Spring 2018

Volume 46 Number 1

EIU College of Education

Eastern Education Journal

College of Education and Professional Studies
Eastern Illinois University
Volume 46, Number 1, Spring 2018

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Address all inquiries to:

Office of the Dean, College of Education and Professional Studies
Eastern Illinois University
Eastern Education Journal
600 Lincoln Avenue
Charleston, IL 61920
E-mail: edjournal@eiu.edu

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Children's Career Aspirations and STEM Occupations

Donna M. Plummer, Ph.D.

Professor of Education

Centre College

600 W. Walnut Street

Danville, KY 40422

859-238-5308

donna.plummer@centre.edu

Definitive Abstract

This five-year longitudinal study of children's career aspirations in Grades 1 through 5 used individual survey interviews (total = 298) to ascertain if children aspire to Science, Technology, Engineering, and Mathematics (STEM) occupations. The primary influences on children's STEM aspirations included their families (37.86%) and career role models (22.86%) such as family physicians. As students progressed from Grades 1 through 5 a higher percentage of girls than boys expressed interest in STEM occupations.

Abstract

The purpose of this study was to determine if elementary school children aspire to Science, Technology, Engineering, and Mathematics (STEM) occupations. This five-year longitudinal study of children's career aspirations via individual survey interviews (total = 298) in Grades 1 through 5 demonstrated that both female and male students aspired to such traditional STEM professions as veterinarians and doctors. A literature review of career development and STEM education is included in addition to consideration of influences such as gender on children's aspirations and career development strategies. The primary influences on children's STEM aspirations included their families (37.86%) and career role models (22.86%) such as family physicians. Of the twelve students completing each of the ten surveys, six students maintained a specific career aspiration for 2.5 to 5 years. As students progressed from Grades 1 through 5 a higher percentage of girls than boys expressed interest in STEM occupations. Interest in scientific and technical careers ranged from 23.81% (fifth-grade boys' responses) to 60.87% (second-grade girls' responses) during the 5 years of the study.

Key Words: career aspirations, children, STEM, science

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Children's Career Aspirations and STEM Occupations

Will the number of graduates in Science, Technology, Engineering, and Mathematics (STEM) fields meet employers' needs and maintain the United States' ability to compete with other countries (U.S. Government Accountability Office [GAO], 2006; Zollman, 2012)? Since our occupations define us as members of society, children do begin to consider a variety of careers even at a young age (Gottfredson, 1981). Children are frequently asked the question, "What do you want to be when you grow up?" This seemingly simple question raises additional questions such as: 1) How do children decide upon a career aspiration?, 2) What role do sociopolitical factors play in their choices?, 3) Who and what influences their choice of career?, 4) What strategies might assist students as they explore career options including STEM careers such as geologist, engineer, and veterinarian?, and 5) How might we assist children in viewing future careers in more realistic terms? The purpose of this study was to determine if elementary school children aspire to STEM occupations.

Further examination of children's aspirations in relation to STEM careers is necessary since the "career exploration process" (Gibson, 2005, p. 356) begins during childhood. An early interest in STEM careers is important so that children can be encouraged and prepared to pursue these interests. For example, when children do not acquire basic math skills in elementary grades, the middle school years may result in abandonment of aspirations such as engineering that require mathematics. Multiple sources (Flick & Lederman, 2002; Sanders, 2009; Shanahan, Pedretti, DeCoito, & Baker, 2011) endorse the elementary level as a logical beginning for the development of STEM education. That is, children's aspirations are the foundation for adolescents' aspirations. Although the development of career aspirations is a complex process, adults including teachers and family members play an important role in this development even in

young children (e.g., Trice, Hughes, Odom, Woods, & McClellan, 1995). However, in spite of the efforts of school guidance counselors and teachers, many students continue to "demonstrate a shallow understanding of how school relates to the real world and show limited awareness of the skills and knowledge needed for success in the future" (Johnson, 2000, p. 272). This study explores children's career aspirations and their understanding of those careers.

Literature Review

Gender and Children's Career Aspirations

Although children's aspirations for future careers may vary from day to day, Gottfredson (1981) defined aspiration as "the single occupation named as one's best alternative at any given time" (p. 548). She determined that occupational perceptions are similar among people regardless of factors such as age. Children tend to select a career choice based on their gender (Sellers, Satcher, & Comas, 1999) with boys demonstrating greater interest than girls in enrolling in science classes in a study of elementary children aged 10 to 13 (Farenga & Joyce, 1999). In fact, both boys and girls "perceive[ed] science as more appropriate for boys" (p. 69).

In a study involving two waves of interviews of elementary and middle school students, boys were found to have unrealistic plans for future careers (Blackhurst & Auger, 2008). In fact, their results showed "approximately five times as many girls as boys aspiring to careers requiring post-baccalaureate education" (p. 154). One career choice from a previous study demonstrates this lack of reality among boys. Stiles, Gibbons, Sebben, and Wiley (1999) found 11- to 18-year-old boys from multiple countries aspired to be professional athletes. Furthermore, American students who were not athletes at the high school level nevertheless dreamed of being athletes as adults. This indicates a lack of potential career awareness since very few boys actually become professional athletes in the United States (NCAA, 2011).

Evolving Career Aspirations

Ginzberg (1952) assumed we do not determine our careers "at any single moment in time" (p. 492) but over a period of time. Three periods of choices include: *fantasy* (childhood), *tentative* (adolescence), and *realistic* (late adolescence to young adulthood). Children believe and often are encouraged to believe they can be anything. During adolescence such factors as ideals, skills, and activities may play a role in determining career choices. Thus, we do not simply gather career information as we mature from childhood to adolescence to adulthood but we are able to align what we know about ourselves and potential careers (Gottfredson, 1981). Younger children are aware of fewer and less specific occupational titles (Gottfredson, 1981) while increased awareness of occupations and requirements is evident with increasing age (Phipps, 1995) so that by age 10 children have a tendency to be more realistic in their career goals (Seligman, Weinstock, & Heflin, 1991). A later study (Helwig, 1998) noted older children express higher aspirations in addition to awareness of their parents' high expectations for future careers.

STEM and Career Aspirations

Although more students had enrolled in postsecondary education from 1994-95 to 2003-04, the percent of degrees in STEM fields decreased from 32% to 27% (U.S. GAO, 2006). The National Science Foundation National Center for Science and Engineering Statistics (2011, see Table 6 for complete data) also documents a decrease in the percentage of bachelor's degrees awarded in mathematics and computer sciences, physical sciences, and engineering while earth, atmospheric, and ocean sciences remained the same. Biological and agricultural sciences increased in the 42 years between 1966 and 2008. Of additional concern, is the percentage of scientists and engineers (34.1%) between the ages of 50 and 75 in 2006 (see Table 9-36 for

complete data).

In order to lay a foundation for filling STEM employment needs (National Research Council, 2012), Brophy, Klein, Portsmore, and Rogers (2008) advocated "that students need to develop a deep understanding of fundamental science, mathematics and technology principles across P-12 if they want to pursue a wide range of engineering and technical career opportunities" (p. 370). They also noted that the abilities developed in engineering experiences will help students make connections to solving the problems of the world beyond school. Furthermore, students today require skills appropriate for the myriad choices of careers currently available, but they also need an opportunity to develop skills that may be applicable in potential new careers of the future (Lieberman, 2012). Unfortunately, a disconnect exists between the science academic content that students experience in a K-12 classroom and the actual daily practice of STEM professionals since "students have few opportunities to participate in directly or even observe activities of adults in the workplace" (Flick & Lederman, 2004, p. 103).

Preparation for future careers can begin with exposure to STEM experiences in the elementary engineering education programs, Engineering is Elementary and LEGO Engineering. Programs such as these help students develop a greater awareness of what engineers do and elementary students enjoy hands-on experiences as well as using technology (Brophy et al., 2008). Engineering can provide connections to future careers especially when science and mathematics are incorporated (Redmond et al., 2011), thus fostering students' interest (ACT, Inc., 2005; Bybee, 2011a). In fact, the *Next Generation Science Standards* (NGSS Lead States, 2013) incorporates engineering, technology, and applications of science as one of the four disciplinary core ideas.

We need not only to nurture an interest in STEM fields but maintain that interest after the elementary years. Tai, Liu, Maltese, and Fan (2006) determined that "we should not overlook the likelihood that of life experiences before eighth grade and in elementary school may have an important impact on future career plans" (p. 1144). Their study indicated that greater focus on children's science experiences could attract more students to STEM fields. In fact, they found that graduates of 4-year colleges "who expected as eighth graders to have science-related careers at age 30" (p. 1144) were almost twice as likely to hold a degree in life science and over three times as likely to hold a physical science or engineering degree than peers without these expectations.

Influences on Children's Career Aspirations

What influences boys' desire to become professional athletes rather than imagine their futures as scientists and engineers? Blackhurst and Auger (2008) noted the "emphasis on celebrity and wealth may inhibit career development" (p. 150). As lamented by Froschauer (2010), it's not uncommon to hear students aspire to being "lawyers, investment bankers, doctors, singers, actors, athletes, and more recently a few crime scene investigators, but no[t] scientists or engineers" (p. 6). Beyond the media influences of professional athletes, additional influences on children's aspirations include student beliefs and efficacy, parental expectations and occupations, teacher emphasis and encouragement, and school curricula and integration.

Children and adolescents struggle to determine which career choices meet not only their expectations but the expectations of significant others. Gottfredson (1981) and Bandura, Barbaranelli, Caprara, and Pastorelli (2001) proposed that we search for occupations aligned with our self-images. Males desire masculine occupations and members of the middle-class desire middle-class careers such as pharmacists, accountants, and teachers. We experience

difficulty in determining which of these masculine or middle-class occupations best fit us. Furthermore, we determine the appropriateness of an occupation through our image of our future self and the struggles we are willing to undergo to achieve the occupation. Children who believe they can achieve academically will do so while also pursuing their education with "a strong sense of efficacy for scientific, educational, literary, and medical pursuits" (Bandura et al., 2001, p. 198). Students do not consider career options where they perceive incompetence.

