized, for example, as a "developmental learning community" where faculty are not designated as developmental instructors as they would be in the centralized approach just discussed (Raftery, 2005, p. 64). Rather, faculty come from various departments (e.g., English, math, reading) who teach both developmental and higher-level courses (Raftery). Decentralized programs also take developmental theory—in particular theories about students' various learning styles—into account when designing pedagogical practices and curricula (Boylan, Bonham, & Tafari, 2005). For example, as several researchers pointed out, basic skills

courses and programs are particularly effective when they account for the diversity of the student population and use pedagogical techniques that are sensitive and specific to the needs of this population (Boylan et al., 1999; Casazza & Silverman, 1996; Maxwell, 1997). In addition, because of their diffusion across campus, basic skills instructors and staff are more likely to come into contact with students who need to augment their basic skills but do not sign up for developmental coursework on their own (Bettinger & Long, 2005). Moreover, the decentralized model has allowed students to enroll concurrently in credit and basic skills courses, especially when courses are complementary to one another. Thus, students can connect basic skills acquired in one class to content learned in other credit-bearing courses (Higbee et al., 2005; Oudenhoven, 2002).

There are also a few drawbacks to both centralized and decentralized approaches to note. Critics of centralized basic skills programs caution that centralized departments run the risk of alienating developmental students and faculty from the campus community, making basic skills courses appear to not be "real education" (Grubb, 2001, p. 4). A centralized model may also restrict communication between developmental and other faculty, especially at larger community colleges (Levin, 2007). Finally, a centralized model may push basic skills courses to the periphery of a college, which has in some cases caused these courses to be marginalized by those who would prefer that the institution focus more energy and resources on educating students enrolled in college-level or transferable academic and vocational programs (Grubb; Kozeracki, 2005). The main challenge to utilizing a decentralized approach is that not all faculty and student services personnel agree about

the importance of providing seamless, collaborative basic skills instruction (Kisker & Outcalt, 2005; Kozeracki, 2005). Kozeracki concluded that decentralized basic education models may not work well in colleges that do not reinforce the importance of developmental education and intra-institutional collaboration in their mission statements.

Cross-Campus Collaboration

Whether an institution uses a centralized or decentralized approach for basic skills education, scholars argue that cross-campus collaboration is a necessary consideration in the development of effective basic skills programs. Providing campus members with a clearly defined set of guiding principles that cut across departments, units, and disciplines encourages collaboration and the campus wide respect for the principles and goals of basic skills education (Roueche & Baker, 1983). Scholars also note the importance of senior-level administrators' promotion and support for collaborative projects since they have the ability to implement change and institute a reward structure (Roueche & Baker; Roueche & Roueche, 1999).

One method of encouraging collaboration includes the creation of campus networks among basic skills faculty, administrators, and support services personnel (Boylan & Saxon, 1998). Formal networks, such as collaborative basic skills committees, allow faculty, counselors, and other support personnel to understand what is or will be expected of basic skills students in other areas of their academic life. Counselors have an opportunity to inform instructors of the academic and life challenges faced by the majority of basic skills

students, and faculty and administrators can strategize collectively about how to improve basic skills programs and instruction (Stein, 2005).

Comprehensive Faculty and Staff Development and Training

Although community college instructors are likely to be well-qualified in their discipline and likely to understand the theories that guide their disciplines, instructors who teach developmental or pre-college classes often admit to lacking the training in relevant pedagogy and student related issues. They experience few professional development opportunities to learn more about developmental education pedagogy (Higbee, Arendale, & Lundell, 2005). Thus, according to practitioners, it is important for community colleges to provide comprehensive faculty and staff the development opportunities in order to meet the needs of students enrolled in basic skills programs (Casazza & Silverman, 1996; Maxwell, 1997).

Of course, hiring basic skills faculty who have a background in or have undergone training in developmental education partly reduces the need for professional development in this area, but even those faculty whose graduate coursework included developmental education pedagogy can benefit from regular in-service training sessions and opportunities to expand their knowledge of basic skills students and instructional practices. Furthermore, it is argued that providing faculty with opportunities to expand and build upon their knowledge in these areas can lead to improved retention rates and enhanced student performance (Casazza & Silverman, 1996; Maxwell, 1997). It is also

recommended that colleges offer professional development opportunities in basic skills to other members of the campus community (e.g., student support staff), not just to faculty teaching developmental courses. Boylan, Bliss, and Bonham (1997) found that when support staff and administrators participate in basic skills training programs there is a noted improvement in overall student achievement.

In addition to specific pedagogical training for use in developmental classes, Stein (2005) advocated professional development in cultural sensitivity training to help bridge the gap between basic skills instructors and their students. Developmental faculty are more likely to be Caucasian, while basic skills students are often racial or ethnic minorities who have not been socialized to institutional protocols (Kisker & Outcalt, 2005; Roueche & Roueche, 1994; Stein). Because cultural insensitivity can have a deleterious effect upon a student's academic and personal development, the implementation of culturally sensitive practices (learned through in-service training or professional development seminars) is regarded as a best practice in basic skills education (California Community Colleges, 2007).

Appropriate Assessment and Placement of Students

Several researchers note the importance of accurate student assessment and placement as an effective practice for basic skills education (Boylan et al., 1999; Roueche & Roueche, 1994). Some community colleges and community college systems require that students take placement examinations in order to determine whether their placement in either college-level classes

or remedial courses, and others use "subjective assessment" to place their students (Perin, 2005, p. 30).

Both practitioners and scholars argue that ensuring appropriate assessment and placement of incoming students is critical to improving basic skills instruction at community colleges. Academic advising helps incoming students clearly define their educational goals and develop a plan to achieve those goals (Dale & Drake, 2005). Appropriate academic advising and educational planning have been found to be a significant component in moving students along the basic skills sequences and in the pursuit of their academic goals (Contra Costa Community College District, 2001; Dale & Drake, 2005).

Jarrell (2004) found that orientation programs provide basic skills education students with useful programmatic information and can help students acclimate to the campus culture and environment. Through orientation programs, the campus and its components are broken up into smaller, more easily understood pieces of information that are less intimidating for students. Particularly for the students whose academic progress and attainment are most "at-risk," orientations contribute to student attainment and retention by a support network that counteracts negative stereotypes associated with basic skills education and reinforces the college's commitment to help students achieve their educational aspirations (Boylan et al., 1999).

There is some debate about whether or not to mandate assessment and placement of incoming community college students (Moss & Yeaton, 2006; Oudenhoven, 2002). Yet, several researchers posit that mandatory

assessment prior to enrollment and placement in specified courses is important for identifying students who require basic skills instruction and for ensuring that students enroll at the levels appropriate to their skills and levels of preparation (Boylan et al., 1999; Roueche & Roueche, 1994). Nonetheless, this conclusion is somewhat controversial. Although some researchers found that enrollment in basic skills courses is positively correlated to higher grade point averages, better retention rates, and success in subsequent classes (Boylan et al.; Contra Costa Community College District, 2001), others argue that the amount of remediation required is inversely related to a student's chances of eventually attaining a degree or certificate or transferring to a four-year institution (Adelman, 2005; Attewell et al., 2006). These scholars thus argue against mandatory assessment and placement. Although the question of whether or not assessment and placement should be mandatory is under debate, nearly all practitioners concur that proper assessment and placement of students in appropriate courses is essential to students' success or educational attainment. As Kozeracki and Brooks (2006) explain, because the majority of students take basic skills courses as "an initial step on a path elsewhere… students' success should be measured by their ability to move from developmental courses to college-level courses and then to achieve success in transfer or vocational programs of study" (p. 63)

Comprehensive Program Assessment and Evaluation

For both practitioners and scholars, assessment of basic skills programs and courses is a critical element in developing and improving effective practices (Higbee et al.,

2005; Roueche et al., 2001). Program assessment and evaluation can occur in the context of the entire program, by assessing the classroom practices of basic skills faculty, by reviewing changes in students' attitudes towards higher education, or by measuring their achievement levels (Boylan et al., 1999; McPhail & McPhail, 2006). The evaluation of classroom practices is especially beneficial to community college faculty, as it can provide useful information about how instructors can augment their teaching. If the results are widely distributed, these can inform policies and practices at both the classroom and administrative levels. Assessment and evaluation of basic skills programs can also be extended to include a review of the collaborative efforts with various departments and other segments of higher education (California Community Colleges, 2007).

According to scholars, assessment efforts should begin with a review of program or course goals and objectives, followed by the adoption of measures that can determine how well a program or course achieves these goals (Oudenhoven, 2002). It is also important to pay attention to how well a campus addresses the academic, social, and economic barriers faced by the majority of basic skills students in order to assess the overall effectiveness of a basic skills program. Basic skills programs, it is argued, should be assessed regularly and systematically so that progress can be monitored and programs altered or adjusted as necessary to remain focused on stated goals (Boylan et al., 1999).

A primary concern during the basic skills program evaluation process is the development of effective tools to measure student outcomes. In order for the results of an assessment to have a salient effect on a

program's practices and processes, assessment methodology should assess the various aspects of the program accurately (Grubb, 2001). Because basic skills programs and courses vary from campus to campus, there is no one particular method appropriate for all institutions. Thus, practitioners are cautioned to review relevant research and practitioner reports in order to develop evaluation methods that are sound and will yield useful results (Perin, 2005). Moss and Yeaton (2006) suggest that appropriate evaluation models include measurements of the degree to which students are prepared for college-level courses, such as their pass-fail rates in developmental education, students' time to completion, lack of completion, and percentage of completion. Kozeracki and Brooks (2006) support these recommendations yet argue for the inclusion of measurements that assess the overall magnitude and effect of a program on a community college campus.

According to researchers it is also essential to communicate results broadly and clearly to faculty, administrators, and staff once assessments and evaluations have been completed (Boylan et al., 1999; Dale & Drake, 2005). Communicating assessment and evaluation results may help to create a sense of ownership among those who are directly involved in the program, provide an avenue for feedback, and allow for the ongoing monitoring and adjusting of pedagogy, practices, and processes. Furthermore, sharing assessment and evaluation results reaffirms the notion that collective responsibility for basic skills students and courses is necessary for student attainment (Boylan et al., 1999; Dale & Drake, 2005). In sum, as Roueche et al. (2001) pointed out, a key factor in developing successful basic skills programs is the regular assessment of

the program, the implementation of accountability practices based on assessment results, and the sharing of findings both internally and externally. At a time when accountability is especially important, regular assessments can guide basic skills programs in their achievement and reporting of measurable rates of achievement.

Conclusions

The area commonly referred to as basic skills education, also known also as developmental or remedial education, was long ignored but is now receiving substantial attention both in the literature and in practice, and shows no signs of diminishing its presence on the community college campus (Parker, 2007). As long as community colleges serve as the fundamental pathway to a baccalaureate degree for under prepared students and as a critical training ground for students seeking job skills development (Boylan et al., 1999) they will be the primary provider of developmental education (McCabe, 2000). That is, basic skills within the community college context is sustained by the mission of open access—access to further education and access to employment. Basic skills as an end itself—such as Adult High School and GED, literacy, ESL, and the like—has neither been rationalized by institutions to the extent that basic skills is a sufficient stand alone component of community colleges nor examined by scholarship to determine either its merits or its place in the community college mission.

While this was not an exhaustive review of all the promising practices available to basic skills programs, this literature review offers insights on how institutions may improve support and collaboration for basic skills education. Nonetheless, additional research is needed to understand ways that basic skills education can foster student learning and achievement. For example, colleges and universities' use of advanced technology in delivering basic skills courses has increased over the past decade (National Center for Education Statistics, 2003). This technology is increasingly used as instructional tools for delivering remedial reading, writing, and mathematics courses. Additional research is needed to explore how technology can enhance the development and delivery of basic skills education.

The challenges faced by community colleges and their basic skills programs in meeting the expectations and needs of multiple constituents—students, policy-makers, governments, communities, business and industry, universities, and other internal college program areas—are often ignored in the scholarly literature while the factors that impede effective programs, such as funding and professional development of faculty, are not. Some recommendations and promising practices for improving basic skills—such as mandatory assessment and placement—may prove to be politically unpalatable or untenable on the one hand but necessary on the other given the large numbers of students relying upon developmental and basic skills education.

References

Adelman, C. (2005). *Moving into town—and moving on: The community college in the lives of traditional–age students.* Washington, DC: U.S. Department of Education.

Arendale, D. (2005). Terms of endearment: Words that define and guide developmental education. *Journal of*

College Reading and Learning, 35(2), 66-82.

Attewell, P., Lavin, D., Domina, T., & Levey, T. (2006). New evidence on college remediation. *Journal of Higher Education*, *77*(5), 886-924.

Bailey, T., & Weininger, E.B. (2002). Performance, graduation, and transfer of immigrants and natives in City University of New York community colleges. *Educational Evaluation and Policy Analysis, 24*(4), 359-377.

Bettinger, E.P., & Long, B.T. (2005). Remediation at the community college: Student participation and outcomes. In C.A. Kozeracki (Ed.), *Responding to the challenges of developmental education. New Directions for Community Colleges*, no. 129 (pp. 17-26). San Francisco: Jossey-Bass.

Bogart, Q. (1994). The community college mission. In G. Baker (Ed.), *A handbook on the community college in America* (pp. 60-73). Westport, CT: Greenwood Press.

Boggs, G.R. (1995). The president and the executive leadership team. In G.A. Baker (Ed.). *Team building for quality: Transitions in the American community college* (pp. 63-77). Washington, DC: American Association of Community Colleges.

Boylan, H., Bliss, L., & Bonham, B. (1997). Program components and their relationship to student success. *Journal of Developmental Education, 20*(3), 2-8.

Boylan, H. R., Bonham, B. S., & White, S. R. (1999). Developmental and remedial education in postsecondary education. In G. H. Gaither, (Ed.), *Changing general education curriculum. New Directions for higher education,* no. 108 (pp. 87-101). San Francisco: Jossey-Bass.

Boylan, H. R., Bonham, B. S., & Tafari, G. N. (2005). Evaluating the outcomes of developmental education. In G.H. Gaither (Ed.), *Minority retention: What works?. New Directions for institutional research,* no. 125 (pp. 59-72). San Francisco: Jossey-Bass.

Boylan, H., & Saxon, D. (1998). *An evaluation of developmental education in Texas public colleges and universities.* Austin, TX: Texas Higher Education Coordinating Board.

Bundy, A. (2000). Basic skills problems in community colleges and how to resolve them. *Change, 32*(3), p. 44 - 47.

California Community Colleges, Research and Planning Group, Center for Student Success (2007). *Basic skills as a foundation for student success in California Community Colleges.* Sacramento: California Community Colleges.

Casazza, M., & Silverman, S. (1996). *Learning assistance and developmental education.* San Francisco, CA: Jossey-Bass.

Contra Costa Community College District. (2001). *District-wide performance and planning report: Servicing students in basic skills education.* Martinez, CA:

Contra Costa Community College District, Office of District Research Planning and Resource Development.

Dale, P. A., & Drake, T. M. (2005). Connecting academic and student affairs to enhance student learning and success. In S. R. Helgfot and M. M. Culp (Eds.), *Community college student affairs: What really matters. New Directions for Community Colleges,* no. 131 (pp. 51-64). San Francisco: Jossey-Bass.

Grubb, W. N. (2001). From black box to Pandora's box: Evaluating remedial/ developmental education. New York: Columbia University, Teachers Colleges, Community College Research Center.

Grubb, W.N., & Cox, R.D. (2005). Pedagogical alignment and curricular consistency: The challenges for developmental education. In C.A. Kozeracki (Ed.), *Responding to the challenges of developmental educations. New Directions for Community Colleges,* no. 129 (pp. 93-104). San Francisco: Jossey-Bass.

Grubb, W.N., & Kalman, J. (1994). The role of remediation in vocational education and job training. *American Journal of Education, 103*(1), 54 - 93.

Hardin, C. J. "Access to Higher Education: Who Belongs?" Journal of Developmental

Education, 1988, *12*(1), 2–6, 19.

Harklau, L., Siegal, M., & Losey, K. M. (1999). Linguistically diverse students and college writing: What is equitable and appropriate? In L. Harklau, K. M. Losey, & M. Siegal (Eds.), *Generation 1.5 meets college composition: Issues in teaching of writing to U.S.-educated learners of ESL* (pp.1-14). Mahwah, NJ: Lawrence Erlbaum Associates.

Higbee, J.L, Arendale, D.R., & Lundell, D. B. (2005). Using theory and research to improve access and retention in developmental education. In C.A. Kozeracki (Ed.) *Responding to the challenges of developmental education. New Directions for Community Colleges,* no. 129 (pp. 5-15). San Francisco: Jossey-Bass.

Jarrell, C. L. (2004). Creating a foundation for student success: From research to practice. *Community College Journal of Research and Practice, 28*(6), 513-524.

Jenkins, D., & Boswell, K. (2002). *State policies on community college remedial education: Findings from a national survey*. Denver, Colorado: Education Commission of the States.

Kisker, C. B., & Outcalt, C. L. (2005). Community college honors and developmental faculty: Characteristics, practices, and implications for access and educational equity. *Community College Review, 33*(2), 1-21.

Kozeracki, C. A. (2005). Preparing faculty to meet the needs of developmental students. In C.A. Kozeracki (Ed.), *Responding to the challenges of developmental educations. New*

Directions for Community Colleges, no. 129 (pp. 39-49). San Francisco: Jossey-Bass.

Kozeracki, C. A., & Brooks, J. B. (2006). Emerging institutional support for developmental education. In B. K. Townsend and K. J. Dougherty (Eds.), *Community college missions in the 21st century. New Directions for Community Colleges*, no. 136 (pp. 63-73). San Francisco: Jossey-Bass.

Levin, J. S. (2007). *Non-traditional students and community colleges: The conflict of justice and neo-liberalism*. New York: Palgrave Macmillan.

Levin, J., Kater, S., & Wagoner, R. (2006) Community college faculty: At work in the new economy. New York: Palgrave MacMillan.

Malnarich, G. (2005). Learning communities and curricular reform: "Academic apprenticeships" for developmental students. In C.A. Kozeracki (Ed.), *Responding to the challenges of developmental educations. New Directions for Community Colleges,* no. 129 (pp. 51-62). San Francisco: Jossey-Bass.

Maxwell, M. (1997). *Improving student learning skills.* Clearwater, FL: H & H Publishing Co.

Maxwell, W. E., & Kazlauskas, E. J. "Which Faculty Development Methods Really Work in Community Colleges? A Review of Research." Community/Junior College Quarterly, 1992, 16(4), 351–360.

McCabe, R. (2000). *No one to waste: A report to public decision-makers and community college leaders.* Washington, D. C.: Community College Press.

McPhail, C. J., & McPhail, I. P. (2006). Prioritizing community college missions: A directional effort. In B. K. Townsend & K. J. Dougherty (Eds.), *Community college missions in the 21st century. New Directions for Community Colleges,* no. 136 (pp. 91-99). San Francisco: Jossey-Bass.

Moss, B. G., & Yeaton, W. H. (2006). Shaping policies related to developmental Education: An evaluation using the regression-discontinuity design. *Educational Evaluation and Policy Analysis, 28*(3), 215-229.

National Center for Education Statistics [NCES] (2003). *The condition of education 2004, indicator 18: Remediation and degree completion.* Washington, DC: U.S. Department of Education.

Oudenhoven, B. (2002). Remediation at the community college: Pressing issues, uncertain solutions. In T. H. Bers & H. D. Calhoun (Eds.), *Next steps for the community college. New Directions for Community Colleges,* no. 117 (pp. 35-44). San Francisco: Jossey-Bass.

Parker, T. (2007). *Ending remediation: Consequences for access and opportunity.* (ASHE/Lumina Policy Briefs and Critical Essays No. 2). Ames: Iowa State University, Department of Educational Leadership and Policy Studies.

Perin, D. (2005). Institutional decision making for increasing academic preparedness in community colleges. In C.A. Kozeracki (Ed.), *Responding to the challenges of developmental educations. New Directions for Community Colleges,* no. 129 (pp. 27-38). San Francisco: Jossey-Bass.

Quirk, K. E. (2005). A comprehensive approach to developmental education. In C. A. Kozeracki (Ed.), *Responding to the challenges of developmental education. New Directions for Community Colleges,* no. 129 (83-92). San Francisco: Jossey-Bass.

Raftery, S. (2005). Developmental learning communities at metropolitan community college. *New Directions for Community Colleges* no. 129 (pp. 64 - 72). San Francisco: Jossey-Bass.

Roueche, J., & Baker, G. (1983). *Access and excellence.* Washington, D. C.: Community College Press.

Roueche, J., Baker, G. A., III, & Rose, R. (1987). *Shared vision*. Washington, DC: The Community College Press.

Roueche, J. E., & Roueche, S. D. (1994). Climbing out from between a rock and a hard place: Responding to the challenges of the at-risk student. *Leadership Abstracts, 7*(3), 1-2.

Roueche, J., & Roueche, S. (1999). *High stakes, high performance: Making remedial education work.* Washington, DC: American Association of Community Colleges, The Community College Press.

Roueche, J. E., Roueche, S. D., & Milliron, M. D. (1996). Identifying the strangers: exploring part-time faculty integration in American community colleges. *Community College Review, 23*(4), 33-49.

Roueche, J. E., Roueche, S. D., & Ely, E. E. (2001). Pursuing excellence: The community college of Denver. *Community College Journal of Research and Practice, 25*(7), 517-537.

