The costs of remedial and developmental education in postsecondary education

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ABSTRACT

Current research and policy literature indicate an increase in remediation courses nationwide (Tierney & Garcia, 2011; Parsad & Lewis, 2003). However, the most critical theme in research suggests variability and possible inaccuracies in remedial and developmental education data (Kirst, 2007; Venezia, Kirst & Antonio, 2004). In particular, there is little current research surrounding the actual costs of remedial education (Kirst, 2007; The Institute for Higher Education Policy, 1998). The significance of inaccurate remediation costs means that education leaders and policy makers could perceivably be making decisions based upon poor data (Attewell, Lavin, Domain & Levey, 2006). In addition, research indicates that education finance and budget policy is affected by increases in remediation (Jenkins & Boswell, 2002). Jenkins and Boswell (2002) reported that universities are not given adequate financial incentive to provide remedial education. This may prove true especially for community colleges since they bear the burden of providing most remedial education in postsecondary education (Boylan & Saxon, 1999). Overall, in order to formulate sound remediation cost policy, education leaders and policy makers need reliable information.

Keywords: Remediation costs, postsecondary education, developmental education, higher education, remedial courses, developmental courses

INTRODUCTION

This journal article seeks to examine the costs of remedial or developmental education in higher education. Overall, current research and policy literature indicate an increase in remediation courses nationwide (Parsad & Lewis, 2003). However, the most critical theme in research suggests variability and possible inaccuracies in remedial and developmental education data (Kirst, 2007; Venezia, Kirst & Antonio, 2004). In particular, there is little current research surrounding the actual costs of remedial education (Kirst, 2007; The Institute for Higher Education Policy, 1998). The significance of inaccurate remediation costs means that education leaders and policy makers could perceivably be making decisions based upon poor data (Attewell, Lavin, Domain & Levey, 2006). In addition, research indicates that education finance and budget policy is affected by increases in remediation (Jenkins & Boswell, 2002). Jenkins and Boswell (2002) reported that universities are not given adequate financial incentive to provide remedial education. This may prove true especially for community colleges since they bear the burden of providing most remedial education in postsecondary education (Boylan & Saxon, 1999). Overall, in order to formulate sound remediation cost policy, education leaders and policy makers need reliable information.

Research revealed common definitions of remedial and developmental education. Kirst (2007) defines remedial and developmental education as coursework that is below college-level. Attewell, Lavin, Domina, and Levey (2006), defined remedial education and developmental education as college preparation (Attewell, et al 2006). The most common types of remedial or developmental courses are provided in the areas of writing, reading, and mathematics (Phipps, 1998; Cohen & Brawer, 2002). It is important to note for the purpose of this article, remedial education and developmental education are defined as postsecondary courses designed to prepare a student for college-level academics.

The remaining part of this article is organized into four sections: remedial education and programs; remedial education cost policy; remediation cost data and analysis; and remediation costs summary. In the remedial instruction and programs section the researcher will introduce a brief history of remedial education and provide an overview of current remedial education programs. Next, the remedial cost policy section will highlight cost policy decisions. In particular, this section will review policy at the national and state levels. This section will also illustrate the subsequent impact of remediation cost policy to institutions, students, and student financial aid. The next section will indicate remediation cost data and analysis. Included in this section are current trends in cost data capture and analysis. This includes possible deficiencies in the capture of cost data, accountability, analysis of cost data, and assumptions about the data. The last section of the paper is a summary including the implications of continued use of unreliable cost data and the opportunities for future research to improve remediation cost policy. The intent of the organization of this paper is to provide the reader with a presentation of remediation costs from the most general to a narrow perspective.

REMEDIAL EDUCATION AND PROGRAMS

Brief history of remedial education

Remedial education has existed in United States higher education since the colonial period (Cohen & Brawer, 2002). Furthermore, open access or open-door education is central to the discussion concerning remedial or developmental education (Cohen & Brawer, 2002). In other words, open access education served as a catalyst for remediation programs and policy. Open access may be defined as open enrollment or higher educational access for everyone (Long, 2007). Moss and Yeaton (2006) acknowledged from one perspective that open admissions policies may have created two parallel disconnected educational systems. The two systems affect student outcomes in an unfavorable way and serve as barriers to students in need of remedial education (Moss & Yeaton, 2006). Conversely, Moss and Yeaton (2006) argued that remedial or developmental education is essential to higher education and the increased need is inevitable.