Numerous factors including intelligence, gender, and socioeconomic status play a role in the development of self-concept. These factors also play a role in the compromises necessary for career attainment. Accessibility relates to "obstacles or opportunities in the social or economic environment" (Gottfredson, 1981, p. 548) that determine what career we may pursue. This factor can indicate the probability of attaining a particular career while also suggesting the willingness of a student to consider a career. Accessibility might be determined by geographic considerations, inequity perceptions, and training or schooling requirements. Social space is the array of occupations we consider including some alternatives that may be more appropriate than others. Social space consequently suggests who we would desire to be or can be in terms of others or society.

A family's socioeconomic status can impact the opportunities for higher education and professional school, thus impacting which career a student might pursue. Stroeher (1994) noted that children from families with lower socioeconomic status "were more traditional in their *overall* selections" (p. 101). However, in another study "no significant differences were found in how children of differing socioeconomic status selected occupations which were traditionally male or female" (Sellers, et al., 1999, p. 316). Further, Fouad and Byars-Winston (2005) conducted a meta-analysis of articles (1991 to 2004) examining culture and career choice.

Results demonstrated that race or ethnicity do not indicate significant differences in career aspirations. However, "something occurs between the time that those dreams and aspirations emerge and the time that individuals enter an occupation, because racial/ethnic minorities are not proportionately represented across career fields in the labor force" (p. 228).

In addition to a family's economic and cultural dynamics, parental (or other family members') expectations or careers (Bandura et al., 2001; McMahon & Rixon, 2007; Seligman et al., 1991) can also influence children. As children begin to learn about careers, family members are their first teachers. For example, Helwig (1998) asked children to state parental expectations for their future career because "A child's perception of a parent's expectation is more direct and immediate and can be expected to be more influential" (p. 258) than a simple perception of a parent's occupation when a child is choosing a career. Furthermore, in one study (Trice, et al., 1995) 72% of the students interviewed responded that the person they knew in a particular career was a household member instead of an outsider they were exposed to in their day-to-day lives. However, role models beyond the home do influence at least some students as noted by such children's comments as "One of my friend's dad is a nurse and girls are nurses too," "A boy and a girl can be a teacher because my brother's teacher is a boy," and "Our doctor is a girl" (Stroeher, 1994, p. 101).

Although additional influences included teachers and peers (McMahon & Rixon, 2007; Phipps, 1995), elementary students need the chance to experience and explore careers related to their interests while also making more explicit the relationship between school content and the real-world of careers (Schultheiss, Palma, & Manzi, 2005; Seligman et al., 1991). In some cases students recognized minimal connection between the academics of school and careers (Bandura et al., 2001) in spite of a career education program (McMahon, Gillies, & Carroll, 2000). In

some states mandated curriculum includes career preparation in required instruction. For example, in the Kentucky Program Review of career education, proficient schools must meet the criterion, "Information about careers is routinely integrated into the total school curriculum" (Kentucky Department of Education, 2013, p. 9).

Furthermore, many boys' disconnection from school due to less positive experiences may result in the elimination of career choices involving college study (Blackhurst & Auger, 2008). However, children in Phipps' (1995) study appeared to accept the message of adults "that it is important to get an education" (p. 30) although true comprehension of required education and/or training was less apparent. School guidance counselors may conduct a variety of assessments, which can assist children in determining interests and abilities related to careers (Bobo, Hildreth, & Durodoye, 1998; Gottfredson, 1981). Reading books about a variety of careers including nontraditional occupations representing diverse individuals as well as speakers and field trips have been noted as additional influences on children's career choices to develop aspirations beyond stereotypes (Adams & Hicken, 1984; Blackhurst & Auger, 2008; Bobo et al., 1998; Wahl & Blackhurst, 2000). Moreover, "Research should continue to explore the development of career aspirations so that parents and educators can learn the most effective ways to empower and enable preadolescents to weigh their talents and interests over limiting influences like stereotyping with respect to gender and background" (Schuette, Ponton, & Charlton, 2012, p. 45).

Methods

The career and STEM literature supports the idea that exposing students to potential careers (including the necessary educational requirements) could influence students' career choices, particularly students' understanding of and interest in scientific careers. A survey

interview was developed by the author to obtain data on the following four study questions:

1. What are the career aspirations of elementary-level students?

2. How do elementary-level students' career aspirations change over time?

3. Which STEM careers are in elementary-level students' imagined futures?

4. Who/What influences elementary-level students' STEM career aspirations?

The Title I elementary school located within a small town in the southeast included a student population of 43.13% free and reduced lunch in Year 1 that increased to 60.66% in Year 5 (National Center for Education Statistics, 2005-2006/2009-2010). The study involved 10 classrooms of students with all students at the grade level participating from Grades 1 through 5. Table 1 Demographic Student Data includes the number of students completing each of the 10 survey interviews with a total of 298 interviews conducted. Demographic data on each grade level are provided for each year of interviews. Mean ages of students at each grade level are also included in Table 1. A total of 24 different female students and 38 different male students were interviewed during the five-year project. Twelve students consisting of six females and six males completed each of the 10 interviews in Grades 1 through 5. Parent/guardian permission was obtained annually for each student's interviews. Lack of permission was a rare occurrence (only five students in the five years of the study). Students were given a pencil or pen as recognition for their participation in each of the survey interviews.

The six survey interview questions were:

1. What do you imagine you would like to be when you grow up?

2. How do you think you would get ready to do this career?

3. If this was your career, what do you think you would do during a day or night at work?

4. Why do you think you would like to be a _____?

Table 1

Demographic Student Data

Grade (Mean Age) Trait	1 6.44	2 7.43	3 8.41	4 9.37	5 10.56
Total Students Interviewed	31	28	34	33	33
% White	77.42	67.86	73.53	72.73	75.76
% African American	9.68	21.43	14.71	18.18	15.15
% Hispanic	6.45	7.14	8.82	6.06	6.06
% Asian	6.45	3.57	2.94	3.03	3.03

Survey Interview No.	1	2	3	4	5	6	7	8	9	10
Total Interviews	27	30	27	27	28	33	31	29	33	33
Students Retained (From Interview 1)	27	26	19	19	17	17	15	15	12	12

5. How did you learn about this career?

6. Do you know anyone in this career?

The interview questions were determined to be developmentally appropriate by the participating classroom teachers. Grade level and age were also recorded for each student. During the 10 to 15 minute interview, all student responses were recorded by the interviewer on a data sheet listing the six questions. After each question was asked, students were allowed time to think of a response before answering. If students experienced difficulty responding to Question 1, they were asked, "What job do you think you would like to do?" If they struggled with Question 3, they were asked, "What does it mean to be a _____?" A second survey interview was administered approximately eight months later.

In the following four years the same cohort of students was interviewed using the same survey interview instrument both in the fall and spring semesters approximately eight months apart. During this time period the school guidance counselor taught a career exploration unit ranging over four weeks at each grade level in weekly class meetings. The unit included work habits and team skills in addition to how to select a career. Some students transferred out of and into the school resulting in a different group of students being interviewed each year. Table 1 includes data on the number of students originally interviewed in Interview 1 with retained participants documented for Interviews 2 through 10. Student career aspiration responses were input into an Excel spreadsheet to examine career choices by grade level and individual student longitudinal data. Influences on career choice and knowledge of persons in careers of choice were also input into an Excel spreadsheet by grade level. All student responses were examined for commonalities and tallied to determine the categories of responses.

Since the Occupational Information Network (O*NET) "database is the primary source of occupational information in the U.S." (Turner & Ziebell, 2011, p. 10), student career aspiration responses were coded (i.e., AE for Architecture and Engineering) according to O*NET career clusters (U.S. Department of Labor, Employment & Training Administration, National Center for O*NET Development, n.d.). The O*NET database includes career information such as the tasks a person would do, education requirements, and related career paths for hundreds of different occupations. Any responses of occupations that were questionable or unclear were further explored in the O*NET database to determine the appropriate cluster. Three responses (e.g., princess) that were not within one of the O*NET clusters were listed as miscellaneous. Responses related to STEM careers O*NET clusters (Architecture and Engineering; Life, Physical, and Social Science; Healthcare Practitioners and Technical

Occupations; Personal Care and Service) were then more closely examined. Responses were not included as scientific if students described the career as a sport or fun activity. For example, a fisherman was not included as a STEM career since the student described catching fish as a social event with his grandfather—not as an occupation. Architecture was included as a STEM field due to the mathematical skills required and students' descriptions of designing buildings. Student responses were categorized according to grade level and gender. A student assistant checked coding and counts for the data tables to ensure accuracy.

Findings

What are the career aspirations of elementary-level students?