Stein, K. (2005). Meeting the needs of developmental Latino/Latina students. *Journal of College Reading and Learning, 36*(1), 82-87.

Wambach, C., Brothen, T., & Dikel, T. (2000). Toward a developmental theory for developmental educators. *Journal of Developmental Education, 33*(1).

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Counseling Literature Review

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Academic counseling in higher education was traditionally a form of academic advising geared toward informing students about institutional requirements. An advisor's role, primarily played by faculty without appropriate training in counseling, was often defined as delivering information and processing students. Even after the counseling function became professionalized in the late 1970s and early 1980s, nearly half of advising in higher education in the early 1990s was undertaken by faculty (Frost, 1991, p. 1). As the practice became more professionalized, a new conception of "developmental" counseling emerged where the academic counselor guided, motivated, and helped students develop within an academic culture (Frost, p. 4). This new school of thought conceptualized academic advising as a longer term teaching relationship between the advisor, the institution, and the student (Frost, p. 15). Under this new model, the academic advisor was re-defined as but one role in a broader emphasis on student support and holistic student counseling (Chaves, 2006; Frost, p. 4, 15).

The professionalization of counseling as a field coincided with institutional concerns about student retention and attainment in four-year institutions and community colleges (Chaves, 2006; Summers, 2003; Tinto, 1993). In the last two decades, counseling and student support services in postsecondary education have expanded to provide students with a broad range of supportive programs and services (Broido, 2004; Chaves, 2006; Gallagher, 2007; Haggan, 2000; Laden, 2004; Perez, 1998; Ray & Altekruse, 2000). Concerns from educators and policymakers about the factors placing students' academic progression "at-risk" led to the emergence of various forms of counseling to meet distinct student needs (Chaves, 2006; Summers, 2003; Tinto, 1993). These programs and practices include academic counseling, career counseling, personal and mental health counseling, services for the disabled and for students with learning disabilities, financial counseling, first-year orientation courses, and early warning systems (Bigaj, Shaw, Cullen, McGuire, & Yost, 1995; Durodoye, Harris, & Bolden, 2000; Grubb, 2006).

At community colleges, counseling services have been found to promote academic and social integration (Arbona & Nora, 2007) in students' pursuit of a variety of academic, personal, and career goals (Chaves, 2006). Counseling services provide valuable information and guidance for students who intend to transfer to a four-year institution (Anderson, Sun, & Alfonso, 2006; Townsend & Wilson, 2006). As well, recent transfer students in colleges and universities have relied on counseling for help in navigating the transition process once they have transferred from a community college (Kuh, Kinzie, Schuh, Whitt, & Associates, 2005). Counseling services and other supportive programs and practices (e.g., orientation and career counseling) have been identified as critically important for community college students; however, much of the research on counseling services has

concentrated on residential students in four-year colleges and universities who are more likely to have just graduated from high school (Bailey & Alfonso, 2005; Rendón, Jalomo, & Nora, 2000).

Although further research is needed to understand the effective organization and design for counseling practices specific for community college students (Bailey & Alfonso, 2005), current research illustrates the benefits of counseling. In a study of low-income adult learners attending community colleges, Liebowitz and Taylor (2004) found that counseling services helped students develop and define academic and career goals, which strengthened their motivation and academic persistence. Information about degree programs, job placement, and financial aid were a few of the resources and critical pieces of information students could obtain from counselors. Similarly, McGuinness and Jones (2003) found that community colleges with reputedly successful transfer programs had extensive support programs that incorporated counseling to facilitate the transfer process. Counseling has also assisted students as they worked towards vocational and career vocational goals. Bragg (2001) noted the importance of career counseling in supporting the development of students' vocational goals.

Challenges and Issues in Community College Counseling Services

Although counseling has been demonstrated to be important long before a student enters college (e.g., McDonough, 1997) the purpose of this literature review is to explore some of the promising practices in counseling services found specifically within community colleges. The review begins with an identification of the challenges and issues that face community colleges in their counseling services.

The issues discussed include the community college as a multiple-mission institution; the diverse student body; access to information; insufficient funding; and staff and faculty issues.

Multiple-Mission Institution

Community colleges typically have an array of institutional missions and serve a diverse student body (Bryant, 2001; Cohen & Brawer, 2003; Smith Morest, 2006). As the needs of students and society have evolved over the past few decades (Dougherty & Townsend, 2006), so too have the roles and responsibilities of community colleges and community college counselors (Durodoye, Harris, & Bolden, 2000). As noted above, community college counseling services support students in several different ways from assisting students through the transfer process or providing academic advising and career counseling (Chaves, 2006; Townsend & Wilson, 2006).

The mission of community colleges to serve as "democracy's college" or the "people's college" (Cohen & Brawer, 2003) has led community college researchers, policymakers, and institutional leaders to consider how community colleges serve racially and ethnically diverse students (Nora & Rendón, 1990). The open-access mission of community colleges has also furthered the need for effective guidance and counseling because of the many students who enter community colleges without adequate academic skills or without decisiveness in their choice of program, such as "experimenters" (Grubb, 2006).

The challenge for community college counselors, advisors, and other support staff is to guide and encourage students appropriately so as to foster students' commitment to their academic goals, which in turn, promotes educational attainment (Arbona & Nora, 2007). Students' commitment to their educational and career goals is particularly salient for community colleges because their students, in the main, are neither full-time nor residential (Horn, Nevill, & Griffith, 2006). It is not uncommon for a community college student to balance multiple demands, which appear to deter them from immersing themselves fully in the college experience (Ornelas & Solorzano, 2004). Indeed, a large proportion of community college students are non-traditional and their characteristics suggest that they will not persist in an academic environment (Levin, 2007).

Diverse Student Body

Similar to the multi-mission focus of community colleges, the needs of the community college student population vary. A growing proportion of students at community colleges are adult learners, who as a group are also diverse in their needs and educational and career goals (Donaldson & Townsend, 2007; Levin, 2007). While a recent high school graduate might benefit from intrusive career counseling, an adult learner interested in upgrading their skills may only need to be steered towards the appropriate courses, and another adult learner may need to know much more about their employment and career options (Grubb, 2006). Thus, there is consensus that a broad range of counseling and other student services are important for supporting the diversity of academic and social needs of community college students (Haggan, 2000; Jenkins, 2007; Levin, 2007;

Levin & Montero-Hernandez, forthcoming; Matus-Grossman & Gooden, 2002; Pineda & Bowes, 1995; Research and Planning Group, 2007; Swail, Redd, & Perna, 2003; Tinto, 1993). Grubb (2006) described various forms of counseling: *Career counseling* helps students in choosing occupational directions; *academic counseling*, often defined as *advising*, assists students in the process of enrolling in the right courses and making progress toward academic counselors; *personal counseling* focuses on personal and psychological issues; and *financial counseling*, which is most typically offered in financial aid offices, assists students in the financial aid process and managing tuition, grants, and loans. Community college counselors are increasingly required to pay greater attention to social, personal, and mental health needs and to reconfigure the delivery of their services in different ways to meet these changing needs (Donaldson & Townsend, 2007; Durodye, Harris, & Bolden, 2000).

Access to Information

According to Grubb (2006), community college students often lack access to specific types of counseling, such as career, personal, and financial counseling. Formal counseling and placement services offices commonly found on four-year campuses are often absent at community colleges, and even when these services are available they are often understaffed. Grubb also notes that some services, in particular counseling services, may be ineffective because counselors have not received the proper training. Or, as Ornelas and Solorzano (2004) concluded from their study of the transfer process for Latino/a students in California community colleges, counselors themselves may not hold the accurate information students need. They suggest that although

counselors were key individuals whom students could interact with to access information about the transfer process, counselors' knowledge and understanding of the transfer process influenced the guidance they provided to students. Ornelas and Solorzano noted that it was not uncommon for the students in their study to receive conflicting information from different counselors.

Insufficient Funding

Similar to high schools, which are also in need of greater funding to provide students with adequate academic and college counseling (Perna, Rowan-Kenyon, Thomas, Bell, Anderson, & Li, 2008), in general, community colleges face a lack of consistent funding particularly for non-instructional departments and programs (Durodoye, Harris, & Bolden, 2000; Frost, 1991; Grubb, 2006; Mattox & Creamer, 1998; Ray & Altekruse, 2000). Support services such as counseling, advising, orientation, and student activities have survived a number of budget challenges and institutional redesigns through the years (Culp, 2005). At a time when state budgets are constrained by fiscal retrenchment and state sponsored institutions are asked to be more efficient (Levin, 2001), counseling and student support services in particular struggle to prove their institutional worth (Levin, 2007). In this environment of constrained budgets and outcome-based institutional assessment formulas, counselors and student support services practitioners are increasingly pressured to quantify and measure their services in order to legitimate their functions (Coll & VonSeggern, 1993). If student support and counseling services can validate their activities with quantifiable data, then they may be able to not only improve their

services but also justify their requests for increased levels of financial support from institutional leaders and state policymakers (Smith, 2007).

Staff and Faculty Issues

Often an issue tied to funding, community college counseling services experience challenges related to staffing. Mattox and Creamer (1998) contend that counseling services "seem always to have been held hostage by persistent and compelling realities of great responsibility and limited resources with which to meet their obligations" (p. 4). Although student to counselor ratios provide some indication of a problem with staffing and funding in counseling services, it is difficult to accurately measure the exact resources available at community colleges because counseling and guidance services can take place through various mechanisms (e.g., faculty, learning communities). However complex the issue, there is consensus that community college counseling services and resources are inadequate. Researchers found that those students with the most initiative and direction were more likely to access counseling, while those students who lacked direction approached course taking in a random manner, which put educational goals such as transfer and degree completion at greater risk of failure (Arbona & Nora, 2007; Grubb, 2006).

Faculty at community colleges typically assume more responsibility for counseling at their institutions compared to four-year institutions (Jacoby, 2006) and, therefore, are another important group of practitioners to consider in the delivery of counseling services. In the last several decades, one of the most consequential

changes in the delivery of postsecondary instruction has involved the increased use of part-time faculty: at community colleges, part-time faculty have provided virtually half of all instruction and the practice of part-time faculty hiring is now widely regarded as a consequence of budgetary shortfalls and economic efficiencies, as well as a stratified labor force (Jacoby; Levin, Kater, & Wagoner, 2006). While the higher education literature emphasizes the important role that faculty play in the academic and social integration of students (e.g., Kuh et al., 2005; Pascarella & Terenzini, 2005) little attention has been given to understand the effects of part-time faculty on community college students' academic and social integration. Benjamin (2002) posits that the over reliance on part-time faculty undermines student performance because part-time faculty tend to be less available (e.g., reduced office hours), utilize less challenging instructional methods and nontraditional examination techniques, and have lower writing expectations. However, Jacoby (2006) notes that differences between part-time and full-time instructional practice might be explained as "consequences of part-time contracts rather than as the consequence of lower faculty qualifications" (p. 1085). In a system where part-time faculty may be paid by the course, there is little incentive for faculty to be highly involved in the workings of the institution to foster rich and supportive interactions between students and faculty (Jacoby).

Promising Practices in Community College Counseling

While this literature review has described some of the challenges and issues facing community college counseling services, it also points out the critical role that counselors play in facilitating the academic and social success of community college students (Anderson, Sun, & Alfonso, 2006). The research suggests that guidance and counseling, assessment strategies, and some remedial instruction can lead to improved student persistence and achievement (Henriksen, 1995; Roueche & Roueche, 1994). As noted above, community colleges continue to be faced with the challenge of how to provide a range of counseling services even under financial and staffing constraints. The purpose of this next section of the literature review is to explore promising practices in community college counseling that may be used to overcome, or at least begin to address, the challenges and issues discussed previously. The promising practices that will be discussed in this section include assessment and placement counseling; career and vocational counseling; comprehensive one-stop student service centers; and supportive campus environments.

Assessment and Placement Counseling

Over 70% of community colleges in the U.S. require pre-enrollment assessments in order to gauge student "capabilities" so that students can be "placed, advised, and counseled appropriately" (Perez, 1998, p. 65). Assessment strategies combined with counseling services can help place students according to their ability so that they acquire the necessary remedial coursework in the initial stages of their education, as well as the continued support services to ensure academic progress (Haggan, 2000).

However, because students who need the most help often do not ask for it, institutions have veered away from voluntary models of counseling in favor of more "coerced" or "mandatory" forms often called

"intrusive advising" or "active counseling" (Frost, 1991, p. 50; Grubb, 2006, p. 206; Kuh et al., 2005, p. 268; McCusker, 1999; Smith, 2007).

Intrusive approaches to counseling are attempts to establish relationships with students so that they feel "welcome" and "comfortable" in academic environments that can often seem strange, overwhelming, or hostile (Henriksen, 1995, p. 68-69). Early alert systems are one programmatic embodiment of this counseling method that can be utilized to monitor student persistence and attainment. If a student shows warning signs, such as low attendance, the institution will provide targeted support to help the student address any barriers that interfere with academic progress (Hoyt, 1999; Laden, 2004; Perez, 1998; Summers, 2003). Another form of intrusive advising, adapted from social services, is the implementation of case managers who go beyond standard counseling services and help students with all types of academic, financial, personal, or cultural issues that might affect retention and student success (Laden, 2004). The Community College of Denver is a prominent institution in the area of case management, an approach that has become of cornerstone of the institution (Levin, 2007; Roueche, Ely, & Roueche, 2001).

Career and Vocational Counseling

Many community colleges integrate career counseling and cooperative programs with counseling support services (Grubb, 2006; Laden, 2004; McCusker, 1999; Perez, 1998; Research and Planning Group, 2007). Community colleges have linked with regional businesses and state workforce development agencies to promote workforce preparation, employment, and economic development (Jacobs & Dougherty, 2006; Lisman, 2001; Spangler, 2002). These partnerships arose through standard vocational education, contract training, or welfare to work programs (Kantor, 1994; Lisman; Spangler). Partners are urged to articulate shared goals, which often center on training students and putting them to work in local industries. One view for successful programmatic partnerships involves four basic components: case management of students with support services; additional support services for academic and vocational instruction; coherent program design that integrates program courses with other academic and vocational courses; and connections with local employers (Melendez, Falcon, & deMontrichard, 2004). The counseling component of these programs is most pronounced in the context of managing the persistence and achievement of each student by helping them identify and overcome personal, social, financial, and academic barriers (Brock, Matus-Grossman, & Hamilton, 2001; Campbell, 1985; deVries, 1998; Melendez et al., 2004). Strong ties between career counselors and local employers can develop future job opportunities for students (Campbell, 1985; de Vries; McAtee & Benshoff, 2006).

Comprehensive One-Stop Student Service Centers

In response to a need to ease and improve the way that students are able to access information and services, community colleges have begun to structure more comprehensive and coordinated student service centers in a centralized location. As noted above, in many institutions, students must access information from multiple offices. This can become a confusing process and students do not always know exactly

which office to contact (Townsend & Wilson, 2006). Centralizing support services can make it easier for students to seek and find targeted guidance and counseling (Grubb, 2006). Well-known on four-year campuses but not widely developed in community colleges, these "one-stop" centers are designed to integrate a diverse array of student support services in order to meet the complex needs of the "whole student" (Grubb, p. 218).

A coordinated student support center can also bring increased visibility and legitimacy to a vast assortment of smaller programs and/or offices (e.g., financial aid office, bursar, registrar, and student activities office) which are often dispersed sporadically across a campus making them all but invisible to students (deVries, 1998). Centralized student support centers can also vary in form. Laden (2004) highlighted one community college's approach, which incorporated several academic divisions into one center and used trained educational case managers who focused on meeting specific student needs in each division. By infusing each support center with a more narrow curricular emphasis, the college provided students with the potential to obtain concrete information from specially trained counselors (Laden).

Supportive Campus Environment

Students' commitment to their academic goals is solidified through the encouragement and support they receive in interactions with fellow classmates, peers, and with faculty in academic and non-academic settings (Arbona & Nora, 2007; Kuh et al., 2005). Community college students, in particular those identified as "at-risk" of lack of persistence, benefit most from "sustained counseling" (Grubb, 2006, p. 201) and other

support services that support them in their pursuit of academic and personal goals (Levin, 2007).

According to Ornelas and Solorzano (2004), faculty have the most frequent contact with students and are often the ones to whom students turn for information. In response to a need to promote interactions between faculty and students, they argued that faculty should implement innovative teaching strategies, such as cooperative learning programs, learning communities, and interactive classrooms. Bailey and Alfonso (2005) explored some of these various institutional strategies and found that learning communities appeared to have the most support grounded in research. In a learning community, instruction is typically organized around themes and students go through the program as a cohort. As Bailey and Alfonso explained, "the learning community model's positive effects on persistence and graduation are consistent with the most influential theoretical perspectives used to study retention" (p. 2). For community colleges, the learning community approach can be an effective way that commuter institutions can encourage an intellectual environment, quality interactions, and linkages between peers and amongst peers and faculty members (Braxton, Hirschy, & McClendon, 2004; Fogarty & Dunlap, 2003).

In addition to learning communities, orientation classes and workshops can assist students with the transition into and out of their institutions (Bailey & Alfonso, 2005). Freshman or first-generation orientation classes frequently introduce students to both the academic requirements and student services of a particular institution while helping students clarify academic and career goals and generate educational plans (Grubb,

2006; Perez, 1998). Transfer workshops can prepare students for the expectations and climate of the four-year university, especially when specific information can be provided about the new campus (Laanan, 1996).

Conclusions

As an open-door college serving a highly diverse student population, the community college is a complex institution. Not all practices that are acclaimed as promising or effective at one community college can work in the same way with similar outcomes at other colleges. Indeed, it may be that community colleges are idiosyncratic institutions, highly dependent upon their historical, social, political, and cultural contexts for practice. What works in North Carolina or New York or Texas may not work in California.

This review examined the literature to identify promising practices utilized in community college counseling services, nationally. But state differences are important. For example, recent trends in California suggest that attention is given to community college students in two main areas—university transfer and basic skills. However, these areas are only two facets of the community college's curriculum. In addition to supporting students through the transfer process and in baccalaureate attainment, counseling services can provide students the academic, social, and personal support in vocational programs, career and technical programs, and workforce development programs. As a result, researchers have recognized the broad range of counseling and other student services that are all important in supporting student attainment. Additional research on guidance and counseling services specifically in community colleges will help to further understanding about how counseling can be effectively designed and integrated into the institution's practices and programs. Researchers are increasingly paying attention to the changing demographics of higher education, including the growing proportion of community college students who are adult learners, as well as other changes (e.g., growing numbers of part-time faculty) that may influence community college students' access to guidance and counseling. Furthermore, the rise of on-line instruction and programs bring new opportunities for interaction and communication between students, their peers, and faculty.

What is absent in the literature, with some exceptions, is a focus upon counseling and counseling services for student development in the community college, from the perspective of students' ideological and socio-cultural growth or transformation. Much of the literature of recent years addresses student academic advancement supported by counseling and advising services. Yet, there are considerable promising practices at community colleges nationally of the role of counseling and advising in the development of student identity (Levin & Montero-Hernandez, forthcoming).

References

Anderson, G., Sun, J.C., & Alfonso, M. (2006). Effectiveness of statewide articulation agreements on the probability of transfer: A preliminary policy analysis. *Review of Higher Education, 29*(3), 261 – 291.

Arbona, C., & Nora, A. (2007). The influence of academic and environmental factors on Hispanic college degree

attainment. *Review of Higher Education, 30*(3), 247 – 269.

Bailey, T.R. & Alfonso, M. (2005). Paths to persistence: An analysis of research on program effectiveness at community colleges. *Lumina Foundation for Education New Agenda Series, 6*(1). Retrieved from: *http://www.luminafoundation.org/publications/PathstoPersistence.pdf*

Benjamin, E. (2002). How over reliance upon contingent appointments diminishes faculty involvement in student learning. *Peer Review, 5*(1), 4 – 10.

Bigaj, S. J., Shaw, S. F., Cullen, J. P., McGuire, J. M., & Yost, D. S. (1995). Services for students with learning disabilities at two- and four-year institutions: Are they different? *Community College Review, 23*(2), 17-36.

Bragg, D.D. (2001). New challenge and opportunities for the new vocationalism in American community colleges. *New Directions for Community Colleges* (115).

Braxton, J.M., Hirschy, A.S., & McClendon, S.A. (2004). Understanding and reducing college student departure. *ASHE-ERIC Higher Education Report, 30*(3).

Brock, T., Matus-Grossman, L., & Hamilton, G. (2001). Welfare reform and community colleges: A policy and research context. In C. D. Lisman (Ed.), *The community college role in welfare to work. New Directions in Community Colleges, 116* (pp. 5-20). San Francisco: Jossey-Bass.

Broido, E. M. (2004). Understanding diversity in millennial students. In M. D. C. R. DeBard (Ed.), *Serving the millennial generation. New Directions for Student Services, 106* (pp. 73-85). San Francisco, CA: Jossey-Bass.

Bryant, A. N. (2001). ERIC review: Community college students: Recent findings and trends. *Community College Review, 29*(3), 77-93.

Campbell, D. F. (1985). Occupational education supportive services in the two-year college: What they are and what they should be. *Community/Junior College Quarterly, 9*(4), 333-346.