Historically as community colleges evolved to serve area communities, access to higher education opportunities increased. It appears that fewer students are taking remedial courses in 4-year institutions while community colleges are experiencing increases (Adelman, 2006; McClure, 2011). According to Perin (2006), remedial education is central to the mission of community college education. Although remedial and developmental classes have existed for some time within the community college and university setting, more of the burden continues to shift toward community colleges to deliver remedial education (Attewell et al., 2006). Depending on the size and demographics of a community college, between 60% - 80% of incoming students need some type of remediation (Merrow, 2007). Most of the time these courses are taught by new or part time staff who lack proper training (Merrow, 2007). Institutions deliver remedial education via three modalities: standard remedial courses, modified remedial courses, and special programs (Perin & Charron, 2006). Standard remedial courses provide traditional semester courses with class instruction and labs (Perin & Charron, 2006). Modified remediation include self paced classes, tutors, supplemental student instruction, online courses, and other supplemental student services directly related to remedial courses (Perin & Charron, 2006). Special programs are designed for high-need or high risk students (Perin & Charron, 2006). These may include learning communities or cohort based learning combined with specialized remedial student services (Perin & Charron, 2006).

One view indicates it is difficult to ascertain whether remediation is expanding in scope or size (Phipps, 1998). While enrollments continue to rise at approximately six percent there is little change in the relative number of students enrolled in remedial courses (Phipps, 1998). However, according to Boylan and Saxon (1999), costs will rise due to an expected need for additional developmental courses. Eventually, costs will also continue to rise as the pressure to provide more and more remedial classes increase (Parsad & Lewis, 2003). The subsequent increases in costs will inevitably affect remediation cost policy for all higher education yet especially for community colleges (Jenkins & Boswell, 2002).

Overview remedial education instruction, assessment, and programs

Giuliano and Sullivan (2007) asserted that without adequate reading, writing, math, critical thinking, and study skills, remedial students will struggle toward degree completion. Remediation may hinder student momentum and progression through their academic course and eventual degree completion (Adelman, 2006). However, as a student successfully masters remedial course work, momentum toward completion speeds up (Adelman, 2006). Remedial and developmental courses are often referred to as a second chance for many students in need of developing skills for college (Achieve Inc., 2008). According to Phipps (1998) there are four components to remediation; assessment and placement, curriculum design and delivery, support services or activities, and, evaluation or accountability. However Boylan and Saxon (1999) delineated successful remediation into several components: "(a) classroom/laboratory integration, (b) institution-wide commitment, (c) consistency of academic standards, (d) learning communities and paired courses, (e) supplemental instruction, (f) strategies learning, (g) professional training, (h) student orientation, and, (i) providing critical thinking skills" (pp. 6-8). According to the National Center for Educational Statistics (2004), 40% of all incoming freshmen require at least one remedial or developmental course. According to another study, 46% of students enrolled in the California State University system need to take remedial courses in math and english (Conley, 2007). The number of degree granting institutions that enrolled freshmen increased by 7% from 1995 to 2000 (Parsad & Lewis, 2003).

Assessments and placement

The literature points toward variation in student assessments and placement. Von Destinon (1983) stated that placement and admissions policies concentrate on a student's future capacity to achieve academic work at the higher education level, while other policies address existing academic ability. There is much variability across institutions and educational systems concerning assessments used to determine which students need remedial or developmental education (Kirst, 2007). Attewell et al., (2006) found, no universal cut-off point that indicates a student requires remediation. Perin (2006) discussed a trend whereby institutions implement remediation yet assessment mandates cause a reduction of remedial enrollment. Perin (2006) asserted that the lack of universal placement standards is indicative of the struggle to balance access mission with educational standards.