Student responses (organized by gender and grade level) to the first survey question "What do you imagine you would like to be when you grow up?" were tabulated according to the O*NET Occupation Clusters. When all student responses for career aspirations for both survey interviews in a single school year are included, the distribution of different responses results in a widespread range of careers. Student aspirations ranged from architect to singer to athlete to princess. The female students demonstrated more realistic aspirations overall than the male students with girls imagining themselves in high-status and high-paying careers. During the five years of the study no girls' responses were professional athlete while numerous boys' responses (28.16%) were athletes or sports competitors. Further, almost half of the students' aspirations in each grade level (first-grade, 43.86%; second-grade, 53.70%; third-grade, 45.90%; fourth-grade, 48.33%; fifth-grade, 39.39%) required college or professional degrees with additional aspirations requiring technical or other training. Student STEM career responses by gender and grade level are provided in Table 2 STEM Careers Responses in O*NET Clusters. A higher percentage of girls expressed interest in STEM careers at every grade level. Progressing through the

Table 2

*STEM Careers Responses in O*NET Clusters*

	Grade									
	1		2		3		4		5	
STEM Careers	♀	♂	♀	♂	♀	♂	♀	♂	♀	♂
Architecture and Engineering										
Architect	1	2	1		2	3	2	2	1	1
Engineer				3		1				1
Life, Physical, and Social Science										
Astronaut				2						
Ecologist										1
Entomologist								2		1
Geologist							1			
Herpetologist				2		1				
Marine Biologist								1		2
Paleontologist						1		3		2
Scientist				2		2				
Zoologist				1						
Healthcare Practitioners and Technical										
Dentist		2	1	2	1	2				
Doctor	1	2	4		3	1			1	1
Nurse	2		1						3	
Veterinarian	6	1	5	2	6		11	2	8	
Personal Care and Service										
Animal Trainer/Zookeeper	2		2		2				1	
Installation, Maintenance, and Repair										
Electrician						1		2		1
Mechanic				1		2		2		
Total	12	7	14	15	14	14	14	14	14	10

Note. ♀ = female ♂ = male

elementary grades, male students aspired to more varied STEM careers (e.g., astronaut, electrician, engineer, entomologist, herpetologist, and marine biologist) while female students focused more on healthcare occupations (e.g., doctor and veterinarian).

How do elementary-level students' career aspirations change over time?

Some students' aspirations changed from fall to spring while others maintained their career choices from year to year. Career aspirations are documented for the twelve students who

completed each of the ten survey interviews in Table 3 Longitudinal Fall and Spring Careers Responses. In some cases students continued an interest in a particular area but refined their aspirations (e.g., zookeeper to veterinarian or scientist to entomologist). One female student (Female Student 12, personal communication 2005-2010) desired to be an architect in seven of the ten interviews. Another female student (Female Student 6, personal communication 2005-2010) aspired to be a veterinarian in each of the ten interviews. No male students demonstrated this long-term commitment to a single aspiration. No male student who completed the ten interviews maintained aspirations for STEM careers although two male students (Male Students 6 and 10, personal communication, 2005-2010) maintained professional athlete aspirations of basketball and football players. However, one male student did maintain the same STEM career aspiration of dentist in first- through third-grade (Male student 2, personal communication, 2005-2008). Another male student maintained STEM aspirations over eight interviews but changed the occupation of choice from herpetologist to paleontologist to architect (Male student 18, 2006-2010). A third male student changed from engineer (Male Student 20, personal communication, 2007) to an NFL football player (2008), then to vet (2008-2009) and back to engineer (2009) concluding with doctor in his final interview (2010).

Which STEM careers are in elementary-level students' imagined futures?

Beginning in first-grade, children were interested in such STEM occupations as architects, dentists, doctors, nurses, and veterinarians. The career aspirations expressed in 39.93% of the students' responses were STEM careers. The STEM career responses grouped according to O*NET occupation clusters are provided in Table 2 STEM Careers Responses in O*NET Clusters. More girls than boys in each grade level expressed interest in careers in the Healthcare

Table 3

Longitudinal Fall and Spring Careers Responses

	Female #					
Grade	1	2	6	8	11	12
1st	firefighter	zookeeper	vet	nurse	singer	teacher
	fireman/firegirl	zookeeper	veterinarian	nurse	doctor	architect
2nd	cook	zookeeper	veterinarian	nurse	veterinarian	veterinarian
	chef	zookeeper	veterinarian	veterinarian	teacher	architect
3rd	policewoman	zookeeper	veterinarian	vet	artist	architect
	chef	veterinarian	veterinarian	vet	zookeeper	architect
4th	chef	veterinarian	veterinarian	vet	teacher	architect
	cook	vet	vet	vet	veterinarian	architect
5th	reporter	vet	veterinarian	vet	vet	architect
	cook	vet	veterinarian	animal trainer	veterinarian	actress
	Male #					
Grade	1	5	6	10	12	15
1st	monster truck driver	teacher	basketball	football	lawyer	animal rescue
	veterinarian	teacher	football	football	lawyer	spy
2nd	veterinarian	photographer	basketball	football	lawyer	police officer
	movie actor	actor	basketball	football	NFL	veterinarian
3rd	movie actor	actor	basketball	football	lawyer	lifeguard
	baseball	architect	basketball	quarterback	basketball	Army helicopter
4th	race car driver	architect	basketball	football	football	pilot
	pilot	landscape architect	basketball	football	builder	pilot
5th	pilot	lawyer	basketball	football	carpenter	pilot
	pilot	no idea	basketball	football	basketball	pilot

Note. A sport indicates a student desired to be a player in this sport.

Practitioners and Technical Occupations cluster while more boys than girls identified more specific scientists (e.g., astronaut, herpetologist, and paleontologist). Only one girl identified a particular scientist, geologist (Female Student 14, personal communication, 2009).

Who/What influences elementary-level students' STEM career aspirations?

Student STEM careers responses to Question 5 "How did you learn about this career?" and Question 6 "Do you know anyone in this career?" are included in Table 4 Influences on STEM Career Aspirations (N = 140) and Table 5 Knowledge of Persons in STEM Careers (N = 133). Some students provided multiple responses, which were included in the data. The data for all student responses suggest how children might arrive at their career aspirations. Students were influenced by books, career models, family members, friends, media, and school instruction. The most frequent responses of influences for STEM careers were family followed by a career model. Strong influences also included film or television and book or independent learning about a career. Only four of the STEM career influences were school instruction. One first-grade girl stated she wished to be a singer in the first interview and then a doctor in the second interview (Female Student #11, personal communication, August 23, 2005 & April 24, 2006). When asked about influences, she stated one of her mom's friends was a doctor.

When considering what influences which STEM career, family members influenced male students who desired to be doctors, architects, engineers, and a scientist (entomologist). Career models in students' lives influenced male aspirations to become doctors, dentists, veterinarians, architect, and scientists such as a paleontologist, an entomologist, and a marine biologist. Film and television influenced those males who aspired to be a doctor, herpetologist, engineer, veterinarian, marine biologist, paleontologist, and ecologist. Students who learned about a career from book(s) or independently aspired to such varied careers as marine biologist, veterinarian, scientist (including a budding "antiologist" Male Student 16, personal communication, April 2008), paleontologist, engineer, and astronaut. Video games inspired a budding astronaut and

Table 4

Influences on STEM Career Aspirations

	Grade													
	1		2		3		4		5		STEM		Non-STEM	
Responses	♀	♂	♀	♂	♀	♂	♀	♂	♀	♂	Total	% Total	Total	% Total
Book/On Own		1	1	6	2	3	1	5	1	1	21	15.00	9	5.06
Career Model	3	2	5	2	6	3	4		6	1	32	22.86	35	19.66
Family	7	4	7	5	5	5	9	4	5	2	53	37.86	70	39.33
Friend	1		2			2	2		2		9	6.43	13	7.30
Film/Television	2	1		4		2		3	2	5	19	13.57	35	19.66
Videogame				1						1	2	1.43	2	1.12
In School Instruction					1	1		2			4	2.86	6	3.37
Don't Know or Remember; No Answer													8	4.49
Total	13	8	15	18	14	16	16	14	16	10	140		178	

Note. ♀ = female ♂ = male; some students provided multiple responses.

architect. One male student stated he learned about being an architect in school while other responses included enjoyment such as "Because I love dinosaurs" (Male student 18, personal communication, August 18, 2008).

Family members also influenced female students who desired to be a doctor (including pediatrician), architect, nurse, veterinarian (including equine vet), geologist, and animal trainer. Career models in students' lives influenced female aspirations to be a zookeeper, veterinarian, doctor, and nurse. One fourth-grade aspiring veterinarian stated, "I've been learning from

Table 5

Knowledge of Persons in STEM Careers

	Grade													
	1		2		3		4		5		Total	% Total	Non-STEM Total	Non-STEM % Total
Responses	♀	♂	♀	♂	♀	♂	♀	♂	♀	♂				
None	5		4	10	10	3	8	8	4	3	55	41.35	79	45.56
Family	6	3	3	1		5	4	3	6	3	34	25.56	36	20.81
Friend/Friend's Family	2	2	1	1		4		2	3		15	11.28	25	14.45
Career Role Model in Life Experience		2	6	3	4	2	3	1	4	4	29	21.80	31	17.92
No Response													2	1.16
Total	13	7	14	15	14	14	15	14	17	10	133		173	

Note. ♀ = female ♂ = male; some students provided multiple responses.

books" (Female Student 2, personal communication, August 18, 2008) while another was influenced by relatives who practiced as veterinarians (Female Student 6, personal communication, August 18, 2008). She aspired to be a veterinarian during each of her 10 interviews (August 2005-May 2010). Her family's vet was not only a model of this career, he took her with him when he went to farms to care for animals; therefore, he was a mentor as well. Parents also influenced students when they noted abilities such as skills working with "linking (Lincoln®) logs" (an aspiring, architect, Female Student 12, personal communication, August 18, 2008). Film and television influenced those females who aspired to be a zookeeper, a veterinarian, and a doctor. Students who learned about a career from book(s) or independently aspired to such varied careers as doctor, veterinarian, and zookeeper. Videogames inspired no

female students while only one female student stated she learned about being a veterinarian in school.

Discussion

Limitations of the study include a single school in a small town. Urban, suburban, and rural school settings may result in different survey interview outcomes.