Chaves, C. (2006). Involvement, development, and retention: Theoretical foundations and potential extensions for adult community college students. *Community College Review, 34*(2), 139-152.

Cohen, A.M. & Brawer, F. B. (2003). The American Community College (4th ed.). New York: Jossey Bass.

Coll, K. M., & VonSeggern, D. J. (1993). A framework for evaluating community college counseling programs and functions: Showing contributions through student success. *Community College Journal of Research and Practice, 17*(5), 473-480.

Culp, M (2005). Increasing the value of traditional support services. *New Directions for Community Colleges, 205*(131), 33 – 49.

deVries, J. L. (1998). School-to-work planning: Career guidance and development functions at Wyoming community colleges. *Community College Journal of Research and Practice, 22*(1), 67-77.

Donaldson, J., & Townsend, B. K. (2007). Higher education journals' discourse about adult undergraduate students. *Journal of Higher Education*, 78(1), 27-50.

Dougherty, K. J., & Townsend, B. K. (2006). Community college missions: A theoretical and historical perspective. In B. K. Townsend & K. J. Dougherty (Eds.), *Community college missions in the 21st century. New Directions for Community Colleges, 136* (pp. 5-13). San Francisco, CA: Jossey-Bass.

Durodoye, B. A., Harris, H. L., & Bolden, V. L. (2000). Personal counseling as a function of the community college counseling experience. *Community College Journal of Research and Practice, 24*(6), 455-468.

Fogarty, J., & Dunlap, L., with Dolan, E., Hesse M., Mason, M., & Mott, J. (2003). L*earning communities in community colleges. National Learning Communities Project Monograph Series,* Olympia WA: The Evergreen State College, Washington Center for Improving the Quality of Undergraduate Education, in cooperation with the American Association for Higher Education and the American Association of Community Colleges.

Frost, S. H. (1991). *Academic advising for student success: A system of shared responsibility. ASHE-ERIC Higher Education Report No. 3*. Washington, DC: The George Washington University, School of Education and Human Development.

Gallagher, R. P. (2007). *National survey of counseling center directors 2007*. Alexandria, VA: The American College Counseling Association.

Grubb, W. N. (2006). "Like, what do I do now?": The dilemmas of guidance counseling. In T. Bailey & V. S. Morest (Eds.), *Defending the community college equity agenda* (pp. 195-222). Baltimore, MD: The Johns Hopkins University Press.

Haggan, P. S. (2000). Transition counseling in the community college. *Community College Journal of Research and Practice, 24*(6), 427-442.

Henriksen, J. A. S. (1995). Orientation and counseling in a California community college: Surveying the perspectives of a multicultural student population. *Community College Review, 23*(2), 59-74.

Horn, L., Nevill, S., & Griffith, J. (2006). Profile of Undergraduates in U.S. Postsecondary Education Institutions, 2003-04: With a Special Analysis of Community College Students. Statistical Analysis Report. NCES 2006-184.

Hoyt, J. E. (1999). Remedial education and student attrition. *Community College Review, 27*(2), 51-72.

Jacobs, J., & Dougherty, K. J. (2006). The uncertain future of the community college workforce development mission. In B. K. Townsend & K. J. Dougherty (Eds.), *Community college missions in the 21st century. New Directions for Community Colleges, 136* (pp. 53-62). San Francisco, CA: Jossey-Bass.

Jacoby, D. (2006). Effects of part-time faculty employment on community college graduation rates. *The Journal of Higher Education, 77*(6), 1081 - 1103.

Jenkins, D. (2007). Institutional effectiveness and student success: A study of high- and low-impact community colleges. *Community College Journal of Research and Practice, 31*(11), 945-962.

Kantor, S. L. (Ed.). (1994). *A practical guide to conducting customized work force training. New Directions for Community Colleges, 85*. San Francisco, CA: Jossey-Bass.

Kuh, G. D., Kinzie, J., Schuh, J. H., Whitt, E. J., & Associates. (2005). *Student success in college: Creating conditions that matter*. San Francisco, CA: Jossey-Bass.

Laanan, F. S. (1996). Making the transition: Understanding the adjustment process of   community college transfer students. *Community College Review*, *23* (4), 69-84.

Laden, B. V. (2004). Serving emerging majority students. In B. V. Laden (Ed.), *Serving minority populations. New Directions for Community Colleges, 127* (pp. 5-19). San Francisco, CA: Jossey-Bass.

Levin, J. S., & Montero-Hernandez, V. (forthcoming). *Community colleges and their students: Co-construction and organizational identity*. New York: Palgrave MacMillan.

Levin, J. S. (2007). *Non-traditional students and community colleges: The conflict of justice and neo-liberalism*. New York: Palgrave Macmillan.

Levin, J., Kater, S., & Wagoner, R. (2006). *Community college faculty: At work in the new economy*. New York: Palgrave.

Levin, J. (2001). *Globalizing the community college: Strategies for change in the twenty-first century*. New York: Palgrave.

Liebowitz, M., Taylor, J.C. (2004). Breaking Through: Helping Low-Skilled Adults Enter and Succeed in College and Careers. Big Rapids, MI: National Council for Workforce Education.

Lisman, C. D. (Ed.). (2001). *The community college role in welfare to work. New Directions for Community Colleges, 116*. San Francisco, CA: Jossey-Bass.

Mattox, R. E., & Creamer, D. G. (1998). Perceptions of the scope and quality of student services functions in two-year colleges. *Community College Review, 25*(4), 3-20.

Matus-Grossman, L., & Gooden, S. (2002). *Opening doors: Students' perspectives on juggling work, family, and college*: Manpower Demonstration Research (MDRC).

McAtee, A. B., & Benshoff, J. M. (2006). Rural dislocated women in career transition: The importance of supports and strategies. *Community College Journal of Research and Practice, 30*(9), 697-714.

McCusker, M. (1999). ERIC review: Effective elements of developmental reading and writing programs. *Community College Review, 27*(2), 93-105.

McDonough, P.M. (1997). *Choosing colleges: How social class and schools structure opportunity.* Albany, NY: State University of New York Press.

McGuinness, A.C. & Jones, D.P. (2003). A policymaker's guide to assessing and responding to needs for community college services. Boulder, CO: Educational Commission of the States.

Melendez, E., Falcon, L. M., & deMontrichard, A. (2004). Lessons from community college programs targeting welfare recipients. In B. V. Laden (Ed.), *Serving minority populations. New Directions for Community Colleges, 127* (pp. 61-77). San Francisco, CA: Jossey-Bass.

Nora, A., & Rendon, L.I. (1990). Determinants of predisposition to transfer among community college students: A structural model. *Research in Higher Education, 31*, 231-255.

Ornelas, A., & Solorzano, D.G. (2004). Transfer Conditions of Latina/o Community College Students: A Single Institution Case Study. *Community College Journal of Research and Practice, 28*(3), 233-248.

Pascarella, E., & Terenzini, P. (2005). *How college affects students: A third decade of research.* San Francisco: Jossey-Bass.

Perez, L. X. (1998). Sorting, supporting, connecting, and transforming: Intervention strategies for students at risk. *Community College Review, 26*(1), 63-78.

Perna, L.W., Rowan-Kenyon, H.T., Thomas, S.L., Bell, A., Anderson, R., & Li, C. (2008). The role of college counseling in shaping college opportunity: Variations across high schools. *The Review of Higher Education, 31*(2), 131 - 159.

Pineda, E. N., & Bowes, S. G. (1995). Multicultural campuses: The challenge for community college counselors. *Community College Journal of Research and Practice, 19*(2), 151-160.

Ray, D., & Altekruse, M. (2000). Introduction: Counseling in the community college. *Community College Journal of Research and Practice, 24*(6), 423-425.

Rendón, L. I., Jalomo, R. E., & Nora, A. (2000). Theoretical considerations in the study of minority student retention in higher education. In J. M. Braxton (Ed.), Reworking the student departure puzzle. Nashville, TN: Vanderbilt University Press.

Research and Planning Group, California Community Colleges Systems Office (2007). *Basic skills as a foundation for student success in California community colleges*.Sacramento, CA: Author.

Roueche, J. E., & Roueche, S. D. (1994). Responding to the challenge of the at-risk student. *Community College Journal of Research and Practice, 18*(1), 1-11.

Roueche, J. E., Ely, E. E., & Roueche, S. D. (2001). *In Pursuit of Excellence: The Community College of Denver*. Washington, D.C.: Community College Press.

Smith, J. S. (2007). Using data to inform decisions: Intrusive faculty advising at a community college. *Community College Journal of Research and Practice, 31*(10), 813-831.

Spangler, M. S. (Ed.). (2002). *Developing successful partnerships with business and the community. New Directions for Community Colleges, 119*. San Francisco, CA: Jossey-Bass.

Summers, M. D. (2003). ERIC review: Attrition research at community colleges. *Community College Review, 30*(4), 64-84.

Swail, W. S., Redd, K. E., & Perna, L. W. (2003). *Retaining minority students in higher education: A framework for success. ASHE-ERIC Higher Education Report, 30(2)*. San Francisco, CA: Jossey-Bass.

Tinto, V. (1993). *Leaving college: Rethinking the causes and cures of student attrition* (2nd ed.). Chicago: The University of Chicago Press.

Townsend, B.K. & Wilson, K.B. (2006). The transfer mission: Tried and true, but troubled? *New Directions for Community Colleges* (136)*, 33- 41.

English as a Second Language Literature Review

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Post-1965 immigration brought individuals and families to the United States who were diverse in race, ethnicity, language, religion, and socioeconomic characteristics (Rong & Fitchett, 2008). The immigrant population in the U.S. has expanded rapidly, particularly in larger cities (Brilliant, 2000). Currently, more than 35 million residents (or 12 percent of the total population) in the U.S. are foreign-born (Chisman & Crandall, 2007). Immigrants are a large and expanding group among the U.S. labor force (Capps, Fix, Henderson, & Reardon-Anderson, 2005) and account for half the growth in the workforce during the 1990s (Sum, Fogg, & Harrington, 2002). While immigrants have comprised a large proportion of the workforce, they are overrepresented in lower-paying positions (Capps, Fix, Henderson, & Reardon-Anderson, 2005).

In response to the influx of immigrants in the U.S. and the growing body of non-English speaking students in higher education, postsecondary institutions have provided English as a Second Language (ESL) instruction to assist culturally and linguistically diverse students gain English language skills necessary to participate in society and/or perform competently in college-level courses (Harklau, Siegal, & Losey, 1999; Ignash, 2000). Much of the public responsibility for ESL instruction in postsecondary education has fallen to community colleges. Community colleges afford students the opportunity to learn English and acquire the skills needed for employment (Brilliant, 2000). In addition to those students who have immigrated to the U.S. with their families, students in ESL programs also include refugees, migrants, permanent residents, and foreign/international students who also face barriers to educational and career opportunities due to a lack of English skills (Kuo, 1999).

Policymakers increasingly look to community colleges as the most appropriate place for college students to improve their English-language abilities, especially if they aim to transfer to a four-year institution (Cohen & Brawer, 2003; Ignash, 1994). ESL programs also serve a range of student needs, from developing basic English conversational skills to baccalaureate degree aspirations, and in many community colleges, ESL is one of the fastest-growing programs (Kuo, 1999). In 2006, 98% of California community colleges offered ESL courses, and these colleges provide much more ESL instruction than the other two segments of California's higher education system, the University of California and California State University (Intersegmental Committee of the Academic Senates, 2006).

This literature review explores some of the changing issues and challenges confronting community colleges in providing ESL instruction and programs. It also discusses several promising practices that support and promote community college

students' attainment in this area of English as a Second Language.

Challenges and Issues in Community College ESL

Community college ESL programs face numerous challenges and issues, including the diversity of the ESL student population; the identification, assessment, and placement of ESL learners; the increase in learning gains; faculty status; and insufficient funding. The following sections discuss each of these challenges and issues in more detail.

Diversity of the ESL Student Population

Community colleges have enrolled, in ever increasing numbers, immigrant students, students from low-income backgrounds, students of color, and adult learners (Brilliant, 2000; Bryant, 2001; Grubb, 2006; Swail, Redd, & Perna, 2003). A growing proportion of students at community colleges are also adult learners, who as a group are also diverse in their needs, including their educational and career goals (Donaldson & Townsend, 2007; Levin, 2007).

Immigrants come to the U.S. from all parts of the world (Chisman & Crandall, 2007). In recent years the largest group has come from Latin America, with half of these Latin American immigrants coming from Mexico (Covington Clarkson, 2008). In addition, approximately one-fourth of recent immigrants have come from Asian countries including China, Korea, India, the Philippines, and other areas of Southeast Asia, while a smaller proportion come from European and African countries (Rong & Fitchett, 2008). Immigrants cite several different reasons for emigrating to the U.S., including political asylum, joining other family members, and hopes for economic and educational

opportunity; yet, once they arrive in the U.S. they face multiple and various barriers to academic and economic opportunities (Lee & Edmonston, 1994). The current hostile environment, due to a nationwide "anti-immigration movement," has further exacerbated the challenges that face immigrant students (Covington Clarkson, 2008, p. 22).

One of the challenges to understanding the diversity of the ESL student population is higher education's established practice of aggregating data, which can mask students' unique backgrounds and differences in educational attainment (Teranishi, 2004). For instance, Asian American students are often typecast as the model minority, which has disguised the low educational attainment rates and academic challenges for specific sub-groups (Lee, 2001). One way that researchers have sought to define and distinguish between various student groups and their needs is by categorizing students according to generational status or by the circumstances that brought them to the U.S. (e.g., refugees, foreign study) Harklau et al. (1999), for example, describe four main groups of immigrant students. The first, "Generation 1.5 students" is used to describe long-term immigrants or American-born children of immigrants who reside in non-English speaking communities. Generation 1.5 students have completed most of their schooling in the United States, yet continue to struggle to reach English language proficiency in college-level academic work. A second population consists of recent immigrants who may or may not have developed first language literacy, and who have completed, typically, only a few years of secondary schooling in the United States. A third population consists of

international students who are in the U.S. on a student visa and who possess academic literacy in their first language, but need language instruction in order to succeed academically in college-level courses taught in English. The fourth population includes long-term adult immigrants who pursue a career or have a social objective for which they need advanced English language skills.

Another way of understanding the ESL population is described by Kuo (1999) who distinguishes between two groups of ESL students: "those who study English for immediate…job marketability and those who view English acquisition as a step toward eventual transfer to a four-year institution" (p. 71). Kuo further notes that since the needs of these students vary, community college ESL programs need to provide both functional and academic English courses and dedicate time to evaluate practices of serving and supporting the varying needs of their students, an issue discussed in the following section.

Assessment and Placement of English Language Learners

One of the main issues related to the placement of ESL students is the lack of adequate and consistent assessment instruments to determine levels of English proficiency and improvement in that few English language assessment instruments have been designed exclusively for use with college-level or adult ESL students (Chisman & Crandall, 2007). A common problem with these instruments is that they attempt to determine overall levels of English proficiency by measuring only some core ESL skills. Furthermore, many community college ESL programs choose to adopt homegrown

assessment instruments that measure fewer English language skills at a lower cost (for example, reading and grammar tests), or use instruments that are mandated by a particular funding source, rather than choosing an instrument that measures the overall language skills of an individual learner or an instrument that reflects particular instructional goals (California Teachers of English to Speakers of Other Languages, 2000; Crandall & Sheppard, 2004). Indeed, a recent report indicates that despite writing theory and research supporting the use of writing samples in the assessment and placement of ESL students for writing courses, fewer than 40 percent of California community colleges employ a writing sample due to the amount of money and time needed to evaluate them (Intersegmental Committee of the Academic Senates, 2006). Nonetheless, assessment instruments that do not measure an ESL student's abilities fully, or offer a misinterpretation of the results of those instruments, may lead to inappropriate ESL course placements and unnecessary delays in ESL students' progress through degree programs (Harklau et al., 1999).

Institutional strategies related to ESL student assessment and placement are often fraught with problems. According to the California Teachers of English to Speakers of Other Languages (2000), in California's community colleges matriculating students must self-identify as an ESL student to enroll in ESL courses. Self-identified ESL students are then asked to take a pre-enrollment ESL proficiency assessment, which often differs from college to college, in order to place them in the appropriate level of ESL or other academic courses. This self-identification strategy is often problematic, however, as

some students (frequently Generation 1.5 students) are reluctant to identify themselves as ESL learners due to a perceived stigma at that institution. Furthermore, large numbers of Generation 1.5 students do not fit neatly into an ESL or native-speaker category, and thus many of these students enroll in basic skills courses instead of ESL classes. Such strategies and practices are likely misguided, as the early and accurate identification and placement of ESL learners determines which set of services, assessment measures, and types of courses are available to each student (California Community Colleges, 2007; Harklau et al., 1999).

Increasing Learning Gains

One of the major challenges community college ESL programs face is devising ways to increase ESL students' learning gains. As Chisman and Crandall (2007) note, only 36% of adult community college ESL students advanced one or more levels during the 2003-04 academic year. Furthermore, four-year institutions find that transfer students from community colleges continue to demonstrate significant second-language writing problems (Intersegmental Committee of the Academic Senates, 2006).

Major barriers to increasing learning gains include instructional time and instructional methods (Chisman & Crandall, 2007; Condelli, 2004; Kuo, 1999, 2000). The Mainstream English Language Training Program (described in Crandall & Sheppard, 2004) estimates that it takes about 100 hours of instruction to move from one level to another in ESL, and between 500 and 1,000 hours for an adult with native language literacy but no prior English to satisfy basic needs, function on a job, and interact in

English on a daily basis. Even more time is required to participate effectively in college academic classes. Nevertheless, most ESL classes meet for only 3 to 6 hours per week (Chisman & Crandall). At that rate of instruction, it would take an average ESL student several years to achieve major learning gains.

Another barrier to increasing learning gains is instructional methods. Scholars in the field of second language learning indicated that learning a language is more than acquiring discrete linguistic skills. Scholars argue that allowing students to connect the structure and mechanics of a language to their own use of English in meaningful contexts will increase their learning gains (Berling, 2005; Kasper, 2000). However, the implementation of contextualized instruction demands faculty time and commitment, collaboration with content-area faculty, and the logistical support and coordination of a centralized administrative structure. As a result, many ESL programs have focused primarily on language mechanics and fail to recognize—or do not have the resources to employ—other aspects involved in language development (Kuo, 1999, 2000).

Faculty Issues

The literature suggests that community college ESL faculty are well qualified for their position and have (at a minimum) a master's degree or teaching certificate in Teaching English to Students of Other Languages (TESOL), applied linguistics, or a related field. Nonetheless, community college ESL programs often rely heavily on part-time faculty in order to reduce program expenditures (Blumenthal, 2002; California Teachers of English to Speakers of Other

Languages, 2000). According to Chisman and Crandall (2007), in many colleges, particularly in non-credit ESL programs, the percentage of part-time faculty is much higher than that of full-time faculty. Furthermore, a heavy reliance on part-time faculty can diminish an ESL program's ability to implement innovative instructional practices, as part-time faculty typically are not rewarded for such work and are provided with few opportunities for professional development. Moreover, non-credit ESL faculty receive lower salaries, benefits, and job security than faculty teaching credit ESL courses. They also do not have access to the same facilities, professional development programs, and opportunities to participate in institutional governance, including the other status indicators of academe granted to full time faculty who teach credit academic ESL courses (Blumenthal, 2002). These status inequities make it difficult to recruit highly qualified and motivated instructors for non-credit programs (Chisman & Crandall, 2007).

Insufficient Funding

Crandall and Sheppard (2004) posit that many of the challenges affecting community college ESL programs have their origin in insufficient funding. They explain that funding for ESL classes primarily comes from federal, state, or local tax revenue and from student tuition and fees. For most colleges, funding levels for ESL programs depend primarily on the number of students they serve, and non-credit ESL programs are particularly vulnerable to insufficient funding, as they may rely only on federal and state funds for adult education. Moreover, the two often have to share the funding streams largely because ESL programs are often

combined with developmental and remedial education (Perin & Charron, 2006),

A lack of funding constrains a college's ability to institute the wide range of ESL courses necessary to meet the needs of its diverse student population. The full-time enrollment (FTE) funding model presents further challenges because it ties funds to student enrollment, thus tying dollars to inputs and creating disincentives for approaches that may yield outcome gains. This funding model has influenced community colleges to serve as many ESL students as possible, which may reduce the amount of time and resources they have to invest in enriched instructional strategies and services (Crandall & Sheppard).

Promising Practices in Community College ESL

In spite of the numerous challenges and issues related to ESL in community colleges, several ESL programs, nationally, are striving to increase students' learning gains through innovative program designs, student services, and instructional practices (Condelli, 2004; Kasper, 2000; Miele, 2003; Wolfe-Quintero & Segade, 1999). The broad range of students from different educational, cultural, linguistic, and immigrant backgrounds has demanded a diverse array of program designs and pedagogical strategies in the classroom (Ferris, 1999; Miele, 2003). This next section now turns to discussing promising practices, those which provide insight into ESL instruction and program design in community colleges and are acclaimed for outcomes.