REMEDIAL EDUCATION COST POLICY

Remediation cost policy and implications

Overall there is limited research concerning actual costs of remedial education (Kirst, 2007; The Institute for Higher Education Policy, 1998). Of the research that is available, current cost information reflect direct amounts allocated via federal or state budget making process (The Institute for Higher Education Policy, 1998). Some information reveals costs in terms of expenditures while other information is accounted for in terms of appropriations (Phipps, 1998). Institutional remediation policy usually focuses upon skills assessment and placement process (Venezia, Kirst & Antonio, 2004). Some research has shown that remedial education is less expensive to deliver that other college courses (City of New York, 1999; The Institute for Higher

Education Policy, 1998). The unit cost of a remedial class is relatively lower that the cost of all other courses that count toward a degree (Phipps, 1998). Not all other costs associated with remedial education are indicated in costs analysis, cost estimates, or projections (The Institute for Higher Education Policy, 1998; Saxon & Boylan, 2004). Other costs would include assessment, advisement, tutoring, supplemental instruction, and lab fees (The Institute for Higher Education Policy, 1998). According to Phipps (1998), the social costs of not providing remedial education are unemployment, low paying jobs, and welfare. Benefits include stronger participation in the global marketplace, improved local economies, decreased crime rates and improved quality of life (Phipps, 1998). Phipps (1998) posits that successful remediation programs can offset costs with substantial revenues that are generated throughout the course of a student's journey toward completion. He also argues that policy discussions should include realization of both costs and revenues (Phipps, 1998).

Federal costs

According to information from ACT (2005) and Brothen and Wambach (2004), developmental education costs are estimated at $1 billion every year. However, Phipps (1998) estimated remedial education costs the nation nearly $2 billion and reflects approximately 2% of all other costs for higher education (Phipps, 1998). Conley (2007) pointed out as a student requires remedial classes, time toward completion is extended. This indicates a hidden cost of remedial education (Conley, 2007). Some opponents have argued remedial education constitutes redundant costs at the federal and state level (Saxon & Boylan, 2001). These opponents also questioned the use of federal and state aid for such purposes (Saxon & Boylan, 2001).

State costs

An ongoing trend indicates costs for remediation are covered more and more by state budget rather than by local districts (Cohen & Brawer, 2002). Typically, statewide remediation costs are less than 10% of education as a whole (Saxon & Boylan, 2001). Usually state remediation costs are between 1% and 2 % (Saxon & Boylan, 2001). Saxon and Boylan (2001) added that budget growth is at a standstill and will remain stagnant. State remediation cost data varies by state due to inconsistencies with data reporting (Breneman, 1998). Some states report actual expenditures and some report budget appropriations (Breneman, 1998). In addition, some states report upon remedial instruction only, while others provide extensive cost analysis that includes all other related indirect costs (Breneman, 1998). Costs and spending is higher in community colleges than in universities (Breneman, 1998). This is simply because most remedial education occurs at the community college level so community college remedial budgets are proportionately much higher (Breneman, 1998). Breneman (1998) also argued that remedial courses should be tuition free. In other words, the students should not have to pay for skills they should have been taught properly in secondary school.

While there is evidence in the literature that educational leaders and policy makers use remediation data in formulating decisions, remediation policies continue to vary (Gerlaugh, Thompson, Boylan, & Davis 2007). In one study Gerlaugh, Thompson, Boylan, and Davis (2007) found that state education leaders consult current research while considering and designing remediation policy at the institutional level. Topics under consideration within

institutions include mandatory placement, evaluation, supplemental services, and the use of part time instructors to deliver remedial courses (Gerlaugh, Thompson, Boylan, & Davis 2007). According to Boswell (2002) three issues have been at the forefront of state policy, they are: mandatory remediation for all students who fail placement exams; accountability for remedial education, and; performance based rewards for successful remedial programs. Jenkins and Boswell (2002) reported that universities are not given financial incentive to provide remedial education.