This study demonstrated elementary students do have an interest in STEM careers. Children in this study expressed an interest in a wide variety of STEM-related careers such as architecture, health professions, and engineering, as well as such scientific endeavors as ecologist, geologist, herpetologist, and marine biologist. In fact, over half (54.84%) of the 124 female students' career aspirations responses were STEM careers. Further, over one-third (34.88%) of the 172 male students' responses were also STEM careers.

The question becomes, how can we sustain and further develop this interest in a STEM career? Experiencing science at a young age can motivate further engagement in science experiences. "Learning science depends not only on the accumulation of facts and concepts but also on the development of an identity as a competent learner of science with motivation and interest to learn more" (NRC, 2012, pp. 286-7). In order for students to pursue STEM careers, they need to be able to see themselves as scientists and engineers. Current series such as the *Scientists in the Field* books (e.g., *Kakapo Rescue: Saving the World's Strangest Parrot* and *The Frog Scientist*) permit students the opportunity to examine a scientist's life and research. However, engaging and quality resources to teach children about various careers are scarce, particularly for the early primary grades. Media images also often lack reality. Numerous children in this study cited television programs such as *Law and Order* and *Cops* as influences on their career choices. However, present-day cable television programs do provide an even

greater variety of views of the work world from *Ice Road Truckers* to *Dirty Jobs.* The iGeneration or Generation Z (born in 1994 or after who do not know a world without smartphones, Schneider, 2015) will require more than reading a book, hearing a teacher talk, or viewing a television program about a particular career.

Although teachers have been suggested as key players in the development of children's scientific career aspirations (Tiala & Harris, 2011), the study data suggest that school has little impact on student career choices. Only 2.86% of total STEM influences responses indicated school as an influence. What influences a student to not only aspire to but actually pursue a STEM field career? Career models (e.g., pediatrician) in students' lives and family members influenced 60.72% of the students' STEM careers responses while 46.78% of students selecting a STEM career aspiration had knowledge of a career model or family member in a STEM career. Expansion of the student view of scientists and their work will require greater exposure to significant role models.

In addition, students might research potential careers, and interview panels of role models in varied careers in addition to mentoring or job shadowing. A longitudinal study following students through the years beyond elementary school would also provide information about how children's career aspirations evolve as they advance to middle and high school and beyond the K-12 school setting. Furthermore, the move from the *National Science Education Standards* to the *Next Generation Science Standards* includes emphasis on scientific practices as well as incorporation of engineering problems, which may result in future students' greater interest in STEM fields (Bybee, 2011b). Why should STEM professionals care about children's aspirations? Science and engineering play a critical role in the future of our nation. Unfortunately, "The percentage of students who are motivated by their school and out-of-school

experiences to pursue careers in these fields is currently too low for the nation's needs" (NRC, 2012, p. x).

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Substitute Teaching: The Unspoken Narrative

Anni Reinking

Southern Illinois University-Edwardsville

1131 Founders Hall

Edwardsville, IL 62026

309-868-0768 (cell)

anreink@siue.edu

Abstract

A survey sent out by the Regional Superintendents of Schools in Illinois (IARSS) found that in the 2016-2017 school year, at the halfway point, schools could not find substitutes for about six hundred classrooms per day (2017). Substitute teachers play a major role in the functioning of schools on a daily basis. In this autoethnography two themes emerged, isolation and expectations. Additionally, the researcher discusses policy and procedural solutions to the substitute teacher shortage.

Keywords: Substitute Teacher, School District, Teachers, Administrators

Eastern Education Journal Vol 46(1) Spring 2018
pp 29 - 50

Substitute Teaching: The Unspoken Narrative

Substitute teachers are a valuable part of running a school; however, they often are coverlooked when discussing school culture (Gershenson, 2012). In a recent news article it was stated that in Illinois "more than 3,000 teacher absences can't be filled every school week due to a lack of substitutes in Illinois" (Shelley, 2017, para 1). This information was summarized from a press release by the Regional Superintendents of Schools, which stated that schools have to cover more than 16,500 teacher absences per week, but cannot find substitutes for 18 percent of those, which is about 600 classrooms per day (IARSS, 2017).

While these numbers may seem extreme, this shortage of substitutes is not unique to Illinois. Michigan is experiencing the same hardships attached to the substitute teacher shortage. They have even taken measures to post "help wanted" advertisements on billboards around the state. In response to this "the president of EDUStaff, which provides staffing, including substitute teachers, to more than 300 school districts," Clark Galloway (Higgins, 2016, para 3) reported that throughout Michigan, the fill rate, which is the percentage of open positions, has actually declined about 10% from 2012 to 2016. Teachers and administrators argue, however, that there is still a need for substitute teachers and that school buildings are suffering. When substitute teachers are not found, students are placed in other classrooms creating classrooms with over thirty students; in some cases teachers who have other duties around the building (interventionists) are pulled from their job in order to cover a classroom without a teacher.

Illinois and Michigan feel the hardships of substitute teacher shortages, as well as many other states around the nation. When discussing substitute teachers, however, it is important to discuss the substitute teacher requirements in states around the nation. Each state has their own requirements, tests, recruitment and retention processes, as well as interview processes. For

example, in Alabama, a substitute teacher, at any grade level only needs a high school diploma and a negative tuberculosis (TB) test. The state of Arkansas does not have any state policy on requirements for substitute teachers, but some school districts have designed their own. In larger states, such as California, there are stricter licensing requirements for substitute teachers. Furthermore, on the NEA website (National Education Association), it notes that some states, such as Ohio, have illegal substitute teacher practices, which includes using an instructional aide as a substitute teacher (NEA, 2015).

Although news stations, newspapers, and education-based organizations are producing research and statistics in the 21st century that demonstrate the lack of substitute teachers, there is little research published on the skills, needs, and overall experience of substitute teachers nationwide. Most of the scholarship from the United States is from the 1990s and earlier. There are pieces of research from other countries; however, due to the vast differences in the education systems, the research is not applicable to the experiences in the United States.

While there are minimal research articles from the United States post-1990, there are two studies worth citing when discussing substitute teaching. In one study, Gershenson (2012), studied why substitute teachers may or may not accept a substitute-teaching job. He found that substitute teachers accepted jobs based on "arrival time, commute time, day of (the) week, classroom type, school type, and school quality" (p. 410). He also found that higher pay and long term subbing opportunities had a higher acceptance rate with most of the research participants.

Another researcher, Weems (2003), explored substitute teachers as professionals. Through her research, she studied substitute teacher characteristics, and developed a type of theoretical framework to use when researching the substitute teacher professional. In the article, the author describes three types of substitute teachers—"incompetent and unqualified, deviant

outsider, and guerilla superhero" (p. 254). The incompetent, unqualified substitute teacher is viewed as a babysitter while the teacher is absent. This type of substitute teacher has little, if any, training, certification, or experience. The deviant outsider substitute teacher is viewed as an outsider; some may even go so far as to characterize this substitute teacher as a second-class citizen. The final type of substitute teacher is the guerilla educator, as deemed by Weems (2003). This type of a substitute teacher stems from the portrayal of the hero, rescuer, and protector teacher often cast in movies. Substitute teachers who are viewed as the guerrilla educator "break away from traditional conventions of teaching to connect with and inspire students to reach their full potential" (p. 262). Overall, through her research, Weems (2003) developed a solid framework for how substitute teachers are perceived in school buildings.

Purpose

The scholarship focused on substitute teachers is stark and, in many instances, non-existence. Twenty or thirty years ago researchers stated in practitioner literature that substitute teachers were part of the problem, citing the lack of training, experience, and competence in the field (Booth, 1981; Deutchman, 1983; Shreeve, Nicely-Leach, Rogie Radebaugh, Morrill, & Slatton, 1983). Arguably, substitute teacher training and experience are still part of the issue in the field of education. However, recent rhetoric has focused on classroom teachers and somewhat ignored substitute teachers. Policies today are designed to demand quality education and professional development for teachers who are increasingly held accountable for student test scores. However, the qualifications for substitute teachers is still ignored. Substitute teachers around the country are often forgotten until the stark numbers of 600 empty classrooms in a given week is stated in the news.

Therefore, the researcher of this study designed a research project with the goal of understanding the substitute teacher shortage from the point of view of the substitute teacher. Additionally, the researcher aimed to address wider issues focused on education and substitute teachers, including state policies, federal policies, and school board mandates demanding teacher accountability, while forgetting about the substitute teacher workforce (Rutledge, Harris, & Ingle, 2010). The substitute teacher workforce that arguably ensures schools run on a day-to-day basis when teachers are absent for various reasons. However, research shows substitute teachers are lacking not only in number, but also in qualifications and preparedness. This is a needed area of research to make sure young students are receiving quality experiences and that substitute teachers are prepared for the struggles and joys of teaching students pre-kindergarten through twelfth grade.

The purpose of this study was to provide first hand reflections of the substitute teacher experience. The methods, findings, and implications for this study will be discussed. Additionally the researcher advocates the need for policymakers, school board members, administrators, parents, and community members to show support for and pay attention to the substitute teacher workforce entering school buildings around the country.

Methods

This qualitative study was based on the researcher's first-hand experience as a substitute teacher. The researcher reflected on her personal experiences and questions while she was employed as a substitute teacher in one large school district in the Midwest. Since the researcher was conducting research on her own reflections and experiences, the specific type of qualitative research used was autoethnography. "Autoethnography is an approach to research and writing that seeks to describe and systematically analyze personal experience(s)" (Ellis, Adams, &

Bochner, 2011, para 1) in order to understand experiences. It is a combination of an autobiography and ethnography (Ellis, Adams, & Bochner, 2011). The reflections and connections will be presented in the findings.

As a reminder, the purpose of the research study was to provide first hand reflections of the substitute teacher experience. The guiding research questions posed at the beginning of the study included three main overarching ideas.