High Intensity Programs with Managed Enrollment

ESL programs in community colleges vary in administrative structure and in the types of courses offered (Perin & Charron, 2006). In some colleges, ESL courses are provided through a separate ESL department; in others, ESL courses are housed in the developmental education department, the English department, or an adult education division (Blumenthal, 2002). Community colleges typically offer a number of ESL writing courses, as well as a broad range of ESL courses in the other skill areas, including reading, listening, speaking, and grammar (Chisman & Crandall, 2007). Some ESL courses are offered for college credit (although they typically are not transferable to a four-year institution) while other classes do not carry college credit. Distinct credit and non-credit ESL courses and programs can be housed under different administrative structures, serve students with different levels of linguistic proficiency, and have different instructional goals, entry requirements, and funding sources (Crandall & Sheppard, 2004).

Chisman and Crandall (2007) found that enhancing the intensity of instructional time and setting enrollment and exit requirements can increase ESL students' learning gains. They posit that one of the problems with ESL programs, particularly non-credit programs, is the limited amount of instructional time offered; they found that some non-credit programs offered only 3 to 6 hours of instruction per week and had open-entry and -exit policies where students could enroll in any particular class at any time during the year, attend as many hours as they wanted, and drop in and out of classes at will. In their study, ESL programs that have been shown to influence a higher level of persistence among the students in their programs, had up to as many as 25 hours per week of instruction time. Moreover, the additional hours of instruction in these "high-intensity" (p. 30) ESL programs allowed for more time to implement other curricular innovations. The literature notes that with time for additional instructional hours, community colleges are able to meet the needs of different types of ESL students. At the same time, however, the benefits of high intensity programs cannot be realized unless students honor their commitment to attend most of the classes, since these types of high-intensity programs frequently build curricular sequences in which each lesson leads to the next, and in which each course builds on skills learned in the previous class. As a result, these types of programs were the most efficient when they were coupled with managed enrollment, which allowed students to enroll only in the first few weeks of each term and enforced strict attendance and performance policies (Chisman & Crandall; Crandall & Sheppard, 2004).

Extending Learning Beyond the Classroom

Scholars have explored how community colleges can expand the opportunities ESL students have available to use and practice the English language outside the classroom (Berling, 2005; Condelli, 2004). Such opportunities are especially important for the large number of ESL students whose language spoken at home or in their immediate community is not English. Providing opportunities to speak, read, and write in English outside the classroom helps ESL students overcome barriers to apply new English skills in authentic situations, and provides a foundation for them to become

independent learners in real-life situations (Berling; Condelli).

Some of the approaches for extending English language learning beyond the classroom include the use of network technology, which connects students with peers or unknown audiences over a computer, where they can engage in real-life communication or meaningful tasks (Kern & Warschauer, 2000; Warschauer, 1999). Such practices not only provide students with opportunities to use English in real-life communication but also help them develop their electronic literacy, which is crucial in both academia and the workplace. Berling (2005) and Moss and VanDuzer (1998) explored another approach in which students engaged in project-based activities in the community, such as acquiring a library card and checking out a book, publishing a community newsletter, or talking with a college counselor to plan for continuing education. These practices require students to use multiple language skills to solve actual problems, and encourage them to engage in critical reflection as they navigate the various aspects of their academic, vocational, or daily life.

Curricular Integration with College Content Courses

Proficiency in an English-speaking academic environment requires ESL students to be both functionally and academically literate; these students use English to access, understand, articulate, and critically analyze conceptual relationships among various content areas (Carkin, 2005; Kasper, 2000). According to scholars, promising community college ESL programs incorporate cognitive skills for academic productivity, the basic

social skills necessary to navigate the academic environment, and the knowledge of academic content needed for coursework. Instructional designs such as content-based instruction or writing across the curriculum pair an ESL course with a specific academic course enabling instructors of ESL and specific content courses to develop parallel materials and share ideas for course assignments. In such instructional models, ESL students are offered opportunities to review and practice linguistic forms while developing their knowledge of the academic content (Wolfe-Quintero, 1999).

Curricular integration was also found to be an important component of non-credit ESL instruction. For example, some community colleges (e.g., City College of San Francisco and San Diego City College in California) have offered vocational ESL programs in which students learn English language skills that are required by a particular vocation or trade at the same time they are enrolled in an existing vocational program taught in English (Chisman & Crandall, 2007; Crandall & Sheppard, 2004). This practice has provided students with the vocational training necessary to enter or succeed in the workforce as well as opportunities to practice their English in authentic situations. A longitudinal analysis of City College of San Francisco's adult ESL program showed that students who were concurrently enrolled in vocational or other content courses were more than three times as likely as students enrolled only in ESL to make the transition to higher-level academic ESL courses. They were also more likely to advance to higher levels of education in other credit areas. As such, integrating content courses with ESL instruction (either in credit or non-credit ESL programs) increases

learning gains and reduces the amount of time ESL students spend in order to reach their academic or vocational goals (Chisman & Crandall).

Enhanced Student Support Services

The provision of enriched counseling and support services is viewed as important in helping ESL students make the transition from non-credit to credit ESL or from credit ESL to college-level academic or vocational courses (California Teachers of English to Speakers of Other Languages, 2000; Chisman & Crandall, 2007; Intersegmental Committee of the Academic Senates, 2006). These services, for example, include orientation and enrollment advising, counseling, tutoring, and career services. California Teachers of English to Speakers of Other Languages (2000) note that one imperative feature of enhanced support services is the provision of adequate training for counselors and tutors so that they can meet English language learners' needs. Such training would include skills in cross-cultural communication, knowledge of second language learning processes, and current information on ESL-related entrance requirements at four-year institutions.

While community colleges provide support services to international students, many of these services are not readily available to Generation 1.5 and immigrant ESL students (Intersegmental Committee of the Academic Senates, 2006). Experiences from some colleges, however, showed that with enhanced support services immigrant ESL students were able to overcome the social, academic, and career barriers to intensive English language study (Chisman & Crandall, 2007; Crandall & Sheppard, 2004). For example, Chisman and Crandall note that

innovative adult ESL programs utilize student services personnel to explain college opportunities, requirements, and enrollment procedures to immigrant ESL students. They also provide immigrant ESL students with guidance and support in career placement and ensure students access to a learning center.

Moreover, some colleges have collaborated with community-based organizations to recruit immigrants for further education or enhance the support services tailored to the needs of adult immigrant students. For example, one adult ESL program has worked with public schools and family literacy programs to provide childcare and a community assistant to help ESL students overcome barriers to ESL study (Crandall & Sheppard). Such enhanced support services can help adult immigrant ESL students understand the educational pathways available to them and maximize their persistence and learning gains.

Recruiting and Retaining ESL Faculty

Even the best-designed ESL programs will not succeed without highly trained instructors to implement them, as effective ESL instruction requires specialized professional and pedagogical knowledge. To offer a high quality ESL program, community colleges are urged to recruit ESL faculty who are informed about English linguistics, second language acquisition, TESOL methodologies, and cross-cultural communication (California Teachers of English to Speakers of Other Languages, 2000). Furthermore, community college ESL programs can make high quality ESL instruction a priority by offering prospective faculty full-time employment, salaries that are on par with other college

faculty, and benefits. Moreover, colleges are encouraged provide ESL faculty with opportunities for ongoing professional development, and establish faculty resource centers and websites that can provide a range of teaching and assessment materials, as well as opportunities to communicate and share program information with colleagues (Chisman & Crandall, 2007). Finally, community colleges are wise to provide incentives for part-time faculty to participate in curriculum development, and reward their participation in professional development and career advancement activities (Kozeracki, 2005; Levin, Kater, & Wagoner, 2006).

Centralized Administration

As noted earlier, ESL instruction is not always delivered through a central ESL department. Indeed, many colleges offer multiple ESL programs (credit, non-credit, developmental/remedial, vocational, adult, and college-level) with each housed under a different administrative structure (Crandall & Sheppard, 2004; Intersegmental Committee of the Academic Senates, 2006). When ESL programs are housed in divisions of continuing education or English departments, they may have limited influence on policies that directly affect ESL students. Centralized ESL administration—where all ESL courses are housed under a central ESL department or division—may allow for different ESL sequences to articulate with one another and facilitate curricular integration, budgetary planning, and the dissemination of material and human resources. A centralized administration may also make it easier for ESL students to understand their ESL course options, set goals, access appropriate services, and move from one level or type of

program to another (California Teachers of English to Speakers of Other Languages, 2007). Finally, ESL programs that are led by an administrator who can operate as a peer to other department heads and participate in college-wide planning and budgeting are more likely to have adequate funding and are more able to implement and sustain innovative program designs and instructional practices (Crandall & Sheppard).

Commitment to Continuous Program Improvement

Although innovative practices adopted by community college ESL programs can increase the effectiveness of ESL instruction substantially and enhance ESL students' learning experiences, innovative practices introduced by individual faculty members, or developed in response to a specific grant or contract, can become mere "episodic changes" (Chisman & Crandall, 2007, p. 108). Thus, in order to implement and sustain promising practices to improve student learning, community colleges are recommended to commit to systemic planning and assessment. ESL faculty and administrators are expected to revise their goals and expectations, continually, assess their strengths and weakness, and establish both long-term and short-term plans and priorities (Chisman & Crandall; Intersegmental Committee of the Academic Senates, 2006). In other words, strategic planning must become an ongoing and institutionalized process in community college ESL programs. Assessment data, particularly longitudinal data, become important in gauging how effectively programs increase student learning gains in all areas of ESL instruction (reading, writing, speaking), improve retention, and facilitate

student transition. Finally, funding for program improvement projects and professional development, as well as criteria for rewarding faculty and staff for improvement in student learning gains, retention, and transition are also important issues for community college leaders and policymakers to consider (Chisman & Crandall).

Conclusions

Since community colleges are the primary pathway for immigrants to advance their education and job skills in the United States, access to ESL instruction plays a significant role in assisting immigrant students to overcome the social, cultural and linguistic barriers in their academic and/or career endeavors. Effective ESL instruction will connect immigrant students to academic or career programs in community colleges and open the gate to social and economic well-being. Nevertheless, the challenges faced by community college ESL programs, such as inappropriate assessment instruments, inadequate funding models, unequal faculty status, insufficient instructional hours, and ineffective instructional strategies, frequently reduce the capacity of the programmatic design and the quality of ESL instruction. Consequently, immigrant students are limited in their access to further education and employment or their educational pathway is prolonged if they persist with post secondary education.

Keeping pace with the educational needs of a diverse student population is a major and daunting challenge for community colleges. This literature review has touched on ways that community colleges can bypass the structural restrictions to implement and sustain innovative programmatic design and/or instructional practices to improve ESL learning gains and student persistence. Further research, however, is needed to expand current understandings of effective and exemplary ESL programs and identify how promising practices are institutionalized within the college, including the process and practices needed in order for ESL programs to adopt these practices. Only when community colleges are able to provide effective ESL instruction and sufficient support services to assist immigrant students in developing the language competencies they need in their academic and vocational pathways will these students have equal access to further education and employment.

References

Berling, L. N. (2005). *Contextualizing college ESL praxis: A participatory approach to effective instruction.* Mahwah, NJ: Lawrence Erlbaum Associates.

Brilliant, J. J. (2000). Issues in counseling immigrant college students. *Community College Journal of Research and Practice, 24*(7), 577-586.

Blumenthal, A. J. (2002). English as a second language at the community college: An exploration of context and concerns. In T. H. Bers & H. D. Calhoun (Eds.), *Next steps for the community College. New directions for community college, no. 117* (pp.45-53). San Francisco: Jossey-Bass.

California Teachers of English to Speakers of Other Languages. (2000). *California pathways: The second language student in public high schools, colleges, and universities.* Orinda, CA: Author.

Retrieved Aug. 10, 2007 from: www.catesol.org/pathways/pdf.

Carkin, S. (2005). English for academic purposes. In E. Hinkel (Ed.), *Handbook of research in second language teaching and learning* (pp.85-98)*. Mahwah, NJ: Lawrence Erlbaum Associates.

Capps, R.; Fix, M.; Henderson, E.; & Reardon-Anderson, J. (2005). A profile of low-income working immigrant families. Washington, DC: Urban Institute. Retrieved July 18, 2008 from: http://www.urban.org/publications/311206.html

Chisman, F. P., & Crandall, J. (2007). *Passing the torch: Strategies for innovation in community college ESL*. New York: Council for the Advancement of Adult Literacy.

Cohen, A. M., & Brawer, F. B. (2003). *The American community college* (4th ed.). San Francisco: Jossey-Bass.

Condelli, L. (2004). *Effective instruction for adult ESL literacy student: Findings from the what works study.* Washington, DC: American Institute for Research. Retrieved Aug. 1, 2007 from: http://www.nrdc.org.uk/uploads/documents/doc_54.pdf.

Covington Clarkson, L.M. (2008). Demographic data and immigrant student achievement. *Theory into Practice, 47*, 20-26.

Crandall, J., & Sheppard, K. (2004). *Adult ESL and the community college.* New York: Council for the Advancement of Adult Literacy.

Donaldson, J., & Townsend, B. K. (2007). Higher education journals' discourse about adult undergraduate students. *Journal of Higher Education*, 78(1), 27-50.

Ferris, D. R. (1999). One size does not fit all: Response and revision issues for immigrant student writers. In L. Harklau, K. M. Losey, & M. Siegal (Eds.), *Generation 1.5 meets college composition: Issues in teaching of writing to U.S.-educated learners of ESL* (pp.143-157)*. Mahwah, NJ: Lawrence Erlbaum Associates.

Harklau, L., Siegal, M., & Losey, K. M. (1999). Linguistically diverse students and college writing: What is equitable and appropriate? In L. Harklau, K. M. Losey, & M. Siegal (Eds.), *Generation 1.5 meets college composition: Issues in teaching of writing to U.S.-educated learners of ESL* (pp.1-14)*. Mahwah, NJ: Lawrence Erlbaum Associates.

Ignash, J. M. (2000). Linguistic diversity, immigration, and today's undergraduates: Demographics. In J. W. Rosental (Ed.), *Handbook of undergraduate second language education* (pp. 3-27)*. Mahwah, NJ: Lawrence Erlbaum Associates.

Intersegmental Committee of the Academic Senates of the California Community Colleges, California State University, and the University of California. (2006). *ESL task force report: ESL*

students in California public higher education. Sacramento, CA: Intersegmental Committee of the Academic Senates.

Kasper, L. F. (Ed.). (2000). *Content-based college ESL instruction.* Mahwah, NJ: Lawrence Erlbaum Associates.

Kern, R., & Warschauer, M. (2000). Theory and practice of network-based language teaching. In M. Warschauer, & R. Kern, (Eds.), *Network-based language teaching: Concepts and practice* (pp.1-19). New York: Cambridge University Press.

Kozeracki, C. A. (2005). Preparing faculty to meet the needs of developmental students. In C.A. Kozeracki (Ed.), *Responding to the challenges of developmental educations. New Directions for Community Colleges,* no. 129 (pp. 39-49). San Francisco: Jossey-Bass.

Kuo, E. W. (1999). English as a second language in the community college curriculum. In G. Schuyler (Ed.), *Trends in the Community College Curriculum. New Directions for Community Colleges, no. 108* (pp. 69-80). San Francisco: Jossey-Bass.

Kuo, E. W. (2000). *English as a second language: Program approaches at community colleges.* Los Angeles: University of California, Los Angeles, ERIC Clearinghouse for Community Colleges. (ERIC Document Reproduction Service No. ED 447 859)

Lee, S.J. (2001). More than "model minorities" or "delinquents": A look at Hmong American high school students. *Harvard Educational Review, 71*(3).

Lee, S.M., & Edmonston, B. (1994). The socioeconomic status and integration of Asian immigrants. In B. Edmonston and J.S. Passel (Eds.), *Immigration and ethnicity: The integration of America's newest arrivals* (pp. 101 – 138). Washington, D.C.: Urban Institute Press.

Levin, J. S. (2007). *Non-traditional students and community colleges: The conflict of justice and neo-liberalism*. New York: Palgrave Macmillan.

Levin, J., Kater, S., & Wagoner, R. (2006). *Community college faculty: At work in the new economy*. New York: Palgrave.

Moss, D., & Van Duzer, C. (1998). *Project-based learning for adult English language learners.* Washington, DC: ERIC Clearinghouse for ESL Literacy Education.

Miele, C. (2003). Bergen Community College meets Generation 1.5. *Community College Journal of Research and Practice, 27,* 603-612.

Perin, D. & Charron, K. (2006). "Lights Just Click on Every Day". In T. Bailey & V. S. Morest (Eds.), *Defending the community college equity agenda* (pp. 155-194). Baltimore, MD: The Johns Hopkins University Press.

Rong, X.L., & Fitchett, P. (2008). Socialization and identity transformation of black

immigrant youth in the United States. *Theory into Practice, 47*(1), 35 – 42.

Sum, A., Fogg, N., & Harrington, (2002). *Immigrant workers and the great American job machine: The contributions of new foreign immigration to national and regional labor force growth in the 1990s.* Boston, MA: Center for Labor Market Studies, Northeastern University. Retried on July 18, 2008 from http://www.businessroundtable.org/publications/

Teranishi, R. T. (2004). Yellow and Brown: Residential segregation and emerging Asian American immigrant populations. *Equity and Excellence in Education, 37*(3), 255-263.

Warschauer, M. (1999). *Electronic literacies: Language, culture, and power in online education.* Mahwah, NJ: Lawrence Erlbaum Associates.

Wolfe-Quintero, K., & Segade, G. (1999). University support for second-language writers across the curriculum. In L. Harklau, K. M. Losey, & M. Siegal (Eds.), *Generation 1.5 meets college composition: Issues in teaching of writing to U.S.-educated learners of ESL* (pp.191-209)*.* Mahwah, NJ: Lawrence Erlbaum Associates.

Transfer and STEM Transfer Education Literature Review

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Since their formally recognized emergence in the early twentieth century, community colleges included transfer to four-year colleges and universities among their primary missions (Cohen & Brawer, 2003; Dougherty & Kienzl, 2006; Townsend & Wilson, 2006). According to Townsend (2001) transfer education was the central mission of the early junior college concept, where students took the first two years of an undergraduate degree and transferred to a four-year institution to complete the baccalaureate degree. Over time, depending on the student's program of study, completion of the first two years could as well be certified either by the Associate of Arts (A.A.) degree or more specialized Associate of Science (A.S.) degree.

In the last decade, the decline of need-based financial aid, rising tuition, and the reduction of remedial education at four-year colleges and universities generated renewed interest in the transfer mission of community colleges (Cohen, 2003; Dougherty & Kienzl, 2006; Parker, 2007; Wellman, 2002). State governments have increasingly utilized the transfer function of community colleges as a cost-effective way to promote access to the baccalaureate degree (Ignash & Townsend, 2001). According to Doyle (2006), 40 percent of all first time freshmen in 2006 began their postsecondary careers in community colleges, with the great majority of the students expressing an intention to complete a bachelor's degree.

The importance of the transfer mission is evident in California's public system of higher education, where the Master Plan for Higher Education (University of California, Office of the President, 1960) dictates that the community college is to provide academic and vocational instruction through the first two years of undergraduate education, admitting "any high school graduate or any other person over eighteen years of age... capable of profiting from the instruction offered" (p. 70). Community colleges—in California and elsewhere—have enabled many students, especially those from economically or educationally disadvantaged backgrounds, to gain the academic preparation needed to attend a university and complete a bachelor's degree (Shaw & Jacobs, 2003).

Jacobs (2004) described the various types of transfer that occurs between institutions (e.g., vertical, horizontal, reverse, and gypsy), with transfer from a community college to a four-year institution defined as vertical transfer. While there are large numbers of students who aspire to transfer, however, many do not take the necessary steps needed to transition successfully to a four-year institution (Hagedorn, Moon, Cypers, Maxwell, & Lester, 2006). A recent report by the California Postsecondary Education Commission (CPEC) (2007) found that only 22% of community college students tracked over a five-year period transferred to

one of California's public universities and 52% of students left the community college system without transferring or earning a degree. While the community college transfer rate in California appeared relatively stable, they found that the transfer rate did not increase at the same rate as student enrollment (California Community Colleges, 2007; CPEC, 2002). Moreover, transfer rates were not consistent among socioeconomic, racial, and ethnic groups; low-income students and those of African American, Native American, or Latino descent transferred to four-year colleges and universities at rates significantly lower than their white, Asian, and more affluent peers (CPEC, 2007).

Low transfer rates are especially evident in the fields of science, technology, engineering, and mathematics (STEM). Latinos, African Americans, and women are especially underrepresented within these fields, and the U.S. Department of Education has made several efforts to increase their participation in these academic disciplines (Kane, Beals, Valeau, & Johnson, 2004). Furthermore, the Department of Education has worked to improve the quality and rigor of students' education in these fields. Such efforts are primarily due to: (1) a new global economy that requires a workforce trained in the scientific and technological fields (Toulmin & Mehan, 2007), and (2) an increase in jobs requiring technological understanding of facilities technology, digital systems, telecommunications, and other systems (Lawrenz, Keiser, & Lavoie, 2003). In response to these pressing national demands, the House Committee on Science, Space and Technology created the Scientific and Technical Education Act of 1992, which authorized the National Science Foundation (NSF) to fund various programs aimed at making improvements in STEM education (United States Congress, 1992).