The literature suggests increases in remediation will continue to affect the need for improved policy at the institutional community college level as states continue to encourage four-year institutions to limit delivery of remedial programs (Jenkins & Boswell, 2002). The research shows that remedial education regulations and standards vary among states (Jenkins & Boswell, 2002). In addition, the literature indicates that education finance and budget policy is affected by the increases in remediation. The literature also affirms that in order to formulate sound remediation policy, policymakers need reliable information (Boswell, 2002). Kirst (2007) and Saxon and Boylan (2001) indicated a lack of adequate remediation cost data. They noted inconsistencies with data capture and gaps in cost data (Kirst, 2007; Saxon & Boylan, 2001). An analysis of state costs is difficult due to the variations in definition, calculations, comparisons, and methodologies (Saxon and Boylan, 2001; City of New York, 1999). Estimates are far easier to calculate on an institutional case by case basis (Saxon and Boylan, 2001).

Institution costs

While there are some components of higher education that are budgeted at the federal and state level, developmental education is typically set at the institution level (Boylan, Bonham, Clark-Keefe, Drewes, S., and Saxon, 2004). In addition, one study indicated that remedial education receives a reasonable proportion of funding in relation to most institutional budgets (Boylan et al, 2004). Furthermore, Boylan et al, (2004) avowed that developmental education courses receive a more than adequate share of institutional resources. Cohen and Brawer (2002) argued that remedial education is delivered as a benefit to local communities and society in general, and should receive higher budgets. However, they also acknowledged that remedial or developmental education costs less to deliver than other academic programs. Some research suggested remedial and developmental education generates sufficient revenue (Merrow, 2007). It is relatively less expensive to operate remedial programs because institutions typically pay instructors less (Merrow, 2007). Saxon and Boylan (2001) also argued that remedial courses pay for themselves. They reported revenues far exceed costs and state remedial programs have yet to operate at a loss. As stated within a report by the city of New York (1999), revenues exceed costs by approximately 48%. Of the total revenue generated within the City University of New York (CUNY) system 62% comes from remedial education programs (City of New York, 1999). Total remedial education revenues are generated via tuition, state financial aid and federal student aid (City of New York, 1999). Community colleges generate 40% of total revenues from tuition and fees (City of New York, 1999). Community college revenues generated from state aid comprise 42% of all incoming state aid sources (City of New York, 1999). Community college federal aid accounts for 4% of revenue at community colleges (City of New York, 1999). In addition, increased revenues from remedial programs usually support other programs (Saxon & Boylan, 2001). Saxon and Boylan (2001) affirmed that remedial costs are relatively low compared to

other institutional programs. They stated that much depends upon the overall value of remedial education (Saxon & Boylan, 2001).

When remedial courses are not mandatory it is difficult to calculate the additional instructional costs associated with having students in need of remediation in non-remedial courses (Saxon & Boylan, 2001). Often faculty need to adjust course content and instruction delivery to accommodate such students (Saxon & Boylan, 2001). In addition, remedial standards vary from institution to institution and from state to state (The Institute for Higher Education Policy, 1998). Institutions with broader definition of remedial and developmental education typically report higher costs (The Institute for Higher Education Policy, 1998). Accurate cost calculations are further inhibited when faculty teach both remedial and college-level courses (The Institute for Higher Education Policy, 1998). Policy makers in some states are considering outsourcing remedial education (Phipps, 1998). However remedial outsourcing is still not a standard practice (Phipps, 1998). Outsourcing would have to prove even more cost effective than current practice (Phipps, 1998). Institutions will need to maintain revenue amounts equal or greater than what is currently generated from remedial education (Phipps, 1998).

Student costs and financial aid

The need for remediation extends the time to graduate and increases the costs of remediation for students (Venezia, Kirst & Antonio, 2004). Remedial students generally need to complete remedial or developmental course work before taking any courses that count toward degree (Goldstein, 1997). Although policies concerning the use of federal financial aid for remedial students are complex, in general, remedial courses are eligible for payment with federal financial aid (Goldstein, 1997). However, in order to qualify for use of financial aid toward remedial classes, a student must be taking remedial courses that will prepare them specifically for coursework leading to completion of a degree or certificate (Goldstein, 1997). Also students must maintain satisfactory academic progress (Goldstein, 1997). Federal law defines satisfactory academic progress in higher education to mean a C average or 2.0 GPA or better (Goldstein, 1997).