1. What is the substitute teaching hiring process? How does this process influence the application and hiring process of quality individuals entering classrooms as substitute teachers?
2. How does the environment of the school influence the substitute teacher experience?
3. What implications can be made from the first-hand experience of applying for, being hired, and working as a substitute teacher?

It needs to be noted that throughout the methods, findings, discussion, and implications sections, the terms researcher and substitute teacher, in reference to the participant, will be used interchangeably.

The study took place in the state of Illinois. Therefore, before describing the methodology, the qualifications for substitute teaching in the state of Illinois need to be described. Generally, if an individual holds a bachelor's degree in any subject area from an accredited university, which is verified by submitting a transcript, a person is eligible to apply for student teaching in the state of Illinois. There are no experience or criminal background checks required by the state. However, individual districts have the choice to add more stringent requirements, if they deem it necessary.

In December of 2015, the researcher decided to become a substitute teacher in a large district in the state of Illinois. The total number of schools, including elementary, middle, and high schools, in the district totaled twenty-four. The demographics of the district, according to their annual report card, include 22.6% White students, 57.3% Black students, 9.7% Hispanic students, 8.1% of students indicated two or more races, and fractions of percentages represented Asian, American Indian, and Pacific Islander populations. Sixty-eight percent of the entire district was low income and 3% were homeless. The demographics of the teachers in the district included 88.2% White and 6.6% Black (www.illinoisreportcard.com).

The researcher applied through the online application process required by the district. The human resource individual responsible for hiring substitute teachers, along with other responsibilities, contacted the researcher through an email indicating the next steps in the substitute teacher hiring process. The next steps required by this district included a long list of requirements. Since the researcher was a licensed teacher in the state of Illinois, she needed to provide her license number. Additionally, she needed to be fingerprinted, agree to a background check, provide letters of recommendation, and travel to a facility for a drug test and TB test, which were paid by the district. Once these steps were completed, the researcher arranged a time to meet the human resource individual to finish the process at the district office.

When the researcher arrived at the district office at the agreed upon time, the human resource individual was in a meeting. The researcher waited approximately thirty to forty minutes and was finally greeted by the human resource individual. During the meeting the human resource individual opened up the file she had been keeping, which included all of the needed paperwork submitted by the researcher. The human resource individual made sure everything was in and took her picture for the district name badge. Once the picture was taken,

printed, and put in a lanyard, the human resource individual assigned the researcher a code for an online attendance system. The online system was the method the school district used for teachers to request a substitute teacher and for a substitute teacher to claim a job. The human resource individual instructed the researcher on how to use the system, asked if there were any questions, gave her the badge with her picture, and sent her on her way. Interestingly, there was never an official interview to ensure the researcher was of sound mind and understood the intricacies of leading a classroom. Nor were the individuals who wrote recommendation letters ever called to verify that the researcher was an ethical and trustworthy person.

Once the researcher left the district's main office, she was in the system to start substitute teaching. Over the course of one semester (approximately eighty-seven days), the researcher substitute taught twenty times in two different schools. The researcher chose to only substitute in prekindergarten through first grade classrooms. As a trained and experienced early childhood teacher, the researcher felt that entering a place of comfort (grades she had taught) would allow her to fully understand the outside factors of substitute teaching, rather than trying to understand a new grade level. Furthermore, when experiences arose that the researcher questioned, she would reach out to her own professional learning community to see if the experiences she had were normal. There were constraints on the researcher, who was also working fulltime as a professor. However, having the experience in various classrooms and school buildings provided a lens for the researcher to use when reflecting on the substitute teacher experience. The experiences and reflections of the researcher's time as a substitute teacher will be discussed in the findings.

Findings

The data of the researcher's experiences and reflections, in the form of writing, were analyzed using open coding. There were themes that emerged through this process. The researcher recognized, however, that experiences, thoughts, and perceptions are not generalizable, but purely based on personalities and past experiences. However, describing the overall themes of isolation and expectations add to the past scholarship and future needed scholarship on the topic of substitute teachers. The findings will be described in two intertwining ways. First, the findings will be discussed in relation to the two themes. Second, they will be discussed in relation to Weems (2003) three characterizations of substitute teachers. The three guiding researcher questions will also be addressed in the discussion and implications sections.

Isolation

The first theme that became apparent through the process of reflection and open coding was the fact that substitute teaching is very isolating. In both schools, the researcher checked in at the front office, signed in, went to her room, and read the substitute teacher plans left by the teacher. Occasionally another teacher would come by to see if the researcher needed anything at the beginning of the day and throughout the day. However, more often than not, no one came to make sure the researcher and the students were okay.

On her first day of substitute teaching, the researcher checked in and went to the kindergarten classroom where she would be subbing for the day. The students began entering and one teacher stopped by to see who was in the room for the day. The other teacher smiled and said, "Well, if you have any trouble with *student name* you just let me know and I will get him out as soon as possible." The researcher reflected, "What an ominous first thing to say to a substitute teacher."

The researcher patiently waited for the student the other teacher had warned her about at the beginning of the day. As soon as the student walked in the researcher understood why. The researcher, being a special education teacher for several years, knew immediately that he had to have an Individual Education Plan. The researcher later found out that he did not, but the process for the plan had been started. The student was essentially non-verbal and had a very difficult time with impulse control. Although the researcher understood how to approach and manage this student throughout the day, she also tried to put herself in the shoes of someone without an education background, without special education background, and without knowledge of what to do in a kindergarten classroom in general. What an overwhelming experience that would have to be. Interestingly, after the first visit from a teacher down the hall to warn the researcher about this student, no one else checked in on the student or the substitute teacher the rest of the day. In the teacher's lounge at lunchtime some of the other teachers said, "Oh, wow. How is *student name* today?" That however was the extent. It was an isolating feeling, especially since the student did not know the researcher when he walked into the classroom first thing in the morning.

Furthermore, the idea of isolation became apparent as the researcher continued to substitute teach throughout the semester. She realized that the principal of either school never came to check in on her, introduce themselves to her, or made sure the children were safe in the classroom. In all twenty times the researcher substitute taught, neither principal said anything to her, which created not only a feeling of isolation, but also one of being unwelcomed or unappreciated.

The researcher found this interesting, so she began to ask elementary school principals she knew through her professional learning community if they often introduce themselves to

substitute teachers. The overwhelming answer was no. However, one response stuck out. This principal said, "We have so many substitute teachers in and out through the year I would not remember if I had met them before or not. They are somewhat disposal because some can last and some can't."

Finally, a very clear moment of isolation occurred when the researcher substitute taught in a prekindergarten classroom for the lead teacher. The classroom had an aide, who created a very unwelcoming and isolating environment. The aide arrived late, after the students had already entered the room. This was problematic because the lead teacher did not leave any lesson plans. Throughout the day the aide did not give any instructions to the researcher as far as what was coming up next or what the researcher should be doing. In general, the aide spoke two sentences to the researcher over the course of the entire school day. At the end of the day, the aide told the researcher to take the students out to the bus, and the aide left. The researcher, not knowing the procedure of the buses, almost caused a handful of students to miss their bus due to the lack of communication. Overall, that experience was hard, demeaning, and displayed to the researcher how some people treat substitutes as babysitters who are underqualified and uneducated. What was more disturbing was that the aide never tried to get to know the researcher in the seven hours they spent together in a classroom with children.

The feeling of isolation, on the part of the researcher, supports the theoretical framework of Weems (2003) classifications of substitute teachers. During portions of the experience, the researcher felt like the incompetent and unqualified babysitter and at other portions throughout the experience, she felt like the deviant outsider or third class citizen. This was felt when the principal and/or other teachers in the building ignored the researcher by not checking in or welcoming the researcher. This unwillingness to welcome someone into your environment gave

off the impression of "you are only a warm body" in this classroom. The second-class citizen idea become obviously clear in the situation with the aide who did not communicate with the substitute teacher.

Expectations

The theme of expectations was discovered in two portions of the data. First, the researcher's expectations of the hiring process and second the expectations placed on the substitute teacher throughout the teaching experience. The researcher described her shock and disbelief at how the hiring process went overall. There was never a legitimate interview or checking of references, other than the submitted letters. While the researcher did reflect that the experience might have been different if she was not already a licensed teacher, she later found out from other substitute teachers that her experience was normal.

Through this experience, as an educator and parent, the expectations and trust the researcher placed on the district to make sure the adults entering the classroom of young and old students was shattered. The researcher had held expectations of the hiring process and, other than the drug testing and criminal background checks, none of them were followed. There was never an interview. However, at any time if a school did not like the substitute teacher, after a day of teaching, they could retrospectively ban the substitute teacher from the building. Therefore, the district was reactive rather than proactive in the hiring and firing of substitute teachers.

Along with the expectations of the overall process, the researcher noted that the expectations of the substitute teaching experience were dependent on her past experience as an educator. When the researcher was a classroom teacher, she would go out of her way to make sure substitute teachers close to her classroom felt welcomed and knew how the day would go. When in the classroom as a full-time teacher, the researcher would introduce herself, answer any

questions, check-in, and be available for the substitute teacher. This was overwhelmingly lost in the experience the researcher had as a substitute teacher. The absence of planning, the unwelcoming school environment, and the lack of assistance was very apparent throughout the entire experience.

Second, the expectations and/or responsibilities placed on the researcher in the role of substitute teacher changed over the course of the semester. After building teachers realized the researcher was not another person in a babysitter role, but that the researcher was knowledgeable and trained in education, they began to treat her differently. At this point in the experience, the view of the researcher turned from one of deviant outsider to guerilla superhero. The teachers noticed that she was able to handle the "warned about" student, was able to hold a class together without yelling, and that students genuinely learned and liked her when she substitute taught.