The NSF (Tsapogas, 2004) reports that nearly 44% of all STEM bachelor's degree holders have attended community college, which, on its face, suggests that community college transfer plays a large role in the educational experiences of these students. What remains unclear, however, is the proportion of these degree holders that access STEM bachelor's degrees via vertical transfer from community colleges. As some have cautioned (MacLachlan, 2007; Malcom, 2008), these figures may give a false sense regarding the size of transfer pathways to four-year degrees among STEM majors. In fact, a larger proportion of these students seem to have taken coursework for credit at the community college while already matriculated in a four-year degree program (Tsapogas, 2004). Thus, while community colleges certainly play an important role in the education of STEM graduates, these figures are not necessarily demonstrative of large community college transfer pathways in science-related fields.

In STEM and other academic disciplines, the traditional path to transfer in California involves completing two years of academic coursework at the community college and then transferring as an upper-division student to a California State University campus, University of California campus, or other four-year institution. However, recent data showed that the vast majority of transfer students (77%) take only a few courses at the community college, transferring to a university well before achieving upper-division status (Horn & Lew, 2007). These data call the traditional community college transfer mission of providing an avenue to the baccalaureate for

under-prepared and under-privileged students into question, as many of the students who transfer before completing their lower-division coursework are more academically prepared, from a higher socioeconomic background, and more knowledgeable about how to move through the higher education system than "traditional" transfer students, for whom the community college may be the only available pathway to the baccalaureate.

Researchers, policymakers, and practitioners have acknowledged that community colleges "are not being fully utilized as gateways" of transfer to four-year institutions (CPEC, 2007, p. 2). In response, community colleges have designed transfer programs to serve specific groups of students, often from underrepresented backgrounds in various disciplines, in order to improve the transfer mission and help more students attain the baccalaureate. We discuss many of these promising practices after a more in-depth discussion of the primary challenges and issues in community college transfer education.

Challenges and Issues in Community College Transfer Education

There are several issues inherent to community college transfer education, including the lack of a consistent definition of transfer, inequitable transfer outcomes among students, a lack of academic and social integration, a lack of curricular alignment and articulation with four-year universities, ineffective course-taking patterns, challenges with student financial aid, and policy barriers at four-year colleges and universities. Before describing promising practices that facilitate community college transfer education and

STEM transfer education, these challenges will each be discussed briefly.

Inconsistent Definition of Transfer

One of the primary challenges in the research on student transfer and in the improvement of transfer rates at community colleges lies in the lack of consensus on a definition of a transfer rate (Hagedorn et al., 2006; Townsend, 2002). Transfer can be defined in many ways, and thus, examinations of transfer rates often have contradictory results (Doyle, 2006). As Spicer and Armstrong (1996) explained, "Although it is generally agreed that the transfer rate is the ratio of students who transfer (numerator) to the potential number of transfer students (denominator), there is little agreement on what constitutes a potential transfer student, the denominator of all models" (p. 45). Doyle (2006) posited that a useful transfer rate indicator 1) provide a performance benchmark; 2) be easily understood by a broad audience; and 3) be feasible in terms of the cost, time, and expertise needed to collect the information in a reliable manner.

Inequitable Transfer Outcomes

Another primary transfer-related challenge at community colleges relates to vastly inequitable transfer outcomes among students. In short, the students who ultimately transfer are not representative of the community college population: they are more likely to be from a higher socioeconomic class, more likely to have parents who attended college, and less likely to be African American, Native American, or Latino (CPEC, 2007; Dougherty & Kienzl, 2006; Nora & Rendon, 1990; Perrakis, 2008). The effects of gender have changed over the past three decades. In the 1970s and 1980s, male students were more likely than females

to transfer (Lee & Frank, 1990; Velez & Javalgi, 1987). However, recent research in California indicates that more women than men transfer to four-year institutions or earn community college degrees or credentials (CPEC, 2007; Horn & Lew, 2007). According to Hagedorn et al., (2006) this finding may be partially explained by the fact that more women than men complete the lower-division English requirements necessary to transfer.

African American, Latino, Native American, and low-income students are especially underrepresented in STEM disciplines (Bailey, Matsuzuka, Jacobs, Morest, & Hughes, 2004). As such, students from these groups—especially low-income students—have faced a number of obstacles that hinder transfer and degree completion, including a need to work to support themselves or their families, which may make completion of STEM courses more difficult and slows their progress toward transfer or a community college degree (Kane et al., 2004).

Students' academic intentions also affect their likelihood of transferring to a four-year institution. According to Cohen (1995), incoming students who indicated that transferring to a four-year college was their primary objective tended to transfer at higher rates, while those who entered the community college in order to gain job skills in order to immediately enter the labor market had lower transfer rates. Another study by Bettinger and Long (2005) found that both full- and part-time students enrolled in remedial coursework were less likely to complete two- or four-year degrees, and were less likely to transfer to a four-year institution, compared to their counterparts. Among part-time students, however, those in remediation completed more credit hours on

average than non-remedial part-time students.

In a similar study of transfer students, Doyle (2006) found that the longer a student was enrolled, the less likely they were to graduate. He posited that family and work obligations begin to take precedence over a college career that has lasted six years. Lee and Frank (1990) also found that students who were less satisfied with their job and/or who completed a college-prep or academic curricular track in high school were more likely to transfer than students who were satisfied with their jobs or who did not take college-prep courses in high school. Not surprisingly, students' academic performance was also found to influence the likelihood of transferring. Adelman (1999) found that the rigor of a student's high school coursework is the most significant predictor of eventual transfer to a four-year institution. Moreover, high school students who completed courses in higher-level mathematics, science, and English were more likely to transfer than those who did not (Adelman; Hagedorn et al., 2006; Lee & Frank).

Lack of Academic and Social Integration

A student's likelihood of transferring to a university is also affected by how integrated they become into the community college's academic and social environment (Bryant, 2001; Nora & Rendon, 1990; Zamani, 2001; see Dougherty & Kienzl, 2006 for an alternative perspective). Academic and social integration can include meeting with faculty outside of class; participating in study groups; becoming involved in learning communities; meeting with counselors, advisers, or tutors; joining a student club or organization; and other such activities (Astin, 1993). Despite the importance of academic and social

integration, Flowers (1996) found that community college students were often much less involved in these types of activities than students at four-year institutions. Flowers suggested that this was likely due to other responsibilities of community college students, particularly commuter students who held jobs outside of school and/or took care of families. He also suggested that the lack of community colleges' out-of-class involvement was due to the high percentage of part-time faculty on community college campuses not compensated or rewarded for holding extra office hours, leading student organizations, and so forth.

Lack of Curricular Alignment and Articulation

Community colleges face transfer-related challenges at the institutional and policy levels (Cuseo, 1998), and these ultimately affect students and student outcomes (Shulock & Moore, 2007). Cuseo argued that problems related to curricular alignment and articulation between community colleges and universities are among the major barriers to transfer. Many academic courses offered in community colleges are not transferable, and some four-year universities refuse to accept transfer courses that are not identical to their own. Furthermore, four-year institutions rarely consider the effects on community colleges and transfer students when they modify their curricula; these changes may affect a student's ability to transfer, but too often little or no information is provided to community colleges when such curricular decisions are made. College deans or department chairs at the senior institutions, especially those in high-demand disciplines, did not always adhere to articulation agreements among community colleges and four-year colleges. The lack of cohesion and

communication between community colleges and four-year colleges in designing clear, easy-to-follow articulation agreements create significant obstacles for students who intend to transfer from one institution to another (Boswell, 2004).

Ineffective Course-Taking Patterns and Advising

The disconnection between community colleges and four-year institutions is accompanied by inappropriate course taking patterns of students and inaccurate information provided by community colleges, which may be a result of or accompanied by inadequate or limited communication from four-year institutions. Deil-Amen and Rosenbaum (2003) found that students experience challenges in finding accurate information regarding the courses approved for transfer. They also found that transfer plans were delayed for students who received poor and/or contradictory counseling from different counselors who rarely knew the students they advised on any long-term basis. Students in their study, when they were able, relied on individuals outside of the community college (e.g., other students, older siblings). According to Deil-Amen and Rosenbaum, the students who did not have access to these knowledgeable individuals found that poor information extended their time in college.

Insufficient Financial Aid

The lack of financial aid available to transfer students is another barrier to transfer. Indeed, the well-documented shift "from need-based to merit-based financial aid makes it increasingly difficult for low-income students to qualify for financial aid…. There is also limited or no portability of financial aid for students transferring from one institution

to another" (Boswell, 2004, p. 26). Furthermore, few scholarships are designated specifically for transfer students, and the difference between tuition and fees at a community college and a four-year institution can be daunting for many students (Cuseo, 1998). As well, transfer students are frequently notified of their acceptance to a university after the deadline to file for financial aid has passed, forcing these students to delay entering the university or pay tuition and fees out of pocket. According to Cuseo, these financial aid issues can affect a student's ability and willingness to transfer to a four-year college or university.

Policy Barriers at Four-Year Colleges and Universities

Finally, some four-year college and university policies act as barriers to transfer. These policies include requiring transfer students to take standardized tests before entering the university, giving transfer students low priority in course registration, completing transcript analyses after transfer students have already enrolled in their first semester of classes at the four-year institution, and denying academic honors to community college transfer students (Cuseo, 1998). All of these policies can hinder students' transfer progress, and some may even discourage transfer students from applying or transferring to specific four-year institutions. Although community colleges have little control over these practices and policies, there is no doubt that they affect transfer rates, and many community colleges are working collaboratively with four-year institutions to address these policies and ease students' transitions from community colleges to four-year colleges (Boswell, 2004).

Promising Practices in Community College Transfer Education

Community college practitioners have developed a number of promising practices related to transfer. Some of these practices, including providing programs and services that help to integrate students into the academic and social fabric of the college, work to mitigate some of the socioeconomic or academic preparedness barriers individual students face. Other practices, such as ensuring adequate information about transfer and improving institutional alignment, seek to address institutional and policy barriers to transfer.

Academic and Social Engagement

As noted previously, researchers have explored the role that academic and social engagement can play in promoting student transfer (Bryant, 2001; Nora & Rendon, 1990; Zamani, 2001). Several community colleges have instituted programs to promote student engagement. For example, Laanan (1996) noted that workshops or orientation sessions that inform students on the transition to a four-year institution can be effective in facilitating academic transfer. Such workshops may include descriptions of college life at four-year universities, and may include information about how administrative offices work on campus (Laanan). Workshops that provide students with exposure to particular types of computer software were also effective in helping students transfer as they exposed students to the types of technology they will need to be familiar with upon arrival at a university (Kozeracki & Gerdeman, 2000; Phillippe & Valiga, 2000). In reporting on data from 245 community colleges, Phillippe and Valiga found that 11 percent of credit and 30

percent of non-credit students had never used the Internet. The need for student exposure to computer technology is evident, and organized workshops would not only promote student engagement, but would also serve to better prepare community college students for their upcoming technologically oriented classes at universities.

Student peer mentoring programs also demonstrated positive results in improving student engagement and transfer. Mentoring programs connect incoming community college students with more experienced peers who are available to answer questions and explain specific concepts that can help facilitate students' understanding of course material and, thus, assist in their transition to community college life (Peterman, 2003).

Advising

Arguably advising and counseling have influence on student behaviors and outcomes. Quality advising can play a key role in improving transfer (Deil-Amen & Rosenbaum, 2003). Zamani (2001) showed that the courses students take, and the sequence in which they are taken, appear to affect transfer outcomes. Zamani found that not only do students take courses that are not transferable (which prolongs the path to transfer) but many students do not take the proper English, mathematics, and science courses needed to transfer in a timely manner. According to Zamani, unproductive course taking is the result of ineffective or unavailable academic advising or counseling.

In the California context, Hagedorn et al. (2006) found that counseling helps students obtain the valuable information they need about course modules, deadlines, and prerequisites that can help guide them into

productive tracks and ultimately help them transfer (Hagedorn et al, 2006). The California Postsecondary Education Commission (2007) showed that counseling programs targeting students from backgrounds that traditionally exhibit lower levels of transfer and degree completion may increase overall transfer rates among these groups. McGlynn (2006) found that counseling and mentoring programs helped to engage students in the academic and social life of the college, while providing a "nurturing environment" that supports students along in attaining their educational goals.

Student affairs practitioners, often overlooked in student academic outcomes, affect transfer of students. Culp (2005) specifically examined the role of student affairs practitioners in improving advising for community college students. Culp noted the importance of partnerships between faculty and student affairs practitioners in encouraging students to remain enrolled and accomplishing their educational goals. She further posited that student affairs practitioners and faculty work together to utilize technology in ways that can provide useful information to improve student retention and transfer. For example, technology can be helpful in engaging students in their learning by providing useful course information or reports detailing their progress towards completing specific degrees.

Greater information about student progress after transfer also allows for the assessment and evaluation of articulation agreements, which can then be used to improve practices and processes at (Culp, 2005). Creation of systems that track transfer students and assess the transfer and

retention rates of students who transferred in different disciplines (i.e. humanities, natural sciences, or professional programs) would provide community colleges and their faculty and administrators with information about how these students fare upon transfer. This information may also help colleges assess the progress they have made in their efforts to increase student transfer (Culp). As well, university feedback on the achievement, adjustment, and satisfaction of transfer students from a given community college—compared to students who started at the university or those who transferred from a different institution—could provide community colleges with information about how their transfer faculty and staff might work to bolster the transfer process as a whole. Furthermore, Cuseo (1998) posited that assessments of the effectiveness of university entrance tests and course placement procedures for transfer students be conducted to provide community colleges with useful feedback about how to prepare students for such procedures.

Consistent Information about Transfer and Course Taking

Providing students with clear and easy-to-understand information about the prerequisites and other necessary courses required for transfer can arguably reduces student confusion, and reduces the incidence of their enrolling in non-transferable courses (CPEC, 2002). Colleges employing visible and vigorous transfer center staff, as well as faculty who have high expectations of transfer, can help to provide students with the information they need to transfer (Cohen, 1995). Colleges can also work to improve the accessibility of transfer information by making it available to students and their families over the Internet (CPEC, 2005).

Furthermore, Kozeracki and Gerdeman (2000) found that requiring faculty to use e-mail and the Internet in their courses can facilitate student exposure to the types of computer programs and software that they will need to use regularly at four-year institutions. Such practices within community colleges may serve to narrow the digital divide between students at two-and four-year institutions by providing community college students with the type of computer skills that will be required in university classes (Phillippe & Valiga, 2000).

Alignment between Community Colleges and Four-Year Colleges

Improving institutional alignment between community colleges and four-year colleges has also been shown to improve transfer (Boswell, 2004) The development of common course numbering systems and common expectations for lower-division curricula across state institutions can greatly ease the transferability of courses from one institution to another (Boswell, 2004). Joint admission and concurrent enrollment programs were shown to help facilitate transfer (Cohen, 1995), and stronger articulation agreements between institutions can help to reduce barriers to transfer (CPEC, 2005; Cohen). In the state of California, one program promoting these efforts is the California Articulation Number System (CAN). The CAN program was designed "as a cross-reference course identification for a common core of lower-division, transferable, and major preparation courses commonly provided on California community college and California State University campuses" (CPEC, 2005, p. 11). CAN was initiated to reduce the need for every campus to

articulate their lower division curricula with every other campus in the state.

Developing pre-major articulation agreements in addition to institutional articulation agreements can help to reduce student confusion, as well as the possibility that students have to repeat courses already taken at the four-year institution. The California Postsecondary Education Commission (2005) suggested creating "faculty curriculum committees by academic discipline to negotiate articulation agreements for academic majors" (p. 9). These articulation agreements may resolve issues students encounter when attempting to transfer into academic departments at four-year universities, such as math and sciences programs, which traditionally have highly selective admissions requirements. In situations where there are no formal articulation agreements, CPEC has encouraged community colleges to work with nearby institutions to create voluntary agreements on student flow and articulation efforts (CPEC, 2005). Furthermore, community colleges can work with nearby universities to assess annual transfer capacity and share data on the progress of each transfer student once they have arrived at the senior institution (CPEC, 2002, 2005).

According to Kisker (2007) information sharing and collaboration between community colleges and four-year institutions can improve transfer and sustain improved transfer rates over time. Specifically, she posited that community college-university partnerships be created and sustained to promote student transfer, create "a culture of transfer", particularly among faculty (p. 297). Partnerships go beyond formal articulation agreements and help to raise students' awareness of the

opportunities available to them after attending a community college and legitimize the community college as a "viable and important path to the baccalaureate" (p. 283). They involve community college and university administrators, faculty, trustees, counselors and student affairs administrators, as well as staff from high schools. Transfer partnerships can be used as a "public relations vehicle" (Kisker, p. 26). For example, they help to promote awareness and attention to faculty's role in providing the academic preparation needed for transfer. Engaging high schools in partnerships also provide a useful way for identifying potential students and may help students to start thinking earlier about the requirements for transfer (Kisker).

Challenges and Issues in Community College STEM Fields

A clearer picture of the role of community college transfer within the STEM fields is offered by the 2000-2001 Baccalaureate and Beyond (B&B) longitudinal study. This national survey of bachelor's degree holders revealed that, with a few exceptions, smaller proportions of individuals who earned the bachelor's degree in STEM fields began their postsecondary education at a community college compared to bachelor's degree holders in non-STEM fields. For example, just 6% of individuals who earned a B.S. in mathematics and 14% of individuals who earned a B.S. in the physical sciences began at a community college (Bradburn, Berger, Li, Peter, & Rooney, 2003). This is significantly lower than the one-fifth of all bachelor's degree holders who attended a community college as their first postsecondary institution (Bradburn et al., 2003). The disparities were not as large among degree holders in engineering: nearly

18% of bachelor's degree holders in engineering and began at a community college. There were no differences between the proportion of degree holders in the life sciences and health-related fields who first attended a community college and all bachelor's degree holders. Furthermore, a larger proportion of bachelor's degree holders in computer and information sciences began at a community college compared to all bachelor's degree holders, 26% and 20%, respectively (Bradburn et al., 2003). These data indicate that while there are transfer pathways to science-related four-year degrees, the sizes of these pathways are not uniform across specific STEM disciplines.

Insufficient Mathematics Preparation

One of the explanations for the varying levels of transfer access by STEM discipline may be the gate keeping nature of mathematics (MacLachlan, 2007). Math is vital to educational attainment in STEM fields as students are required to take more than one semester of math coursework, including courses in calculus and other advanced subfields. On average, traditional-aged students who enter community colleges have lower levels of preparation in mathematics than those students who directly enter four-year institutions (Adelman, 2005). In California for example, 70% of community college students who took a placement test were placed into remedial mathematics while just nine percent placed into transfer-level math courses (Research and Planning Group for California Community Colleges, 2005). Because the likelihood of taking a transfer-level math course after beginning at the basic skills level is only 10% (RP Group, 2005), the high rates of enrollment in basic skills math among community college students is an important factor when considering the barriers to community college transfer in STEM fields. Further research is needed to assess the effect of mathematics preparation among community college students.

Issue of Access to Four-Year Institutions

An equally important question regarding community college transfer and STEM pertains to the four-year institutions that receive these students. The nature of access matters, particularly in the sciences and engineering. For example, doctoral-granting institutions may offer more research opportunities for STEM majors than comprehensive colleges. The resources and opportunities provided to students by undergraduate institutions structure opportunities for degree completion (Melguizo, in press-a), graduate study (Eide, Brewer, & Ehrenberg, 1998), and earning potential (Brewer, Eide, & Ehrenberg, 1999), underline the importance to understand to which institutions are community college STEM majors transferring. Although their study does not specifically focus on STEM majors, Dowd, Cheslock and Melguizo (in press) find that few community college students gain access to highly selective institutions via transfer. Data from the California Postsecondary Education Commission (2007) suggest that California does not support this trend: a higher proportion of community college students who transferred to the more selective University of California (UC) campuses were STEM majors compared to transfers to the California State University system. However, significant racial/ethnic inequities in transfer access to the UC system persist (Melguizo, 2007) and the implications of these inequities on underrepresented students in STEM have yet to be determined (MacLachlan, 2007).

In addition to transfer access, researchers (Melguizo & Dowd, in press; Malcom, 2006; Melguizo, in press-b) have attempted to assess the outcomes of community college transfer students as they compare to students who enroll directly in four-year institutions. Melguizo and Dowd (forthcoming) illustrate that within the context of the metric of degree completion, community college transfer students perform similarly to non-community college attendees, controlling for socioeconomic status and institutional selectivity. A study examining the outcomes of STEM bachelor's degree holders who earned an associate's degree from a community college prior to earning the B.S. revealed that community college attendance does not significantly affect key post-transfer educational outcomes (e.g., bachelor's degree field, graduate degree attainment, sector of employment) (Malcom, 2006). It is important to note that this study examined the outcomes of STEM bachelor's degree holders and was unable to determine if community college attendance affected the chances of bachelor's degree attainment. However, Malcom's findings offer important implications for the "equalizing" ability of community colleges and the ability of these institutions to act as a springboard to graduate school and economically rewarding careers for STEM majors.

Promising Practices in Community College STEM Transfer Education

For the most part, promising practices in STEM transfer education mirror those in non-STEM disciplines. However, one initiative—the Math, Engineering, and Science Achievement (MESA) program— deserves special recognition for the promising practices it has enacted in recruiting, retaining, supporting, and transferring underrepresented minority students in STEM fields. The MESA program was developed by the University of California's Office of the President in order to increase academic success among "educationally and financially disadvantaged students" in STEM disciplines (Kane et al., 2004, p. 23). Found in several community colleges across California, each program focuses on improving the opportunities for and enhancing the education of underrepresented students in math, science, and engineering courses.