Even though financial aid may be used toward remedial and developmental courses, federal regulations may limit the amount of money and the amount of time a student has before they become ineligible for federal aid (Goldstein, 1997). Because remediation extends the time toward completion, remedial students exhaust their total allotment of federal aid before they complete their course of degree (Goldstein, 1997). Federal policy is designed to prohibit institutions from taking advantage of federal aid for students that do not intend to complete a degree or certification within a reasonable time frame (Goldstein, 1997). Plus, limitations in the use of federal aid for remedial courses are intended to restrict institution from using federal aid for courses below post secondary education (Goldstein, 1997).

REMEDIAL EDUCATION COST DATA AND ANALYSIS

Accountability and data

Certain literature indicated remedial rates are increasing (Saxon & Boylan, 2001). Yet it appears that valid and reliable data used to compute these rates is scarce (Saxon & Boylan, 2001). The literature suggested the remediation data dilemma takes place nationwide (Kirst,

2007). Kirst (2007) stated national and state level remediation data is deficient in how many students need remedial education, how many students actually take it, how many students are successful, and how much remediation costs. Moss and Yeaton (2006) found a lack of cohesive variables, outcomes and measures tied to remedial education. Carey (2007) stated institutions need accountability systems in place in order to ensure program evaluation and successful programs. Georgia and Oklahoma are the only states to include remediation as a component in their statewide accountability systems (Achieve Inc., 2008). Along with universal placement standards and improved data systems it is important to include remediation into high school and college accountability systems (Achieve Inc., 2008). Carey (2007) admited institutions face difficulty in obtaining assessments because assembly of remedial information is a complex and often difficult task. Cary (2007) also pointed out that states often rush quickly to build accountability systems and overlook valuable student information. In addition, it is difficult to assess program costs or effectiveness when data does not easily link with necessary high school district data or transfer data (Venezia, Kirst & Antonio, 2004).

According to Saxon and Boylan (2001), overarching strategic remediation policy decisions should be made with caution because there are problems in the data. Cost comparisons are difficult due to issues with scope of individual systems, the size of data sets, variations in type of data reported (appropriations vs. expenditures), and time period (Saxon & Boylan, 2001). Plus, there are inconsistencies in the centralization and decentralization concerning where remedial programs are housed (Saxon & Boylan, 2001). Half of all remedial courses are housed within their respective departments while some are housed within a centralized developmental program office (Saxon & Boylan, 2001). Institutions may underestimate remediation costs data because perceivably the public may call for heightened accountability if costs increase (Saxon & Boylan, 2001). Plus, institutions may hold back accurate data due to perceived lower academic status associated with remedial education (Saxon & Boylan, 2001).

Overwhelmingly institutions across the nation capture different remediation data (Kirst, 2007). The result is incomplete data for aggregate analysis (Kirst, 2007). Developmental education enrollments inaccurately reflect the actual preparedness of students therefore the number of students who need remedial or developmental education may be higher than estimates indicate (Perin, 2006). Not only are the data inaccurate, the research indicates variation in assessment. Von Destinon (1983) stated education leaders face difficulty in assessing the academic ability of the student and use varying methods to determine basic skills students. Institutions use one or more determinant to evaluate academic ability: class standing, grade point average, grade equivalent scales ACT/SAT scores, and institutionally designed tests (Von Destinon, 1983). Adelman (2004) added that student remedial assessment and evaluation is primarily based upon three major measures of high school performance: curriculum intensity, class rank/GPA, and ACT/SAT scores. He argued the senior year test score is the strongest indicator of a student's need for remediation (Adelman, 2004).