One day, in a kindergarten classroom, there was a little boy who cried for the first hour or so of the day. The teachers came in one by one throughout the morning (never the principal) to say, "Oh yeah, he does this every time a substitute teacher comes." They offered to take him out, but the researcher said, "No, it's okay. I can handle it." After hearing this somewhat empathetic response to the crying student several times, the researcher asked the other students in the classroom what usually happened when he cried with other substitutes. The students told her that he would get to go out and spend time with the gym teacher. That is exactly what the researcher suspected; he was sent to go have fun in the gym because he cried so much the substitute teacher could not take the noise or distraction. Therefore, the researcher walked over to the little boy and said,

> *I understand every time you have a substitute teacher you cry. Sometimes it can be very hard to have a new person in the classroom, I understand. However, I also understand*

> *you usually get to go hang out in the gym. That is not going to happen today. You can cry if you are sad, that is okay, but as a student and friend in my classroom, you are going to stay. You can join all your friends having fun on the carpet when you are done crying. It is your choice.*

Within five minutes of that conversation the crying ceased, the little boy joined the other students on the rug, and the day went on. When teachers continued to come in throughout the morning, they were shocked that he was in the classroom, calm, and participating with a substitute teacher. That is when the guerilla superhero characteristic came to fruition. After that day, the researcher had teachers at the school emailing her or catching her in the hall to ask if she could substitute for their class the next week or the next month.

This experience puzzled the researcher. However, upon further reflection she came to understand it from the perspective of the principal who stated that substitute teachers were a revolving door. Substitute teachers come through the school all the time, and most of the time the teachers witness substitute teachers who are not good with students, are underqualified, or are just a warm body. One teacher even said to the researcher, "Most of the subs I get do not even know how to turn on the CD player. I need you to come and sub when I am gone next week so I don't have to come back to a bad note." They had found a substitute teacher they could trust.

Overall, the two themes of isolation and expectations were apparent during the data analysis process. The researcher took her time to engage in the experience, reflect from different perspectives, and attempted to provide a full picture of her experience as a substitute teacher. While the researcher enjoyed her time in the classroom with students, there were definitely blatant negatives and areas of growth that were learned from the experience.

Discussion

As a former classroom teacher, the researcher had a unique and interesting perspective throughout the entire process. The first guiding research question focused on the hiring process of substitute teachers. It also asked how the hiring process might influence the application and hiring of quality substitute teachers. From the perspective of the researcher, the process in this district would only create a substitute teacher pool of individuals who were college educated without a drug or criminal background. The conversations and reactions to the researcher as a substitute teacher support this idea. Some of the teachers in the buildings, where the researcher subbed, along with the principal interviewed, view the substitute teacher workforce as a revolving door. Substitute teachers are not given support or confidence to succeed in a classroom, especially if they are not trained in education. Furthermore, the Illinois qualifications for a substitute teacher do not require criminal background checks. That portion of the process was deemed necessary by the district. The overall process, from the perspective of the researcher, would generally not supply quality substitute teachers to district schools.

The second research question addressed the school environment. As indicated in the findings, initially the researcher felt unwelcomed. However, once the teachers realized the guerilla superhero qualities of the researcher, they sought her out for substitute teaching opportunities. However, the principals at the schools never acknowledged or welcomed the researcher as a substitute teacher, which still created somewhat of an unwelcoming environment.

The third and final research question focused on overarching ideas of policies and procedures for substitute teacher qualifications and experiences. The findings related to this guiding research question apply more to the implications section.

Implications

While this research and other research findings focus on the downfalls of substitute teacher training, qualifications, and hiring processes, there are steps that policymakers, school administrators, parents, school boards, and teachers can advocate for in order to provide classrooms with high quality substitute teachers, especially when there is a push for high quality full-time teachers.

However, before those advocacy steps are discussed, the problems need to be summarized. First, when teachers are absent many school districts do not have substitute teachers, therefore other teachers or classrooms take in extra students in order to keep the school day running. Second, substitute teachers are not paid well. For example, in the district the researcher substitute taught in, she was paid $10/hour before taxes. On average, a day of substitute teaching usually equated to less than $60. Therefore, an increase in substitute teacher pay is the second advocacy step. The third focuses on the perceptions of substitute teachers. While the perceptions of substitute teachers often vary, it is often negative (Weems, 2003). Fourth, the school environment is often unwelcoming to substitute teachers for a variety of reasons, one being the view that that the substitute is a babysitter for the school day. Finally, substitute teachers are not vetted in a manner that generally produces individuals who understand education, know about students, or have been cleared of criminal backgrounds.

The five issues above were described in ascending order if imagining the issues in a triangle. The fifth issue is the foundation of the problem, which needs to be addressed in order to influence the fourth, which will influence the third, and so forth. Education policymakers, school boards, and parents need to demand that states have stricter laws on substitute teacher qualifications. In this study, the only reason the researcher was asked to participate in a criminal

background check and drug test was because the district deemed that necessary. The state of Illinois, along with many other states, have the view that if someone has a bachelor's degree, or in other states only a high school diploma, that person is qualified to be in a classroom with students of all ages. States need to have policies in place that require all teachers to have some education course background on their transcripts, a criminal background check, a drug test, and have a legitimate interview to ensure the substitute teacher understand aspects of teaching. For example, they can vocalize that corporal punishment is not currently practiced, that classroom management is important, and that support is in the building if needed. Informing substitute teachers, through this process, of the procedures to address misbehavior would benefit not only the substitute teacher, but also the students and school environment.

Once substitute teachers are required to go through a focused vetting process, the second and third concern could be addressed. When substitute teachers are held to a higher standards, school personnel will begin to transform their thinking about the individuals. They will begin to get out of the babysitter mentality and move into a fellow educator mentality. This will create an environment where there is not a rotating door, but a door that is welcoming, helpful, and dedicated to the substitute teacher pool and the individual professional growth of substitute teachers as members of the school and district community. When substitute teachers feel welcomed, they are more likely to come back to the school to substitute teach and students will not be left without a teacher. This was also observed in Gershenson's (2012), study. He found that substitute teachers accept jobs on several characteristics, one of them being school quality and type. While that terminology can have many meanings, the quality and type of a school is often related to the support systems in place for educators, which creates a sense of belonging and community.

When schools are unwelcoming, substitute teachers do not feel a connection or desire to be part of that environment. This was evident in this research study. The researcher reflected that after the aide was rude and non-communicative throughout the entire school day she had no desire to go back and "be treated like dirt or a second-class citizen." Teacher and administrator preparation programs can also play a role in creating a welcoming district and school environment by providing information about interacting with substitute teachers in a positive and welcoming manner that builds an overall positive school environment.

Additionally, increasing substitute teacher pay, even with tight budgets, will create an environment where substitute teachers feel valued for the work they are doing. As any educator can report, teaching is a hard profession that takes patience and dedication. When substitute teachers are minimally paid, the desire to find another job becomes a priority. This was not apparent in this specific research study, because the researcher had another job. However, reports from substitute teachers and districts needing substitute teachers testify that the lack of pay decreases the availability of individuals to substitute teach (Gershenson, 2012).

Finally, if the policies are put in place to increase substitute teacher qualifications, substitute pay is increased, and the school environments become more welcoming the substitute teacher pool and desire to be in classrooms will rise. Teachers and administrators need to respect substitute teachers, substitute teachers need to feel respected, welcomed, and compensated, and policies need to be put in place to create an environment where substitute teaching is not something anyone can do. The teaching profession, including substitute teaching needs to be something that is valued and respected.

Additionally, accountability measures need to be in place for substitute teachers. On the days when teachers are absent the accountability measures and high expectations of classroom,

performance plummets due to the requirements and vetting process of substitute teachers. While there are fantastic substitute teachers out in the field, many have similar experiences described in this research study. Increasing substitute teacher accountability will create academically rich environments.

While the problems of the substitute teaching process and workforce are recognized, there are some people in the field of education tackling the problem head on. One veteran educator, Cherry Rice, began a startup called "Parachute Teachers." The idea behind this program is "to support high-quality substitutes to do more than pass out worksheets and struggle to implement a hastily prepared lesson plan" (Will, 2017, para. 2). This grassroots solution was referred to as the "Uber for substitute teachers" in Harvard Ed. Magazine. The basic concept behind the Parachute Teachers project is to "have professionals in the community…'parachute' into the classroom and teach something they're passionate about…. The idea is to promote authentic learning in classrooms, even when the teacher is away" (Will, 2017, para 3). This idea addressing many of the concerns around the substitute teacher phenomenon. However, this concept is still in infancy.

Overall, substitute teachers are in demand around the country. There is minimal research on the profession of substitute teaching, including the demand for substitute teachers, the downfalls of substitute teaching, and the solutions to increase the substitute teacher pool. This research, while only a snapshot of one experience, supports the evidence that substitute teachers need to feel welcomed and appreciated in order to provide quality experiences for students. Additionally, creating stricter qualifications for substitute teachers could decrease the negative perception of substitute teachers nationwide. As a country, we continually increase the measures teachers need to reach in order to become more effective in the classroom. However, a large

portion of the education workforce is forgotten – substitute teachers. We also need to concentrate on the individuals entering and leading classrooms when teachers are absent. Schools cannot run without substitute teachers. However, substitute teachers are an ignored, silent, and marginalized group of educators.

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The Community College Baccalaureate

Mary L. Smith, MSEd

Southern Illinois University Edwardsville

SIUE Regional Nursing Program

600 Agriculture Drive – MC 6528

Carbondale, IL 62901

(618) 453-4349

marysmith@siu.edu

Abstract

Granting community colleges the authority to offer and confer baccalaureate degrees is a continually recurring theme in higher education. Most recently, Illinois community colleges have again requested this permission. This article provides some background information on community colleges and presents the arguments in favor of and against the Community College Baccalaureate (CCB). Viable alternatives to offering a CCB are also discussed.