For example, the MESA program at Hartnell College in the Salinas Valley has provided disadvantaged African American, Latino, and Native American students with supplemental instruction and assistance in successful transfer to four-year institutions. Kane et al. (2004) explored the program's components, which included services such as orientation activities, a MESA student center, academic excellence workshops, academic planning, counseling, and university campus tours to improve students' academic performance and facilitate their transfer. Furthermore, Hartnell's MESA program also recruited minority students into the college's engineering, mathematics, computer science, and physics programs (Kane et al.). The MESA program at Hartnell has shown some encouraging results. Enrollment in math and science courses has increased, as has the number of minority students declaring engineering technology and math majors (Kane et al., 2004). Moreover, students who participated in Hartnell College's MESA academic workshops have significantly improved their grade point averages in science-related courses and demonstrated greater GPA gains than students who did not participate in the workshops (Kane et al.). Furthermore, 90% of students who

participated in Hartnell College's MESA program and transferred to a university continued to persist in their designated math, engineering, and technology majors after three years (Kane et al.). Academic programs such as MESA are among the STEM-oriented support programs that have improved minority student progress and performance in science, math, technology, and engineering courses, and thus these hold promise for closing the achievement gap in student transfer.

Conclusions

As educational leaders and policymakers increasingly look to community colleges to facilitate baccalaureate attainment (Cohen, 2003; Ignash & Townsend, 2001), the practices and programs that facilitate students' completion of the requirements needed for transfer are critical. This review of the literature highlighted some of the main challenges and issues confronting community college students as they seek to transfer to four-year institutions. The literature also offered several approaches available to promote transfer. Promising practices that support students' academic and social integration were found to lessen the effects that certain barriers have on student access and attainment. Community college practitioners play a key role in facilitating transfer, particularly when it comes to providing students with effective advising and counseling. Policy barriers to access and baccalaureate attainment are addressed through improved institutional alignment and collaboration between community colleges and four-year institutions.

There is little attention in the literature to the development of both university and community college joint baccalaureate programming, co-location of university programs on a community college campus, or stand-alone baccalaureate programs offered by community colleges. Yet, these developments are advancing in several states. These practices provide avenues to goals similar to those of transfer to a university or four-year college (Floyd, Skolnik, & Walker, 2004; Levin, 2004). One reason for resistance is that transfer structures and institutional interests have deep roots, and that universities rely upon community college transfer students for increasing student ethnic diversity. Indeed, STEM transfer is more critical for four-year institutions as university STEM programs lack participation by underrepresented populations and the policy and funding environments for universities are favorable to an increase not only in STEM enrollments but also in under represented populations' participation in STEM.

References

Adelman, C. (2005). *Moving into town—and moving on: The community college in the lives of traditional-age students*. Washington, DC: U.S. Department of Education.

Adelman, C. (1999). Answers in the toolbox: Academic intensity, attendance patterns, and bachelor's degree attainment. Washington, DC: U.S. Department of Education.

Astin, A. W. (1993). *What matters in college? Four critical years revisited.* San Francisco: Jossey-Bass.

Bailey, T.R. & Alfonso, M. (2005). Paths to persistence: An analysis of research on program effectiveness at community colleges. *Lumina*

Foundation for Education New Agenda Series, 6(1). Retrieved from: *http://www.luminafoundation.org/publications/PathstoPersistence.pdf*

Bailey, T. R., Matsuzuka, Y., Jacobs, J., Morest, V. S., & Hughes, K. L. (2004). Institutionalization and sustainability of the National Science Foundation's Advanced Technological Education program. New York: Community College Research Center, Teacher's College, Columbia University (ED482183).

Bettinger, E.P. & Long, B.T. (2005). Remediation at the Community College: Student participation and outcomes. *New Directions for Community Colleges, 129,* 17 – 26.

Bradburn, E. M., Berger, R., Li, X., Peter, K., & Rooney, K. (2003). *A descriptive summary of 1999-2000 bachelor's degree recipients one year later, with an analysis of time to degree.* (NCES 2003-165). Washington, DC: U.S. Department of Education.

Brewer, D., Eide, E., & Ehrenberg, R. (1999). Does it pay to attend an elite private college? Cross-cohort evidence on the effects of college type on earnings. *Journal of Human Resources*, *34*, 104–123.

Bryant, A. N. (2001). ERIC review. Community college students: Recent findings and trends. *Community College Review*, *29* (3), 77-93.

Boswell, K. (2004). Bridges or barriers? Public policy and the community college transfer function. *Change*, *36,* 22-29.

Bradburn, E. M., Hurst, D. G., & Peng, S. (2001). Community college transfer rates to 4-year institutions using alternative definitions of transfer (NCES no. 2001-197). Washington, DC: U.S. Department of Education, National Center for Education Statistics.

California Postsecondary Education Commission. (2007). *California higher education accountability. Goal-student success measure: California community college students' degrees and certificates awarded and successful transfers* (California Postsecondary Education Commission document no. 07-06). Sacramento, CA: Author.

California Postsecondary Education Commission. (2005). *Student transfer in California postsecondary education* (California Postsecondary Education Commission document no. 05-08). Sacramento, CA: Author.

California Postsecondary Education Commission. (2002). *Student transfer in California postsecondary education* (California Postsecondary Education Commission document no. 02-3). Sacramento, CA: Author.

Cohen, A.M. (2003). Community colleges and the path to the baccalaureate. Paper prepared for the Center for Studies in Higher Education. Los Angeles, California: University of California Los Angeles.

Cohen, A. M. (1995). Orderly thinking about a chaotic system. In T. Rifkin (Ed.)., *Transfer and articulation: Improving policies to meet new needs. New directions for community colleges, no.*

96 (pp. 25-34). San Francisco: Jossey-Bass.

Cohen, A. M., & Brawer, F. B. (2003). *The American community college.* San Francisco: Jossey-Bass.

Culp, M (2005). Increasing the value of traditional support services. *New Directions for Community Colleges, 205*(131), 33 – 49.

Cuseo, J. (1998). The transfer transition: A summary of key issues, target areas, and tactics for reform. Unpublished manuscript. (ERIC Document Reproduction Service, no. 425 771)

Deil-Amen, R. & Rosenbaum, J.E. (2003). The social prerequisites of success: Can college structure reduce the need for social know-how? *Annals of the American Academy of Political and Social Science, 586,* 120- 143.

Dougherty, K. J., & Kienzl, G. S. (2006). It's not enough to get through the open door: Inequalities by social background in transfer from community college to four-year colleges. *Teachers College Record, 108*, 452-487.

Dowd, A. C., Cheslock, J., & Melguizo, T. (in press). Transfer access from community colleges and the distribution of elite higher education. *The Journal of Higher Education.*

Doyle, W. (2006). Community college transfers and college graduation: Whose choices matter most? *Change, 38,* 56 – 58.

Eide, E., Brewer, D., & Ehrenberg, R. (1998). Does it pay to attend an elite private college? Evidence on the effect of undergraduate college quality on graduate school attendance. *Economics of Education Review, 17,* 371–376.

Fogarty, J., & Dunlap, L., with Dolan, E., Hesse M., Mason, M., & Mott, J. (2003). L*earning communities in community colleges. National Learning Communities Project Monograph Series,* Olympia WA: The Evergreen State College, Washington Center for Improving the Quality of Undergraduate Education, in cooperation with the American Association for Higher Education and the American Association of Community Colleges.

Flowers, L. A. (2006). Effects of attending a 2-year institution on African American males' academic and social integration in the first year of college. *Teachers College Record 108* (2), 267-286.

Floyd, D. L., Skolnik, M. L., & Walker, K. P. (Eds.). (2004). *The community college baccalaureate: Emerging trends and policy issues.* Sterling, VA: Stylus.

Hagedorn, L. S., Moon, H. S., Cypers, S., Maxwell, W. E., & Lester, J. (2006). Transfer between community colleges and 4-year colleges: The all American game. *Community College Journal of Research and Practice, 30*, 223-242.

Horn, L., & Lew, S. (2007). *Unexpected pathways: Transfer patterns of California community college students* (MPR research brief 8-16-2007). Berkeley, CA: MPR Associates, Inc.

Ignash, J.M., & Townsend, B.K. (2001). Evaluating state-level articulation agreements according to good practice. *Community College Review, 28*(3), 1 – 21.

Jacobs, B. (2004). Today's transfer students: Trends and challenges. In Jacobs, B., Lauren, B., Miller, M., & Nadler, D. (Eds.), *The college transfer student in America: The forgotten student*. Washington, DC: American Association of Collegiate Registrars and Admissions Officers.

Kane, M., Beals, C., Valeau, E. J., & Johnson M. J. (2004). Fostering success among traditionally underrepresented student groups: Hartnell College's approach to implementation of the math, engineering, and science achievement (MESA) program. *Community College Journal of Research and Practice, 28,* 17-26.

Kisker, C.B. (2007). Creating and sustaining community college-university transfer partnerships. *Community College Review, 34*(4), 282 – 301.

Kozeracki, C., & Gerdeman, D. (2000). Southern California community college transfer readiness research project focus group findings. Los Angeles: University of California, Los Angeles, and ERIC Clearinghouse for Community Colleges. (ERIC Document Reproduction Service, no. 462 115)

Laanan, F. S. (1996). Making the transition: Understanding the adjustment process of community college transfer students. *Community College Review*, *23* (4), 69-84.

Lawrenz, F., Keiser, N., & Lavoie, B. (2003). Sustaining innovation in technological education. *Community College Review,* 30, 47-63.

Lee, V. E., & Frank. K. A. (1990). Students' characteristics that facilitate the transfer from two-year to four-year colleges. *Sociology of Education, 63,* (3), 178-193.

Levin, J. (2004). The Community College as a Baccalaureate-Granting Institution. *The Review of Higher Education, 28*(1), 1-22.

MacLachlan, A. J. (2007, November 5). Dearth of diversity in science education demands action. *Community College Week*, p. 9.

Malcom, L. E. (2008). *Accumulating (dis)advantage: Institutional and financial aid pathways of Latino STEM baccalaureates*. Unpublished doctoral dissertation. University of Southern California.

Malcom, L. E. (2006, November). Exploring the effects of community college attendance on the educational, professional, and economic outcomes of scientists and engineers. Paper presented at the Annual Meeting of the Association for the Study of Higher Education, Anaheim, California.

McGlynn, A. P. (2006). Transfers from four-year to two-year colleges grow. *Education Digest: Essential Readings Condensed for Quick Review, 72,* (4), 60-64.

Melguizo, T. (in press-a). Quality matters: Assessing the impact of selective

institutions on minority college completion rates. *Research in Higher Education*.

Melguizo, T. (in press-b). Are community colleges an alternative path for Hispanic students to attain a bachelor's degree? *Teachers College Record.*

Melguizo, T., & Dowd, A.C. (Forthcoming, 2008). Baccalaureate Success of Transfers and Rising Four-Year College Juniors. *Teachers College Record*.

Nora, A., & Rendon, L.I. (1990). Determinants of predisposition to transfer among community college students: A structural model. *Research in Higher Education, 31*, 231-255.

Parker, T. (2007). Ending remediation: Consequences for access and opportunity. (ASHE/Lumina Policy Briefs and Critical Essays No. 2). Ames: Iowa State University, Department of Educational Leadership and Policy Studies.

Peterman, D. S. (2003). Student peer mentoring in community colleges. *Community College Journal of Research and Practice, 27,* (3), 255-258.

Phillippe, K. A. & Valiga, M. J. (2000). Faces of the future: A portrait of America's community college students. Summary findings. American Association of Community Colleges Washington, DC.

Perrakis, A.I. (2008). Factors promoting academic success among African American and white male community college students, *142*, 15 – 23.

Research and Planning Group for California Community Colleges. (2005). *Environmental scan: A summary of key issues facing California community colleges pertinent to the strategic planning process.* Retrieved October 3, 2007 from http://www.rpgroup.org/documents/projects/CCC-StrategicPlan/EvScanCCC-StrategicPln-RPCSS-07-05.pdf

Shaw, K.M. & Jacobs, J.A. (2003). Community colleges: New environments, new directions. *Annals of the American Academy of Political and Social Science, 586*, 6 – 15.

Shulock, N., & Moore, C. (2007). *Rules of the Game: How State Policy Creates Barriers to Degree Completion and Impedes Student Success in the California Community Colleges*: Institute for Higher Education Leadership & Policy.

Spicer, S.L. & Armstrong, W.B. (1996). Transfer: The elusive denominator*. New Directions for Community Colleges, 96*, 45 – 54.

Toulmin, C. N. & Meghan, G. (2007). Building a science, technology, engineering and math agenda. National Governor's Association.

Townsend, B. K. (2002). Transfer rates: A problematic criterion for measuring the community college. *New Directions for Community Colleges* (117), 13-24.

Townsend, B.K. (2001). Blurring the lines: Transforming terminal education to

transfer education. *New Directions for Community Colleges* (115), 63 – 71.

Townsend, B.K. & Wilson, K.B. (2006). The transfer mission: Tried and true, but troubled? *New Directions for Community Colleges* (136)*, 33- 41.

Tsapogas, J. (2004). *The role of community college in the education of recent science and engineering graduates.* (NSF 04–315). National Science Foundation: Arlington, VA.

United States Congress, (1992). Scientific and Technical Education Act of 1992. (Report   to accompany H.R. 2936 including cost estimate of the Congressional Budget Office). Washington, DC. United States House of Representatives, 102nd Congress, 2nd session, House Committee on Science, Space, and Technology.

University of California, Office of the President. (1960). *A master plan for higher education in California: 1960-1975.* Berkeley, CA: Author. Retrieved Sept. 17, 2007 from: http://www.ucop.edu/acadinit/mast plan/MasterPlan1960.pdf.

Velez, W., & Javalgi, R. G. (1987). Two-year college to four-year college: The likelihood of transfer. *American Journal of Education*, *96* (1), 81-94.

Wellman, J. V. (2002). *State Policy and Community College-Baccalaureate Transfer*. San Jose: National Center for Public Policy and Higher Education.

Zamani, E. (2001). Institutional responses to barriers to the transfer process. In F. S. Laanan (Ed.), *Transfer students:*

Trends and issues. New Directions for Community Colleges, no. 114 (pp. 15-24). San Francisco: Jossey-Bass.

Vocational Education Literature Review

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Prior to the twentieth century, higher education in the United States was centered on moral and civic inculcation with a specific focus on training elites for socio-political leadership (Lucas, 1994). These traditional purposes were gradually replaced with a new end—training all Americans for work –and was labeled the "vocationalization" of American education (Thelin, 2004). College leaders began to vocationalize their institutions as early as 1930, with supporters of vocationalism arguing that a differentiated educational system was a "truly democratic" way to provide education that could fit students for different careers and vocations (Brint & Karabel, 1989, p. 11). As a result, higher education in the United States became closely linked to the nation's capitalist economy and its labor market became the arbiter of both occupational and professional careers (Aronowitz, 2000; Grubb, 1985; Grubb & Lazerson, 2004; Kantor, 1988; Kliebard, 1999; Thelin, 2004) while community colleges played a key role in serving as a provider of vocational education (Bragg, 2002), also known as career, occupational, and technical education (Eaton,

1994). Vocational education holds "the potential to bridge education and training, providing a route from short-term programs in the mainstream of education" to the labor market (Grubb, 2001, p. 28). In 1964, the American Association of Junior Colleges articulated the principal twin missions of community colleges: "community colleges offer unparalleled promise for expanding educational opportunity through the provision of comprehensive programs embracing job training as well as traditional liberal arts and general education" (p. 14).

While vocational education programs helped diversify the mission of the community college and initiated an increase in postsecondary enrollments, some scholars (e.g., Brint & Karabel, 1989; Dougherty, 1994) argued that they directed, and inappropriately so, many students toward skilled work in the sub-baccalaureate labor market. Community college administrators and state policymakers saw the growing mid-skilled labor market as a means to institutionalize a distinct "niche" for community colleges in newly formed state systems of higher education (Dougherty, 1994; Douglass, 2000; Grubb, Badway, Bell, Chi, King, Herr, Prince, Kazis, Hicks, & Taylor, 1999). Proponents of vocationalism also faced the obstacle of persistent disinterest among their own students. "Their chances of getting ahead in a nation increasingly obsessed with educational credentials depended, they believed, on transferring to a four-year institution" (Brint & Karabel, 1989, p. 12).

Despite some of this resistance to the vocationalization of higher education, the 1970s experienced a surge in vocational program enrollments in community college and community colleges' vocational

orientation led to new sources of revenue and stronger connections with local and state economic and political leaders (Brint & Karabel, 1989). Community colleges became the centerpiece of the "second-chance" route to higher education, whereby under-prepared or underprivileged students could receive remedial education, a GED, job training, and basic academic or vocational skills necessary for entry into occupational and professional programs (Cohen & Brawer, 2003; Dougherty; Grubb, 1996b; Grubb & Lazerson, 2004; Milne, 1998).

Since the 1980s, community colleges became more entrepreneurial in seeking new resources, while at the same time increasingly serving as instruments of the state in workforce development (Levin, 2006). Calls for a "new" vocationalism arose in the 1980s and intensified into the twenty-first century as policymakers continually publicized political slogans such as "economic competition," "globalization," a "new economy," "high-tech" jobs, and "economic development" (Bailey, 1995; Board of Governors of the California Community Colleges, 2001; Bragg, 2001; Grubb & Lazerson, 2004; Jacobs, 2007). Community colleges increasingly found themselves "very much out of the shadows and at the 'top of the workforce policy agenda'" (Visher & Fowler, 2006, p. 2).

According to several scholars (Badway & Grubb, 1997; Bragg & Hamm, 1996; Grubb, 1995, 1996b, 1999b; Grubb & Lazerson, 2004; Milne, 1998), the legislation of the 1980s and 1990s had a significant influence on the growth of vocational education and sparked the further development of several core areas of innovative practices: (1) integration of academic and vocational curricula; (2)

comprehensive social support services; (3) vocational pathways from secondary to postsecondary institutions; (4) larger career pathways connecting postsecondary institutions to local labor markets; (5) welfare and workforce job training programs; and (6) partnerships with local businesses for cooperative training ventures. New "career-oriented" policies promised students higher skills, better jobs, greater social support, and lifelong learning, while at the same time promising regional economies financial growth, low unemployment, and economic competitiveness. Policymakers have often described vocational education as a panacea for all sorts of socioeconomic problems, and political prescriptions became law with the passage of the Carl D. Perkins Vocational and Technical Education Act of 1984 (Perkins I), the revised Perkins Act of 1990 (Perkins II), the School-to-Work Opportunities Act (STWO) of 1994, the revised Perkins Act of 1998 (Perkins III), and the welfare/workforce training reform acts of 1996 and 1998. Where occupational training had once been restructured as vocational education, now vocational education was being reorganized as "career and technical education" or "career pathways," programmatically consecrated in the 2002 Office of Vocational and Adult Education's College and Career Transitions Initiative (Hughes & Karp, 2006).

New career pathway programs and systems of accountability are still developing, and there is great diversity in state-level implementation of policy, as well as in local implementation of practice (Bragg & Hamm, 1996; Brint & Karabel, 1989; Dougherty, 1994; Grubb, 1996b, 1999b, 2001; Grubb et al., 1999; Jacobs & Dougherty, 2006; Levin, 2001a; Milne, 1998; Rosenbaum, 2001). With at least 2.3 million workers enrolling each year in non-credit, job-related programs

offered by higher education institutions (Kasper, 2003), this demand for vocationally-oriented courses reveals a continuing need for community colleges to provide the long-term occupational skills training, which has been found to lead to better long-term outcomes for students, compared to short-term training or quick job placement (Visher & Fowler, 2006).

Challenges and Issues in Community College Vocational Education

Community college vocational programs face numerous challenges and issues, including a lack of firm evidence of effectiveness, a lack of accountability, a challenging sub-baccalaureate labor market, a need for greater federal and state involvement and oversight, and potentially competing missions between vocational education and general education within the community college. The following sections describe each of these challenges and issues.

Insufficient Evidence of Effectiveness

In spite of a rhetoric of optimism, scholars seem to hold a bleak consensus on the positive outcomes of vocational education: Student preparation for and placement in careers have been lauded by all as a noble idea, but there is little evidence over the past century that American schools and colleges, especially sub-baccalaureate institutions such as community colleges, are particularly successful with this task (Grubb, 1985, 1996a, 1996b; Grubb & Lazerson, 2004; Kantor, 1988; Kliebard, 1999; Organization for Economic Cooperation and Development, 2005; Rosenbaum, 2001; Stern, Finkelstein, Stone, Latting, & Dornsife, 1995). Indeed, few community colleges have clear and well-developed connections to the labor market, as well as a formal understanding of what skills

students need, how these skills are measured, and how they should be communicated to future employers (Grubb, 1996b; Grubb & Lazerson, 2004; Grubb et al., 1999; Rosenbaum, 2001; Stern et al.). As a result, in general sub-baccalaureate job-training programs, such as welfare-to-work initiatives, showed little success in increasing students' employment or earnings.