Some literature offered solutions surrounding remediation data capture and analysis. One report in the literature highlighted current policy discussions surrounding a national education data system that would facilitate improvements in remediation data (McNeil, 2007). McNeil (2007) indicated challenges continue concerning common data standards and compatible data systems. Along the same line, Campbell, DeBlois, and Oblinger (2007) presented the use of analytics to deal with remedial and developmental improvement practices. Analytics allows faculty and advisors to customize instruction and provide tailored services to specific learning needs (Campbell et al, 2007). Campbell et al. (2007) suggested analytics useful in dealing with

large datasets, statistical techniques, and predictive modeling. Other solutions presented in the literature suggest new research models. One viable means of analysis institutions can use to evaluate remediation costs is statistical decision theory (ACT, 1989). In particular, statistical decision theory is a useful assessment tool to determine the benefits and costs associated with remedial placement (ACT, 1989).

In a study and survey of current educational research methods Hsu (2005) indicated a shift from quantitative to qualitative methods. However, of the quantitative methods currently used, the comparative approach seems prevalent in educational research (Hsu, 2005). Hahs-Vaughn (2006) proposed model-based and design-based strategies for approaching the United States Department of Education's National Center for Education Statistics (NCES) data. Model and design strategies may prove useful with remediation data due to the unequal nature of the reported data and the need to use clustered sampling (Hahs-Vaughn, 2006).

SUMMARY, ANALYSIS, AND DISCUSSION

Summary

The need for developmental education is unavoidable and education leaders must be held accountable for the continued development and quality of remedial education (Brothen & Wambach, 2004). Moreover, developmental education and remediation are components of responsible social policy, therefore educational leaders and policy makers need to focus on improving developmental education (McCabe. 2000). Policymakers and education leaders will benefit from K-16 or K -20 systems. Innovative systems such as these could enhance improved remediation cost policy (Venezia, Kirst & Antonio, 2004). Adelman (2006) argued remediation data inaccuracies prevent constructive policy. He urged policy makers and education leaders that there is substantial work needed in this area (Adelman, 2006). In particular, he encouraged work toward more universal and efficient student tracking systems (Adelman, 2006). In that same vein and at the heart of the discussion surrounding remedial education, one must acknowledge the need to align K-12 systems with higher education (Phipps, 1998). According to Bailey, Jeong, and Cho (2010), colleges and universities are providing a more sequential approach to remedial education for those students who scored low on their placement tests. It is important to note that remedial and developmental courses are often referred to as a second chance for many students in need of developing skills for college (Achieve Inc., 2008). Tierney and Garcia (2011) blame the lack of solid research as a cause for the lack strategies designed to promote student completion and success.

Analysis and discussion

It is apparent in research that remediation rates are increasing especially in community colleges. The Charles A. Dana Center of Complete College America (2012) declared in its joint statement:

> With half of all students in postsecondary education taking one or more remedial education courses and college completion rates for those students well below state and national goals, it is critical that remedial education reform is an essential

> component of state and national college completion efforts at both the institutional and state policy level (p. 1).

Budgets remain stagnant even though remediation more than pays for itself and supports other programs. Excess revenue could be used toward improved data systems. It seems evident that disconnected data systems impede the ability to obtain precise data and determine an accurate picture of all remediation components including actual costs, cost estimates, and cost projections. It may be difficult for other programs to forgo the budget provided by excess revenue generated by remedial programs. While there are those who would suggest remediation is a good investment for the institution and society, the contemporary completion rates might dispute that assertion. Tierney and Garcia (2011) argued the very efficacy of remedial courses is still unclear. In addition, institutions have yet to assess Massive Open Online Courses (MOOCS) remedial education and the complex implications of articulation, data tracking and the cost equation (Barrod, Goldstein, & Ferenbach, 2013; Bednar, 2013). However, there are severe implications at all levels if the informational issues are not resolved. The implications include the possibility of underestimated figures including all cost data, the deterioration of assessment, and ineffective programs. Armed with an accurate picture of remediation, education leaders and policymakers could make more informed management and policy decisions.

Future research to improve remediation cost policy

Overall, the remediation literature lacks specific research accounting for the underlying issues that contribute to incomplete data and the subsequent impact upon remediation policy. It is difficult to tell at this point what specific components within the information pipeline need improvement. One specific example is that the research is deficient in information concerning students who fall through the cracks or do not succeed from taking remedial courses. If remediation is indeed a second chance for students who lack college level skills, then it seems educational leaders ought to have information about students that missed their second chance.

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