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The Community College Baccalaureate

In light of the ongoing budget standstill in Illinois, proposed cuts in funding for higher education, and the subsequent financial crisis at several higher education institutions, Illinois has again considered allowing community college to award baccalaureate degrees. Illinois community colleges and the Illinois Community College Board have twice previously asked for, and been denied, the authority from the Illinois Board of Higher Education and the Illinois General Assembly to offer bachelor's degree programs (Weber, 2015). Although this authority has not yet been granted in Illinois, the community college baccalaureate (CCB) has been established in several states for more than a decade (Russell, 2010). As early as 1998, Westark Community College in Arkansas was offering their own bachelor's degree program. Florida, currently one of the largest supporters of the community college baccalaureate, soon followed with their own bachelor's degree program at St. Petersburg College in 2002 (Mills, 2003). Now, community colleges in at least 16 states are conferring their own baccalaureate degrees, a degree previously reserved for four-year universities (Community College Baccalaureate Association, 2014; DiSalvio, 2015).

Critics of the CCB claim that mission creep, insufficient finances, duplication of degrees, lower quality degrees, and unqualified faculty will be the result (Mills, 2003; Wattenbarger, 2000). Proponents assert that the CCB would provide economical and accessible education for a large segment of the population (Dowd, 2003; Eaton, 2005; Floyd & Walker, 2009; Walker, 2001; Windham et al., 2001). These same supporters allege that without the CCB, the U.S. will not have a large enough educated workforce to compete globally (Bragg, Townsend, & Ruud, 2009; Floyd & Walker, 2009; Humphreys, 2012; Levin, n.d.; Pusser et al., 2007; Walker, n.d.d.).

History and Mission of the Community College

Community colleges for the past few decades have customarily been open access, meaning anyone can enroll in a variety of classes. The community college is open to all academic levels, ages, and ethnicities thereby allowing access to higher education to all (Floyd & Walker, 2009; Mills, 2003). The comprehensive community colleges of today, who educate 45% of all undergraduate students, have come to offer not only the associate degree in preparation for transfer to a university, but also workforce training, academic development, community education, and adult education (Dowd, 2003). Students who have poor academics or language difficulties have typically been attracted to community colleges to further their education (Cohen, Brawer, & Kisker, 2014; DiSalvio, 2015; Floyd & Walker, 2009; Mills, 2003; Walker, 2001). Community colleges were "designed to serve students who were not readily admissible to the university, students with limited financial means, poor academic records, language difficulties, and family concerns that made it hard for them to attend four-year institutions" (Walker, 2001, p. 19). Attendance at a community college also gives students with academic deficits an opportunity to enroll in academic development courses or to simply improve their GPA before attempting university admission.

Students choose to attend a community college rather than a university for many reasons. For some students one of those reasons is the smaller class sizes at community colleges. These students are often intimidated by the thought of a university course with 100 plus students (Goncalves & Trunk, 2014; Long & Kurlaender, 2009; Marcus, 2014). Another reason is the need or desire to stay close to home (Walker, 2001). Older students who may have jobs or family obligations often find it difficult or impossible to attend a university that may be far away (Fanelli, 2007; Floyd & Walker, 2009; Hulbert, 2014).

Community colleges are usually located to be geographically convenient for most students in their district (Adams, 2011; Bivens et al., 2014; Eaton, 2005; Long & Kurlaender, 2009). According to the American Association of Community Colleges (AACC) (2010), 90% of people in the US live within 25 miles of a community college, making it easier to commute. The lack of available courses, scheduling difficulties, parking issues, and the fear of not fitting in at the university are also reasons that students often choose community colleges (Floyd & Walker, 2009; Goncalves & Trunk, 2014). In addition, the tuition and fees at community colleges are typically much lower than at universities which has allowed access to higher education for women, minorities, lower-income students, and those who work full-time (Adams, 2011; Bivens et al., 2014; Eaton, 2005; Long & Kurlaender, 2009).

The CCB

The CCB is a stand-alone baccalaureate degree in which the coursework is taught and the degree conferred by a two-year community college (Floyd & St. Arnauld, 2007; Lane, 2003). Martin and Samels proffered that it represents "something far more significant than a simple, efficient step toward bachelor's degrees" (2001, p. 4). Instead it is "a new way to think about – and facilitate – the educational pathways to sustainable employability and professional advancement in the new globally competitive, technology-driven economy" (Martin & Samels, 2001, p. 4).

The first documented occurrence of what has evolved to become the community college baccalaureate was in 1989 in West Virginia. In order to offer baccalaureate degrees, Parkersburg Community College became West Virginia University at Parkersburg, a four-year institution. In 1992, Utah Valley Community College was approved to offer baccalaureate degrees. That community college subsequently became Utah Valley University. Westark Community College

became University of Arkansas-Fort Smith and Northern New Mexico Community College became Northern New Mexico College on its way to becoming a four-year institution (Russell, 2010). As these examples suggest, many of the first community colleges to offer bachelor's degrees subsequently became four-year institutions (Wattenbarger, 2000). However, some states such as Georgia and Florida have stipulated that the community colleges retain their community college functions in addition to offering the bachelor's degrees (Russell, 2010).

So far, the majority of CCB degrees offered are occupational or career in nature such as nursing, teacher, education, engineering technology, and applied or technical degrees (Bilsky et al., 2012; DiSalvio, 2015; Fanelli, 2007). Many states have a shortage of nurses (especially baccalaureate-prepared nurses) and teachers. The bachelor applied or technical degrees give graduates with Associate in Applied Science (A.A.S.) degrees an opportunity to further their education (Fanelli, 2007: Floyd & Walker, 2009; McKinney et al., 2013; Russell, 2010).

There are some important arguments in favor of the CCB, even though there seem to be more arguments against, although that may possibly be because those voicing opinions against have been more vocal in their arguments.

Pros of CCB Degrees

Affordable and convenient higher education. "Everyone has a right to a university degree, even if it's in Hamburger Technology" (Clive James as cited in Gabbard & Mupinga, 2013, p. 374). Because community colleges offer equal and open access (Dowd, 2003), they are often referred to as "democracy's colleges" (Eaton, 2005, p. B25). The original intention of postsecondary education was that it be accessible to all who could benefit from it (Windham et al., 2001). One of the arguments for the CCB is that it is furthering this democratization by offering open access to higher education rather than limited access through transfer to

universities (Fanelli, 2007; McKinney et al., 2013; Wagoner & Ayon, 2012). Community colleges can offer the baccalaureate degree to "more learners, at convenient locations, in a more learner-centered environment, and at a greatly reduced cost to the learner and the state" (Walker, 2001, p. 18).

In Florida, over 30,000 students in five years enrolled in baccalaureate degree programs because they were cheaper and more convenient than universities (Marcus, 2014). "Every individual should have the opportunity to achieve an education level commensurate with his or her abilities, determination and desire" (Walker & Zeiss, 2001, p. 11). Proponents of the CCB claimed that many students cannot afford a four-year institution. They maintain that the CCB provides an opportunity for affordable higher education to those poorer students (DiSalvio, 2015; Fanelli, 2007; Floyd & Walker, 2009; Walker, n.d.a, b, d, 2000).

At a community college the tuition cost for the student is considerably less than a four-year university and the cost to the taxpayers to deliver the CCB is half as much as the cost at a university (Floyd & Walker, 2009; Walker, n.d.a, c, d, 2001). Even if a university is geographically close, it may not offer the degree programs that the students need (Floyd & Walker, 2009; Lane, 2003; McKinney et al., 2013). Often the schedule of university classes is not accessible for students who may work full-time. Proponents of the CCB stated that the opportunity to earn a bachelor's degree should be open to everyone and not just the elite. However, even for middle-income families, 43% cannot afford to attend a four-year university and 16% do not go to college at all (Mills, 2003; Walker, n.d.b).

Higher salaries. "It is an economic reality that education and income are inextricably linked" (Walker, n.d.b, p. 10). More education will almost always result in increased life-time

earnings (Gallagher, 2003). In addition, citizens who earn more, pay more taxes, and are less likely to receive government assistance (Floyd & Walker, 2009).

Those who have higher education are also more likely to be employed in stable and enjoyable positions (Wolf, 2002). An associate degree graduate earns 20% more than students with some college and another 20% more than high school graduates. Graduates with bachelor's degrees can be expected to earn another 20% over the associate degree graduate (Dowd, 2003; Schudde & Goldrick-Rab, 2015).

In Florida in 2008-2009, CCB graduates earned $47,080 the first year after graduating, compared to $36,552 earned by graduates of a four-year university (Gonzalez, 2011). Graduates with a technical associate degree also make more than university bachelor's degrees graduates, at least initially. These associate degree graduates learned primarily skills rather than theory in their coursework. Yet the early salary advantage of the associate degree graduates dwindles over time as the bachelor's degree graduates catch up, with the bachelor's degree eventually earning more than the associate's (Marcus, 2013).

Survival of the community college. Because higher education has been slow to respond to the skills needed, many companies are starting their own colleges or suggesting their employees utilize online-based colleges such as University of Phoenix to obtain the necessary training (Walker, n.d.a, d, 2000). Kenneth Walker (n.d.c) stated that without the evolution to include the CCB, many community colleges will not survive the current competitive economy. Authors suggest that according to life cycle theory, community colleges must be responsive to the workforce demands or they will begin the decline phase (Bilsky et al., 2012; Walker, n.d.c, 2001). Walker and Zeiss (2001), community college presidents themselves, believed that in order to survive, community colleges must find new ways of delivering the skills the workforce

is demanding. They suggest that community colleges must evolve and not simply continue as they have been (Walker & Zeiss, 2001).