Scholars also argued that short-term job training programs can be harmful to certain types of students, decreasing their earnings and/or welfare support (Grubb, 1985, 1996a, 1996b; Grubb & Lazerson). There is little evidence to show how well occupational programs prepare students for employment and place them in careers, primarily because few community colleges are able to track students' job placements or advancements reliably. Furthermore, colleges are in need of tools to better assess whether vocational programs are teaching students the skills employers want, let alone the lifetime learning skills that students need to navigate a rapidly changing American economy (Bragg & Hamm, 1996; Grubb, 1985, 1996a, 1996b, 1999b; Grubb & Lazerson; Hughes & Karp, 2006; Kantor; Kliebard, 1999; Milne, 1998; Rosenbaum; Stern et al., 1995).

Lack of Accountability

Accountability for vocational education and career pathways is still in its infancy, despite the fact that the National Assessment of Vocational Education (NAVE) was first proposed in 1979 (Morrison, 1979), further developed in 1986 with the passage of Perkins I (U.S. Department of Education, 1986), and instituted in 1987-88 (Merkel-Keller, 1988; U.S. Department of Education, 1988). As a result of diverse state implementation policies, accountability

systems for vocational education are not fully operational or effective (Milne, 1998). Grubb and Lazerson (2004) argued that creating and articulating a functional and effective "education and employment system" (p. 139) will be an important 21st century innovation.

One of the challenges in improving the accountability of vocational education is determining who counts as a "completer" (Grubb, 1999b)? The standard measure of success is the completion of an associate degree or a 30- to 60-credit vocational certificate. However, large numbers of students leave vocational programs without these types of credentials, and substantial numbers of students simply enroll in vocational classes in order to learn specific skills and then drop out of courses once they have met their objectives (Grubb, 1999b; Lohman & Dingerson, 2005; Townsend, 2001). Lohman and Dingerson found that 56% of community college non-completers left their programs while enrolled in trade courses and an additional 25% left after completing trade courses. The majority of students who left their programs before completing a certificate or degree did so because of trade-related factors (such as leaving for employment because the needed skills or requisite training hours had been gained), suggesting that large numbers of students never intended to receive a credential in the first place. Stern et al. (1995) pointed out that most young people do not keep their first full-time job for long, and by dropping out of a vocational program before receiving a certificate or degree, they lose out on the opportunity to gain the academic and life skills necessary to advance in their career or participate effectively in society. Thus, until community college practitioners and policymakers devise rigorous criteria about what constitutes

student success in vocational education, program and institutional effectiveness and accountability may not be addressed adequately.

A Challenging Sub-Baccalaureate Labor Market

According to Grubb (1996b), the sub-baccalaureate labor market posed several challenges to developing vocational education and career pathway programs. Grubb found that employers in this market were frequently small businesses that hired few workers, offered lower salaries, and fewer opportunities for advancement than larger organizations. He further found that small businesses were often not well informed about the supply of educated labor; few were in continuous communication with local community colleges or other educational institutions, and more were likely to follow informal hiring practices, which make it difficult to prepare students for interviews or specific job related skills (Grubb, 1996b). Smaller businesses also tended to be more dependent on flexible and multi-skilled employees who are able to cross occupational boundaries in order to accomplish a job cheaply and with fewer resources. As such, many "of the competencies required by employers in the sub-baccalaureate labor market cannot readily be taught in schools and colleges" (p. 21). In addition, Grubb argued that the sub-baccalaureate labor market was dependent upon the highly cyclical nature of market demand, which runs the risk of creating unstable employment opportunities and in turn increases informal hiring policies, making it difficult for both job seekers and vocational programs to determine exactly what local employers want and when they want it. These features of the sub-baccalaureate labor market make it

difficult for community colleges to determine—let alone teach—the skills employers want and need.

Greater Governmental Involvement and Oversight

In order to maximize the effectiveness of community college vocational education, several researchers (Bragg, 2002; Grubb & Lazerson, 2004; Rosenbaum, 2001) recommended that community colleges act as pivotal institutions in a career ladder, linking secondary, postsecondary, and regional job training programs into a single, progressive, coherent, and sequential system with no redundant or competing parts.   In particular; they stressed the importance of institutions' connectedness to local employers and regional job markets as well as the need to integrate the academic and occupational curricula into vocational programs in order to provide students with a broad set of skills and knowledge needed to succeed in the world of work (Rosenbaum). However, scholars also pointed out that acting as the pivotal institution in providing career pathways and thus economic and social development is beyond the capacity of any single educational institution (Grubb & Lazerson). A functioning and equitable career pathway program with a full student support system required expansive community networking, state and local government oversight, and vastly increased financial support (Grubb, 1996b; Grubb & Lazerson; Shaw, Goldrick-Rab, Mazzeo, & Jacobs, 2006). Thus, implementing new vocational reforms—and ensuring accountability for these redesigned programs—requires extensive involvement from federal and state policymakers.

Competing Missions of Vocational and General Education

There is also a deeper challenge at the heart of vocational education, one which is often overlooked in discussions of the new vocationalism: its potential to compete with and overshadow the general education mission of community colleges. In 1916 John Dewey pointed out that vocational education is often narrowly conceived as mere occupational training and cautioned that educational institutions could become mere appendages to business concerns or the whims of the labor market, and thus the larger mission of American education (for Dewey, it was creating free, educated, and responsible citizens) would become lost in the pursuit of purely economic concerns. Scholars (Aronowitz, 2000; Brint & Karabel, 1989; Dougherty, 1994; Grubb, 1996b; Grubb & Lazerson, 2004; Kantor, 1988; Kliebard, 1999; Levin, 2001a) addressed the implications of Dewey's argument and sounded an alarm to practitioners and the public alike. Nonetheless, many community colleges ignored these pleadings, choosing instead to develop additional vocational programs and business collaborations to ensure greater support (financial and otherwise) from local businesses and industries. Indeed, many community college practitioners and researchers lauded collaboration with the private sector as a means to provide under-funded community colleges with a continuous stream of enrollments and, frequently, additional financial support (Farmer & Key, 1997; Kantor, 1994; Spangler, 2002). However, absent in these arguments were discussions of education as a non-economic goal (Ayers & Carlone, 2007; Levin), or conversations about what is lost when vocational programs prioritize economic and labor market concerns over the general education mission (i.e., the provision of the lifelong skills and

knowledge necessary to participate in society) of the community college (Downey, Pusser, & Turner, 2006; Levin; Slaughter & Leslie, 1997).

Welfare and Workforce Reform

According to Lisman (2001) welfare and workforce reform acts reinforced the community college mission of retraining impoverished, low-skilled, unemployed, downsized, and/or career changing adults resulting in an unregulated proliferation of short-term job training programs. Overall, these programs, at their best, slightly raised the income of certain groups, while at worst, forced individuals back into the low-paid labor market without increasing their skills (Grubb 1996a; Grubb & Lazerson, 2004; Levin, Beach, & Kisker, 2007; Shaw et al., 2006). There have been some innovative and successful programs, but these success stories are not always backed up with adequate longitudinal data to fully make claims to success (Lisman, 2001). Finally, due to several factors (such as greater awareness of the importance of school-to-work connections, an increase in corporate outsourcing of job training, and an increased need for external sources of revenue), community colleges have developed business collaborations in recent years, and many now coordinate a range of workforce training initiatives in order to train workers for specific employers in the local economy (Doty, 1987; Kantor, 1994; Kisker & Carducci, 2003; Kisner, Mazza, & Liggett, 1997; Milne, 1998; Spangler, 2002).

Promising Practices in Community College Vocational Education

Scholars have identified practices that hold promise for community college vocational education (Alssid et al., 2002;

Grubb & Badway, 1998; Villeneuve & Grubb, 1996). However, there is often a significant disconnection between scholarly prescriptions for promising vocational education practices and descriptions of actual programs at specific community colleges, which may have some promising elements. This should be expected, given that career pathway initiatives and vocational education accountability policies are both relatively new and are complicated phenomena (Grubb, 1999b; Milne, 1998). Nonetheless, the following sections describe several promising practices in community college vocational education that are evident in the literature. These practices, put together, make up a comprehensive career pathway system, and although few if any colleges have integrated all twelve components successfully, they may be seen as an analytical framework that could be used to guide program design.

Integration of Academic and Vocational Curricula

The philosophy behind integrating the academic and vocational curricula is that doing so may build students' core skills while developing contextual, hands-on learning applications (Badway & Grubb, 1997; Bragg & Hamm, 1996; Grubb, 1995, 1996b, 1999b; Grubb & Lazerson, 2004; Milne, 1998). One example of how institutions integrate the academic and vocational curricula is through the cooperative model. One of the oldest and most prevalent forms, this approach alternates semesters with academic coursework, on-the-job internships, or formal work (Bragg & Hamm; Grubb & Badway, 1998; Stern, et al., 1995; Villeneuve & Grubb, 1996). Clinical or professional work-based learning programs (integrated curriculum in classrooms and laboratories on campus) are

also widely prevalent, but mostly in health-based fields (Bragg & Hamm).

Centralized Administration

Career pathways programs are complicated and expensive to design, administer, and sustain. Simply initiating a career pathway takes commitment from community college administrators who are willing to secure adequate funding from multiple sources, find competent leaders to coordinate programs, and help initiate and cultivate relationships between faculty and staff and among community partners. A centralized administrative structure can integrate, effectively, the overall program administration, student support services, academic and vocational faculty and staff, and local agencies and businesses that contribute to the regional labor market (Villeneuve & Grubb, 1996). Simply developing and fostering these relationships is a full-time job, and sustaining personal connections, especially with employers, is important, as these ensure a "high-quality equilibrium" of good will and mutual benefit (Villeneuve & Grubb, 1996, p. 39). To be effective, scholars, argue, career pathway programs should have a single administrator or administrative body that can oversee these networks and coordinate programming initiatives. Supportive and savvy institutional leadership was important for preventing or smoothing over conflicts of interest due to programmatic overlap between competing community college departments, governmental agencies, and community service providers (Alssid et al., 2002; Kisker & Carducci, 2003; Summers, 2001). This person or body is expected to develop a structured accountability and evaluation system to monitor the success of the program and the quality of working relationships both on and off campus. A

central administrator can also act to secure adequate funding for the career pathways program, often through grant writing and lobbying (Alssid et al., 2002; Bragg & Hamm, 1996; Summers, 2001; Villeneuve & Grubb).

Cross-Campus Collaboration

Community college vocational education programs have often been separated from the larger academic community, and as a result, there is often little collaboration or contact among academic and vocational faculty (Alssid et al., 2002). This divide threatens the effectiveness of career pathway programs, as they need to be connected to other college departments in order to provide students with basic skills training, counseling and other student support services, and cooperative academic/vocational activities and opportunities. Innovative career pathway programs connect with and are integrated in the core educational missions of the college in order to create institutional awareness and support (Alssid et al., 2002; Grubb & Badway; Villeneuve & Grubb, 1996). Connection and collaboration with other community college departments can also help vocational education programs to overcome potential conflicts with the central college mission of providing students with a general education that allows them to advance in their careers and contribute to society in a meaningful way (Bragg, 2002).

Sufficient Funding

Numerous scholars (Alssid et al., 2002; Bragg & Hamm, 1996; Kisker & Carducci, 2003; Villeneuve & Grubb, 1996) explored the issue of financing comprehensive career pathway programs and concluded that finding adequate and secure funding is perhaps the greatest obstacle in

implementing these programs. Due to the limited nature of federal and state funding for community colleges, vocational program administrators need to cultivate and coordinate multiple sources of funding from diverse constituents and donors. This is a difficult task in any educational venture, and one that is even more challenging in career pathway programs, as they frequently necessitate expensive human capital investment, the long-term benefits of which are more difficult to articulate than those of inexpensive, outsourced, or short-term workforce training initiatives (Alssid et al., 2002; Bragg & Hamm, 1996; Villeneuve & Grubb, 1996).

Community and Government Partnerships

Much of the best practice literature in community college vocational education focuses on the need to establish partnerships with local businesses. Numerous articles discuss ways that community colleges have engaged in cooperative ventures such as training programs provided to workers for a single corporation or for a single occupation (Adler, 1997; Bragg & Hamm, 1996; California Community Colleges, 1993; Kantor, 1994; Kisker & Carducci, 2003; Kisner et al., 1997; Rosenbaum, 2001; Spangler, 2002; Villeneuve & Grubb, 1996). These also argue the importance of establishing and maintaining strong partnerships with the community in general. According to Alssid et al., (2002) and Orr (2001), these partnerships include an expansive network of education officials, adult basic education providers, social service agencies, community-based organizations, local chambers of commerce, and/or government bodies at the local, state, and federal levels.

Few community colleges in the United States have developed strong, diverse, and productive relationships with educational, social, and governmental bodies, although there is some evidence that this may be happening at some level in rural communities (Valek, 1995). Strong community partnerships and coordinated educational-economical-civic pathways are documented in other countries, such as Germany, Japan, and rural Australia (Rosenbaum, 2001; Falk, 1999). Most researchers argued that these partnerships be initiated and sustained by top-level educational administrators and program coordinators at individual colleges, although this job can also be facilitated by government legislation (Bragg & Hamm, 1996; Grubb, 1985; Grubb, 1996a, 1996b, 1999b; Grubb & Lazerson, 2004; Rosenbaum; Stern et al., 1995).

Structured and Comprehensive Program Design

The development of a conceptual framework for community college career pathway programs is essential not only for program coherence and operational efficiency, but also for designing and implementing a system of assessment and evaluating program effectiveness. A thorough framework should identify administrative duties, program procedures, educational programming and curricula, financial plans, and community networking strategies (Bragg & Griggs, 1997; Bragg & Hamm, 1996; Duggan & Raspiller, 2007; Jacobs & Bragg, 1994; Price, Graham, & Hobbs, 1997; Raulf & Ayres, 1987). Community colleges have started to create structured program design at the level of curriculum integration. For example, some community colleges purposefully design their courses so that technically-oriented students can take an ordered sequence of basic skills,

academic, and vocational classes at the same time (Badway & Grubb, 1997). Other community colleges offer ways for students to learn and practice theoretical skills through hands-on problem solving in a controlled, but realistic setting (Badway & Grubb). Some community colleges actually partner with local businesses, while also offering students introductory courses on their field of interest, individual student advisors, individualized learning plans, and internships (Grubb & Badway, 1998).

Integrate Curricula

In recent decades, the benefits of integrating academic and vocational curricula received a fair amount of discussion in the scholarly and practical literature. Indeed, by 1992, more than 96% of colleges and technical institutes took some action to integrate academic and vocational education (U.S. Department of Education, 1995). A common form of curricular integration involves increasing basic skills and general education competencies in vocational courses (U.S. Department of Education, 1995); more advanced forms of integration seek to combine academic and vocational coursework into hybrid curricula in which vocational and academic faculty and staff collaborate on program design, curricular offerings, and student learning outcomes (Adler, 1997; Badway & Grubb, 1997; Bragg & Hamm, 1996; Bourdon & Carducci, 2002; Campbell & Wood, 1987; Grubb, 1995, 1999a; Milne, 1998).

Community college practitioners can also restructure students' entire learning processes along more active, constructivist, context-specific, and student-centered lines. The literature describes these learning processes as "situated cognition,"

"communities of practice," "enactivism," and "apprenticeship as a paradigm" (Berryman, 1995; Dare, 2001; Fenwick, 2002; Wenger, 1998). In essence, these terms refer to an active, context-based, process-oriented learning model whereby students learn by doing in a specific occupational context instead of by more traditional academic learning methods like reading, lecturing, or rote memorization. For example, instead of learning calculus through lecture format, which is a common mode of delivery for the subject, some community colleges have instead encouraged students to learn and apply the principles of calculus and applied mathematics to hands on exercises and activities (Badway & Grubb, 1997). Cooperative curricular innovations can help to overcome vocational and academic department divides, which in turn can help secure institutional commitment to ensuring stable funding for cooperative ventures (Grubb, 1999a; Grubb & Badway, 1998).

Integration Seminars

Seminars provided to students before, during, and after placement in vocational programs can be effective in coordinating complex career pathways programs (Badway & Grubb, 1997). Seminars introduce a program or program component; describe labor market issues and career opportunities; introduce internships and connect them to classroom based learning; or integrate diverse program components into a clear school-to-work framework. Especially with integrated academic and vocational curricula, seminars can be used to build up a peer group for social support or to provide a capstone experience for students completing a career pathway or vocational program. Successful seminars often require full-time staffing, an integrated curriculum, and innovative

pedagogical planning (Alssid et al., 2002; Grubb & Badway, 1998). Integration seminars can range from single courses used for student reflection to more complexly organized colloquiums. For example, technical writing courses can be utilized to help students develop and document vocational projects conducted in technical classes (Badway & Grubb). Some courses can also be taught effectively by visiting experts from local industries (Badway & Grubb). The literature suggests that community colleges have also developed specific courses that prepare students to be active learners in internship settings (Grubb, 2001).

Support Structures for Students

There is considerable emphasis in the literature on the need for community colleges to provide vocational students with access to support services that can help ease their progress into and through career pathway programs, particularly for students historically disadvantaged from higher education (Adler, 1997; Alssid et al., 2002; Grubb, 1996b, 1999b). These services may include counseling, mentoring, help with financial aid or scholarship applications, access to childcare, internship and job placement services, and so forth. In addition, upon entry to an educational institution or specific vocational program, students can be interviewed and assessed in order to determine educational, financial, and social needs. Entry interviews and/or assessments would help guide placements for basic academic skills, learning disabilities, financial aid, child care, job placement, social services such as welfare, unemployment, or job training assistance, housing, and academic counseling. Students are not always fully aware of all of the services available to them or the requirements for program completion;

thus, organizing support services and clearly communicating recommendations for individual students has become an acclaimed innovation for aiding student performance and program completion. An important component of this process has been the development of an individualized student plan which includes as well long term career goals (Adler, 1997; Alssid et al., 2002; Bourdon & Carducci, 2002; Duggan & Raspiller, 2007).

Student Internships and Mentors

On-the-job internships are viewed as important pedagogical tools because they promote active, hands-on, and student-centered learning. Indeed, some colleges have developed internship programs as a way to revive apprenticeship educational practices (Doty & Odom, 1997). Doty and Odom posit that in order for students to reap the full rewards of an internship, apprenticeship, or other on-the-job training experiences, program students need to be overseen by mentors at the job site or in the college's vocational programs, as well as by college administrators who can evaluate the effectiveness of the internship process and foster reciprocal relationships with employers. Furthermore, they suggest that internship programs be designed so that the responsibilities of the students, mentors, businesses, and vocational programs together facilitate student learning on the job. For programs of promise, this process includes adequate student preparation for the internship, including an individualized learning plan for what the student expects to gain through the experience and how the internship relates to his or her short- and long-term goals (Grubb & Badway, 1998). Other scholars also emphasize the importance of finding quality mentors who

can facilitate an apprentice's learning experiences and foster employer relationships (Adler, 1997; Alssid et al., 2002; Berryman, 1995; Bragg & Griggs, 1997; Bragg & Hamm, 1996; Grubb & Badway; Price et al., 1997; Villeneuve & Grubb, 1996).

Professional Development for Faculty

For much of the 20th century, vocational faculty in community colleges only needed experience in their particular occupations in order to teach in those programs (Cohen & Brawer, 2003). Although vocational education legislation in the 1980s began to define more concrete educational qualifications for vocational, faculty few instructors today are trained in student-centered pedagogical methods or in program design or curriculum development. Scholars argue that the provision of professional development initiatives or in-service training opportunities for faculty in career pathway programs is imperative if community colleges plan to develop and implement innovative programming and integrated academic and vocational curricula (Grubb, 1999a; Grubb & Badway, 1998; Price et al., 1997).

Appropriate Measures of Accountability

In order to provide a more effective career pathway or vocational education program, community colleges are advised to conceptualize and verbalize the success markers and program outcomes they are working toward so that the programs can be monitored and evaluated (Alssid et al., 2002). Because career pathway programs are complex systems, accountability measures are expected to be similarly nuanced; and faculty and administrators must not only design accountability measures for program and student performance but also for other facets of a career pathways program,

including the curriculum, teaching, counseling, administration, and business partnerships. Jacobs and Bragg (1994) argue for developing accountability measures that evaluate how well a program is responding to regional industry needs. Simplified statewide effectiveness markers—especially those based on ill-defined concepts of "degree completion"—cannot effectively measure the outcomes of a career pathway program that simultaneously prepares some students for the labor market, helps others acquire a new job, and assists still others in upgrading their skills or completing the requirements necessary for an associate degree (Adler, 1997; Bragg & Hamm, 1996; Grubb, 1999b; Grubb et al., 1999; Jacobs & Bragg; Lohman & Dingerson, 2005; Martinez & Echord, 1987; Milne, 1998; Villeneuve & Grubb, 1996).

Tech Prep Programs

Tech Prep was established in 1990 through the reauthorization of the Carl D. Perkins Vocational and Technical Education Act to promote the integration of academic, career, and technical education (Bragg, Kim, & Barnett, 2006). Tech Prep was developed to link secondary and postsecondary technical training into 2+2 or 4+2 credentialing programs, which are intended to then lead to employment in a technical field (Badway & Grubb, 1997; Bragg & Hamm, 1996; Brown, 2001; Lekes, Bragg, Loeb, Oleksiw, Marszalek, Brooks-LaRaviere, Zhu, Kremidas, Akukwe, Lee, & Hood, 2007; Milne, 1998; Stern et al., 1995). Tech Prep initiatives were also conceptualized more broadly as career and technical education (CTE) transition programs, and preliminary research shows that they do help facilitate students' transitions into postsecondary vocational

programs (Lekes et al.). However, there is evidence to suggest that the overall numbers of secondary students enrolling in CTE programs across the nation remained low throughout the 1990s, and enrollments began to drop further in 1999 (Stone & Aliaga, 2003).

Tech prep initiatives also lead to more general and expansive development of "career ladder" or "career pathway" programs (Bragg, Kim, & Barnett, 2006). Based in community colleges and technical institutes, these programs connect with the community, local businesses, and the regional sub-baccalaureate labor market. Normatively, career pathway programs offer integrated academic and vocational programs, work-based learning, mentorship, and are explicitly linked to the labor market in order to help students transition into jobs (Adler, 1997; Alssid, et al., 2002; Bragg & Hamm, 1996; Bragg & Griggs, 1997; Grubb, 1996b, 2001; Grubb et al., 1999; Grubb & Lazerson, 2004; Price et al., 1997; Stern et al., 1995). However, actual implementation of working career pathway programs has been "complex, slow, and incomplete" (Grubb et al., 1999, p. 2; Grubb, 2001). Indeed, Hughes and Karp (2006) note that coherent career pathway programs are only beginning to form, and currently "no state has implemented policies addressing all pieces" of a coherent career pathway system (p. 13). Furthermore, Bragg and Griggs argue that actual linking mechanisms between educational institutions and the labor market are the "least understood" (p. 10) components of the new school-to-work systems. Inadvertently, Tech Prep and career pathway programs also may have paralyzed school-to-work initiatives at the secondary level, leaving a substantial number of non-college bound youth without much help in transitioning to the sub-baccalaureate labor market (Rosenbaum, 2001).

Most states follow articulation agreements that guide the relationships between secondary schools and university systems. Tech Prep collaborations between high schools and community colleges have become widespread and similar vocational education cooperatives between community colleges and universities continue to emerge. In order to provide seamless career pathway programs that span grades K-16 and promote a more general education that can help students not only in their careers but also in society, community colleges are advised to work closely with high schools and universities to ensure that each course and career pathway articulates smoothly from one institution to the next, ultimately providing students with the knowledge and skills necessary for the labor force and for life (Adler, 1997; Arnold, 1987; Bragg & Hamm, 1996; Brown, 2001; Hughes & Karp, 2006; Lekes et al., 2007; Milne, 1998).

Conclusions

Community colleges have long been expected to serve as a bridge between high school and the workforce (Grubb, 2001). At the same time, state and federal governments increasingly look to community colleges to provide vocational education to support economic growth, workforce development, including the training of an obsolete workforce, and economic competitiveness goals of the state (Dougherty & Bakia, 2000; Levin, 2001b).

The purpose of this literature review was to explore the development of vocational education, articulate the challenges and issues facing vocational programs in community colleges, and provide a sketch of

some of the promising practices found in the research literature. While scholars will continue to debate how community colleges' various missions should be carried out in the best interests of both students and society, the literature illustrates that community colleges carry out and embrace multiple functions simultaneously (e.g., vocational education, general education, transfer preparation). Integrating academic and vocational knowledge—through coursework, curricular offerings, and in measuring student outcomes— is stressed in the literature. Active and reflective learning through integration seminars, internships, and other hands-on activities also contribute to student attainment in a number of studies on vocational education. The literature also emphasizes the importance of designing effective measures of student learning and career outcomes. Finally, considerable onus falls upon those who have a leadership role in community college education: administrators, faculty, staff, business and community leaders, and federal and state policymakers all play important roles in the delivery of vocational education by providing a host of services such as community networking, as well as policies that support vocational education and resources that support programs.

References

Aronowitz, S. (2000). *The knowledge factory: Dismantling the corporate university and creating true higher learning.* Boston: Beacon Press.

Adler, L. A. (1997). The role community colleges should play in job placement. In E. I. Farmer & C. B. Key (Eds.), *School-to-work systems: The role of community colleges in preparing students and facilitating transitions. New Directions for Community Colleges*, no. 97 (pp. 41-48). San Francisco: Jossey-Bass.

Alssid, J. L., Gruber, D., Jenkins, D., Mazzeo, C., Roberts, B., & Stanback-Stroud, R. (2002). *Building a career pathways system: Promising practices in community college-centered workforce development.* Brooklyn, NY: Workforce Strategy Center. (ERIC Document Reproduction Service No. ED 470 457)

Arnold, J. P. (1987). Articulating secondary and postsecondary occupational programs. In C. R. Doty (Ed.), *Developing occupational programs. New Directions for Community Colleges*, no. 58 (pp. 57-64). San Francisco: Jossey-Bass.

Ayers, D. F., & Carlone, D. (2007, April). *Hegemony and resistance: Neoliberal ideology in a community college job-training program.* Paper presented at the annual conference of the Council for the Study of Community Colleges, Tampa, FL.

Badway, N., & Grubb, W. N. (1997). *A sourcebook for reshaping the community college: Curriculum integration and the multiple domains of career preparation* (Vols. II) & I. Berkeley, CA: National Center for Research in Vocational Education. (ERIC Document Reproduction Service Nos. ED 412 403 & ED 412 404)

Bailey, T. R. (1995). The integration of work and school: Education and the changing workplace. In W. N. Grubb

(Ed.), *Education through occupations in American high schools: Approaches to integrating academic and vocational education* (Vol. 1; pp. 26-38). New York: Teachers College Press.

Berryman, S. E. (1995). Apprenticeship as a paradigm of learning. In W. N. Grubb (Ed.), *Education through occupations in American high schools: Approaches to integrating academic and vocational education* (Vol. 1; pp. 192-213). New York: Teachers College Press.

Board of Governors of the California Community Colleges, Committee on Economic Development and Vocational Education. (2001). *Ladders of opportunity: A Board of Governors' initiative for developing California's new workforce*. Sacramento, CA: Author. Retrieved May 2007, from: http://www.cccco.edu/reports/reports.htm.

Bourdon, C. M., & Carducci, R. (Eds.). (2002). *What works in the community colleges: A synthesis of the literature on best practices*. Los Angeles: University of California, Los Angeles, ERIC Clearinghouse for Community Colleges. (ERIC Document Reproduction Service No. ED 471 397)

Bragg, D. D. (2002). Contemporary vocational models and programs; What the research tell us. New Directions for Community Colleges, 117, 25 - 34. San Francisco: Jossey-Bass.

Bragg, D. D. (Ed.). (2001). *The new vocationalism in community colleges. New Directions for Community Colleges,* 115. San Francisco: Jossey-Bass.

Bragg, D. D., & Griggs, M. B. (1997). Assessing the community college role in school-to-work systems. In E. I. Farmer & C. B. Key (Eds.), *School-to-work systems: The role of community colleges in preparing students and facilitating transitions. New Directions for Community Colleges*, 97 (pp. 5-13). San Francisco: Jossey-Bass.

Bragg, D. D., & Hamm, R. E. (1996). *Linking college and work: Exemplary policies and practices of two-year college work-based learning programs*. Berkeley, CA: National Center for Research in Vocational Education. (ERIC Document Reproduction Service No. ED 396 115)

Bragg. D.D., Kim, E., & Barnett, E.A. (2006). Creating access and success: Academic pathways reaching underserved students. *New Directions for Community Colleges,* 135 (pp. 5 – 19). San Francisco: Jossey-Bass.

Brint, S., & Karabel, J. (1989). *The diverted dream: Community colleges and the promise of educational opportunity in America, 1900 – 1985*. New York: Oxford University Press.

Brown, C. H. (2001). "Two-year colleges and Tech Prep partnerships: A Texas perspective." In D. D. Bragg (Ed.), *The new vocationalism in community colleges. New Directions for Community Colleges*, 115 (pp. 51-62). San Francisco: Jossey-Bass.

California Community Colleges, Office of the Chancellor. (1993). *Promising practices: Vocational education resource package.* Los Angeles: Evaluation and Training Institute. (ERIC Document Reproduction Service No. ED 357 797)

Campbell, D. F., & Wood, M. T. (1987). General education in the occupational curriculum: Why? To what extent? With what results? In C. R. Doty (Ed.), *Developing occupational programs. New Directions for Community Colleges*, no. 58 (pp. 65-76). San Francisco: Jossey-Bass.

Cohen, A. M., & Brawer, F. B. (2003). *The American community college*. San Francisco: Jossey-Bass.

Dare, D. E. (2001). Learner-centered instructional practices supporting the new vocationalism. In D. D. Bragg (Ed.), *The new vocationalism in community colleges. New Directions for Community Colleges*, no. 115 (pp. 81-92). San Francisco: Jossey-Bass.

Dewey, J. (1916). *Democracy and education: An introduction to the philosophy of education*. New York: Free Press.

Doty, C. R. (Ed.). (1987). *Developing occupational programs. New Directions for Community Colleges,* no. 58. San Francisco: Jossey-Bass.

Doty, A. V. & Odom, R. T. (1997). The apprenticeship revival: Examining community college practices. In E. I. Farmer & C. B. Key (Eds.), *School-to-work systems: The role of community colleges in preparing students and facilitating transitions. New Directions*

for Community Colleges, no. 97 (pp. 61-71). San Francisco: Jossey-Bass.

Dougherty, K. J. (1994). *The contradictory college: The conflicting origins, impacts, and futures of the community college*. Albany: State University of New York Press.

Dougherty, K.J. & Bakia, M.F. (2000). *The new economic development role of community colleges*. New York: Community College Research Center.

Douglass, J. A. (2000). *The California idea and American higher education: 1850 to the 1960 Master Plan*. Stanford, CA: Stanford University Press.

Downey, J. A., Pusser, B., & Turner, J. K. (2006). Competing missions: Balancing entrepreneurialism with community responsiveness in community college continuing education divisions. In B. K. Townsend, & K. J. Dougherty (Eds.), *Community college missions in the 21st century. New Directions for Community Colleges*, no. 136 (pp. 75-82). San Francisco: Jossey-Bass.

Duggan, M. H., & Raspiller, E. (2007, April). *Back to school: Meeting the needs of dislocated workers at the community college*. Paper presented at the annual conference of the Council for the Study of Community Colleges, Tampa, FL.

Falk, I. (1999, Dec). The convergence of vocational and adult education in learning communities. *Community College Journal of Research and Practice*, *23*(8), 697-716.

Farmer, E. I., & Key, C. B. (Eds.). (1997, Spring). *School-to-work systems: The role of community colleges in preparing students and facilitating transitions. New Directions for Community Colleges*, no 97. San Francisco: Jossey-Bass.

Fenwick, T. J. (2002, April). *New understanding of learning in work: Implications for education and training.* Edmonton, Alberta, CAN: University of Alberta.

Grubb, W. N. (1985). The convergence of educational systems and the role of vocationalism. C*omparative Education Review*, *29*(4), 526-548.

Grubb, W. N. (Ed.). (1995). *Education through occupations in American high schools: Approaches to integrating academic and vocational education* (Vol. 1). New York: Teachers College Press.

Grubb, W. N. (1996a). *Learning to work: The case for reintegrating job training and education.* New York: Russell Sage Foundation.

Grubb, W. N. (1996b). *Working in the middle: Strengthening education and training for the mid-skilled labor force.* San Francisco: Jossey-Bass.

Grubb, W. N. (1999a). *Honored but invisible: An inside look at teaching in community colleges.* New York: Routledge.

Grubb, W. N. (1999b). *Edging toward effectiveness: Examining post-secondary occupational education.* Washington, DC: National Assessment of Vocational Education. (ERIC

Document Reproduction Service No. ED 443 967)

Grubb, W. N. (2001). "From isolation to integration: Postsecondary vocational education and emerging systems of workforce development." In D. D. Bragg (Ed.), *The new vocationalism in community colleges. New Directions for Community Colleges,* no. 115 (pp. 27-38). San Francisco: Jossey-Bass.

Grubb, W. N., & Badway, N. (1998). *Linking school-based and work-based learning: The implications of LaGuardia's co-op seminars for school-to-work programs.* Berkeley, CA: National Center for Research in Vocational Education.

Grubb, W. N., Badway, N., Bell, D., Chi, B., King, C., Herr, J., Prince, H., Kazis, R., Hicks, L., & Taylor, J. C. (1999). *Toward order from chaos: State efforts to reform workforce development systems.* Berkeley, CA: National Center for Research in Vocational Education. (ERIC Document Reproduction Service No. ED 427 172)

Grubb, W. N., & Lazerson, M. (2004). *The education gospel: The economic power of schooling.* Cambridge: Harvard University Press.

Hughes, K. L., & Karp, M. M. (2006). Strengthening transitions by encouraging career pathways: A look at state policies and practices. *Community College Research Brief, 30*, 1-4.

Jacobs, J. (2007). Income equity and workforce development: Balancing

the earnings scale. *Community College Journal*, *77*, 22-24. Retrieved May 2007, from: http://ccrc.tc.columbia.edu/Publication.asp?UID=483

Jacobs, J., and Bragg, D. (1994). The evaluation of customized training. In S. L. Kanto (Ed.), *A practical guide to conducting customized work force training. New Directions for Community Colleges, no. 85* (pp. 13-24). San Francisco: Jossey-Bass.

Jacobs, J., and Dougherty, K. J. (2006). The uncertain future of the community college workforce development mission. In B. K. Townsend & K. J. Dougherty (Eds.), *Community college missions in the 21st century. New Directions for Community Colleges,* no. 136 (pp. 53-62). San Francisco: Jossey-Bass.

Kantor, H. A. (1988). *Learning to earn: School, work, and vocational reform in California, 1880-1930.* Madison: The University of Wisconsin Press.

Kasper, H.T. (2003, Winter). The changing role of the community college. *Occupational Outlook Quarterly,* 14 – 23.

Kantor, S. L. (Ed.). (1994). *A practical guide to conducting customized work force training. New Directions for Community Colleges,* no. 85. San Francisco: Jossey-Bass.

Kisker, C. B., & Carducci, R. (2003). Community college partnerships with the private sector: Organizational contexts and models for successful collaboration. *Community College Review*, *31*(3), 55-74.

Kisner, M. J., Mazza, M. J., & Liggett, D. R. (1997). Building partnerships. In E. I. Farmer & C. B. Key (Eds.), *School-to-work systems: The role of community colleges in preparing students and facilitating transitions. New Directions for Community Colleges,* no. 97 (pp. 23-28). San Francisco: Jossey-Bass.

Kliebard, H. M. (1999). *Schooled to work: Vocationalism and the American curriculum, 1876 – 1946*. New York: Teachers College Press.

Lekes, N., Bragg, D. D., Loeb, J. W., Oleksiw, C. A., Marszalek, J., Brooks-LaRaviere, M., Zhu, R., Kremidas, C. C., Akukwe, G., Lee, H. J., & Hood, L. K. (2007). *Career and technical education pathways programs, academic performance, and the transition to college and career*. St. Paul: University of Minnesota, National Research Center for Career and Technical Education. Retrieved September 2007, from http://www.nccte.org/publications/infosynthesis/r&dreport/CTE_Pathway_Programs.pdf.

Levin, J. S. (2001a). *Globalizing the community college: Strategies for change in the twenty-first century*. New York: Palgrave.

Levin, J. (2001b). Public policy, community colleges, and the path to globalization. *Higher Education, 42*(2), 237-262.

Levin, J. S., Beach, J. M., & Kisker, C. B. (2007). *Short-term credentials and the California community college curriculum, 1993-2006.* Riverside:

University of California, Riverside, California Community College Collaborative.

Lisman, C. D. (Ed.). (2001). *The community college role in welfare to work. New Directions for Community Colleges,* no. 116. San Francisco: Jossey-Bass.

Lohman, E. M., & Dingerson, M. R. (2005). The effectiveness of occupational-technical certificate programs: Assessing student career goals. *Community College Journal of Research and Practice*, *29*(5), 339-55.

Lucas, C. J. (1994). *American higher education: A history*. New York: St. Martin's Griffin.

Martinez, T., Jr., & Echord, B. S. (1987). Occupational program evaluation. In C. R. Doty (Ed.), *Developing occupational programs. New Directions for Community Colleges,* no. 58 (pp. 77-86). San Francisco: Jossey-Bass.

Merkel-Keller, C. (1988, April). *The battle for vocational education: An evaluation of the study plan for the national assessment (NAVE) and its first year implementation.* Paper presented at the annual meeting of the American Educational Research Association, New Orleans, and LA. (ERIC Document Reproduction Service No. ED 292 990)

Milne, A. M. (Ed.). (1998). *National assessment of vocational education: Educational reform and vocational education* (Report no. PLLI-98-8060). Washington, DC: U.S. Department of Education, National Institute on Postsecondary Education. (ERIC Document Reproduction Service No. ED 421 659)

Morrison, E. J. (1979, April). *National assessment of vocational education needs*. Paper presented at the annual meeting of the American Educational Research Association, San Francisco, CA. (ERIC Document Reproduction Service No. ED 171 923).

Organization for Economic Cooperation and Development. (2005). *From education to work: A difficult transition for young adults with low levels of education*. Paris, FRA: Author.

Orr, M. T. (2001). "Community colleges and their communities: Collaboration for workforce development." In D. D. Bragg (Ed.), *The new vocationalism in community colleges. New Directions for Community Colleges,* no. 115 (pp. 39-50). San Francisco: Jossey-Bass.

Price, C., Graham, C., & Hobbs, J. (1997). Workplace mentoring: Considerations and exemplary practices. In E. I. Farmer & C. B. Key (Eds.), *School-to-work systems: The role of community colleges in preparing students and facilitating transitions. New Directions for Community Colleges,* no. 97 (pp. 49-59). San Francisco: Jossey-Bass.

Raulf, J. F., & Ayres, M. C. (1987). The challenge of curriculum development: From idea to reality. In C. R. Doty (Ed.), *Developing occupational programs. New Directions for Community Colleges,* no. 58 (pp. 9-24). San Francisco: Jossey-Bass.

Rosenbaum, J. E. (2001). *Beyond college for all: Career paths for the forgotten half*. New York: Russell Sage Foundation.

Shaw, K. M., Goldrick-Rab, S., Mazzeo, C., & Jacobs, J. A. (2006). *Putting poor people to work: How the work-first idea eroded college access for the poor*. New York: Russell Sage Foundation.

Slaughter, S., & Leslie, L. L. (1997). *Academic capitalism: Politics, policies, and the entrepreneurial university*. Baltimore, MD: Johns Hopkins University Press.

Spangler, M. S. (Ed.). (2002). *Developing successful partnerships with business and the community*. *New Directions for Community Colleges,* no. 119. San Francisco: Jossey-Bass.

Stern, D., Finkelstein, N., Stone, J.R., Latting, J., & Dornsife, C. (1995). *School to work: Research on programs in the United States*. The Stanford Series on Education & Public Policy, no. 17. London, ENG: Falmer Press.

Stone, J. R., & Aliaga, O. A. (2003). *Career and technical education, career pathways, and work-based learning: Changes in Participation 1997-1999*. St. Paul: University of Minnesota, National Research Center for Career and Technical Education. Retrieved September 2007, from: http://www.nccte.org/publications/infosynthesis/r&dreport/CTE_CareerPathways_Stone_Aliaga_Res.pdf.

Summers, M. D. (2001). The role of leadership in successful vocational initiatives. In D. D. Bragg (Ed.), *The new vocationalism in community colleges. New Directions for Community*

Colleges, no. 115 (pp. 17-26). San Francisco: Jossey-Bass.

Thelin, J. R. (2004). *A history of American higher education.* Baltimore, MD: Johns Hopkins University Press.

Townsend, B. K. (2001). Blurring the lines: Transforming terminal education to transfer education. In D. D. Bragg (Ed.), *The new vocationalism in community colleges. New Directions for Community Colleges,* no. 115 (pp. 63-72). San Francisco: Jossey-Bass.

U.S. Department of Education. (1986). Study plan for the national assessment of vocational education. Washington, DC: U.S. Government Printing Office. (ERIC Document Reproduction Service No. ED 289 043)

U.S. Department of Education. (1988). First interim report from the National Assessment of Vocational Education. Washington, DC: U.S. Government Printing Office. (ERIC Document Reproduction Service No. ED 290 881)

U.S. Department of Education, National Center for Educational Statistics. (1995). *Vocational education in the United States: The early 1990s*. Washington, DC: Author.

U. S. Department of Education. (2002). Appendix: Challenges in the implementation of the Perkins III accountability system. In U.S. Department of Education, *Carl D. Perkins Vocational and Technical Education Act of 1998: Report to congress on state performance, program year 1999-2000* (pp. i-xi).

Washington, DC: U.S. Government Printing Office.

Valek, M. M. (1995). Civic trusteeship: A collaborative model for community development. In J. Killacky & J. R. Valadez (Eds.), *Portrait of the rural community college. New Directions for Community Colleges*, no. 90 (pp. 79-84). San Francisco: Jossey-Bass.

Villeneuve, J. C., & Grubb, W. N. (1996). *Indigenous school-to-work programs: Lessons from Cincinnati's co-op education*. Berkeley, CA: National Center for Research in Vocational Education. (ERIC Document Reproduction Service No. ED 398 412)

Fisher, M.G. & Fowler, D. (2006). *Working it out: Community colleges and the workforce investment act.* Berkeley, CA: Institute for the Study of Family, Work, and Community.

Wenger, E. (1998). *Communities of practice: Learning, meaning, and identity*. Cambridge, ENG: Cambridge University Press.