Cons of the CCB Degree

Critics cite many reasons why the community college baccalaureate is not needed and should not be allowed: mission creep, limited resources, quality of the degree, disappearance of the community college, limited graduate study opportunities, competition with universities, and higher tuition (Lane, 2003). In Colorado, lobbyists against the CCB required that the CCB degree programs be limited to career and technical fields. Michigan universities strongly opposed the CCB in their state, claiming mission creep and questionable quality of the degree (Marcus, 2014).

Mission creep. To establish the CCB is to betray the mission of community colleges. The focus on the higher level degrees will cause focus to be shifted off of the remedial and general education programs (Eaton, 2005). "No doubt, every community college that adds four-year degrees will swear loyalty to the 'community college mission,' but they will quickly find themselves subject to forces that are far more powerful than any institution" (Pedersen, 2001, p. 4). Many claim that community colleges are going beyond their mission in offering bachelor's degrees, but others claim they are still fulfilling the mission of serving the community (DiSalvio, 2015; Thomason, 2013) and providing "each citizen with the opportunity to participate fully in the mainstream of American economic life" (Floyd & Walker, 2009, p. 91).

One university professor suggested that not only does the conferring of baccalaureate degrees change the mission of the community college but it also changes that institution's identity. He theorized that the community colleges who do offer bachelor's degrees may

develop an identity that is separate and distinct from those colleges who do not offer the degrees (Levin, n.d.).

In the face of continuing accusations of mission creep, community colleges maintain that they are entirely within their mission and only want to offer the degrees that their students need and that the universities do not want to offer (Boulard, 2010). The chancellor of the Florida College System said the mission of the community colleges has not changed; that they are still open access institutions (Gonzalez, 2011). Community colleges have a responsibility to their community to graduate students who will be knowledgeable and productive workers and at the same time to continue open access (Gabbard & Mupinga, 2013). Therefore, a particular community college's mission should be different than that of a community college in a different area, because the workforce and student needs are different (Walker, 2001).

Levin (n.d.) conducted research of community colleges in Canada which offered the baccalaureate degree between 1988 and 2002. He found that although the community colleges claimed to place importance on open access and providing for the needs of the community, what they really pursued was more money, students with higher abilities, and institutional prestige.

Limited resources. Several critics agree that most community colleges do not have the resources to support the four-year degree students, the two-year degree students, and the academic developmental students. There is an expectation that some of the programs will be diminished or discontinued so that the resources can be focused on the baccalaureate programs. The probable result is that the academic developmental programs, certificate programs, and the two-year programs will be the ones to suffer due to limited resources (Lane, 2003; Wagoner & Ayon, 2012; Wattenbarger, 2000). In fact, in Levin's (n.d.) study, a Canadian community college that was in the process of converting to a baccalaureate institution demonstrated that the

baccalaureate programs received more of the resources while the non-baccalaureate programs received increasingly fewer resources.

Critics also claimed that community colleges do not have adequate libraries, laboratories, or qualified faculty (Fanelli, 2007). This is true in many cases and some community colleges have had to spend money to upgrade facilities and recruit faculty with higher levels of education. Nevertheless some community colleges are employing unique ways to expand their resources by utilizing private companies, government agencies, and hospitals for lab space (Marcus, 2014).

Low quality degree. Many have raised the question of the quality of the CCB, implying that the academic rigor at community colleges is not as strong as that at universities (Blankenship, 2011). Indeed, a study of 417 students enrolled in a college level math course at University of Tennessee in Chattanooga seemed to suggest that this may be true. The students who had taken a high school level (intermediate algebra) course at a community college were compared with those who had taken intermediate algebra at a four-year institution. Those students who had taken the course at a community college displayed higher course grades in the community college course but performed considerably worse in the college level course than did the students who took the intermediate course at a university (Friedl, Pittenger, & Sherman, 2012).

Often students who attend a community college do so because they are not academically prepared to attend a university. Open access allows students the opportunity for a bachelor's degree, but the students may not have the academic skills necessary to achieve the degree. Yet, by allowing the community college to offer the student a bachelor's degree, that same academically underprepared student (now with a bachelor's degree) is competing for jobs against those students who attended a university and obtained a more rigorous bachelor's degree

(Wattenbarger, 2000). The CCB degree may allow "undeserving students access to higher education and the lowering of academic standards" (Gabbard & Mupinga, 2013, p. 375). Many believe that open access should be discontinued as it sets students up to fail and will only result in compromised academic standards (Gabbard & Mupinga, 2013).

Wattenbarger (2000) maintained that no one will believe that the CCB is as important as a bachelor's degree conferred by a four-year university or college. Walker, who has been very vocal in his support of the CCB, asserted that the community college faculty are quality teachers who emphasize learning rather than research and that the community colleges are accredited by the same associations as universities (2001). While that statement may be true, it is also true that many community college faculty do not hold a PhD degree while almost every instructor at a university does (Wagoner & Ayon, 2012). Some also say that it is a benefit that community college faculty focus on teaching rather than research and publication (Mills, 2003). Arsenault, a professor at University of South Florida-St. Petersburg said it is an advantage that universities balance research and teaching (as cited in Mills, 2003). Community colleges typically have no requirement for research and service is limited to the institution where they teach (Wagoner & Ayon, 2012).

Much of the higher education population may believe that a CCB will be of low quality (Bragg et al., 2009). Yet the colleges are being accredited from regional accreditation associations (Newman as cited in Walker, n.d.b). What is more, the Bachelor of Applied Science Task Force in Florida had the assignment to ensure that the B.A.S. degree met the curriculum requirements of all bachelor's degrees in Florida, including 36 credit hours of general education coursework. The task force endeavored to make sure the degree was acceptable in the workplace

as well as meeting all requirements for graduate admission. CCB programs in Florida undergo a "rigorous review and approval process" (Bilsky et al., 2012, p. 43).

Disappearance of the community college. Because community colleges allow access to everyone as democracy's colleges, some believe they will democratize baccalaureate degrees. However, while the opportunity may exist for everyone to achieve a bachelor's degree, the reality is that not everyone will. In attempting to provide that opportunity, the community college may shut out the very students who need their services the most (Gonzalez, 2012; Pedersen, 2001). If all the community colleges begin offering baccalaureate degrees and discontinue the typical community college functions, there will be no one to serve that segment of students who only want a technical certificate or those older students who return for additional job training (Lane, 2003; Wattenbarger, 2000).

However, Walker (2001) did not believe that all community colleges who want to confer baccalaureate degrees want to become universities. He believed they want to remain community colleges and retain the community college mission. Yet, most of the community colleges who began offering bachelor's degrees changed the name of the institution or at least dropped the "community" out of the name (AACC, 2010; Floyd, Falconetti, & Felsher, 2012). Nevertheless, Eaton (2007), President of the Council for Higher Education Accreditation, did not think that every community college, or even the majority, will convert from a two-year institution to a four-year. Rather she suggested that baccalaureate degree-granting two-year institutions will need to cultivate their relationships with four-year institutions to ensure all opportunities of higher education are open to students.

Yet the community colleges surveyed in Floyd and St. Arnauld's (2007) study are no longer considered community colleges by the Carnegie Foundation. Despite that, all 10

institutions have remained committed to the community college mission of open access, vocational education, remedial education, and adult and community education (Floyd & St. Arnauld, 2007). In states where the CCB institutions are not required to retain the community college mission, there is no guarantee that they will. It is possible that in time the institutions will abandon the original mission in favor of those with more prestige (Wagoner & Ayon, 2012).

State governments have taken different approaches in trying to ensure that community colleges remain primarily institutions who confer associate degrees even if they also confer bachelor's degrees. Several states have required that their community colleges who offer the CCB must also maintain the community college mission (Floyd & St. Arnauld, 2007; Floyd & Walker, 2009). While some states do not have this provision, at least Florida and Utah do, thereby protecting access to higher education for community college students. However, in those states that do not stipulate retention of the community college mission, colleges who face strain on resources and the desire to continually expand the baccalaureate program offerings, may decrease the lower level programs thereby essentially dissolving the community college (Levin, n.d.).

In Florida the number of associate degrees awarded, associate transfers to universities, and remedial and adult education programs have not declined, but have increased. In addition, these community colleges still retain their open access policies (Bilsky et al., 2012).

Opportunity for graduate programs. Another consideration is whether and how the CCB degree will transfer and be accepted toward graduate programs. It is understandable that students who have obtained the CCB may want to continue to graduate school and will expect their degrees to be accepted as real. As of yet, however, the acceptance of the degree by graduate programs has not been determined (DiSalvio, 2015; Floyd, Felsher, & Catullo, 2012).

Floyd, Felsher, and Catullo (2012) suggested that community colleges offering the baccalaureate create articulation agreements with universities to ensure that the CCB will be accepted toward the university master's program requirements.

Competition with universities. There has been much controversy about the introduction of CCB degrees. With most of the opposition coming from the universities in the state, some states have decided not to approve the CCB degree programs. The state of Arizona defeated a bill that would have allowed their community colleges to offer baccalaureate degrees. The leaders of the four-year institutions were against the proposal due to the potential loss of enrollment (Gonzalez, 2011). Floyd cautioned that community colleges should be careful not to duplicate degrees that are already offered at the state universities (as cited in DiSalvio, 2015).

The colleges in Florida must demonstrate a market need for the CCB program or a distance problem in obtaining a particular degree at the university (Floyd & St. Arnauld, 2007). The community college cannot offer bachelor's degrees without state approval and they cannot duplicate degrees offered at the nearest university (Bilsky et al., 2012; Gonzalez, 2011). There is even some working together between the community colleges and universities. St. Petersburg College in Florida consulted with the University of South Florida before establishing any new baccalaureate degree programs (Mills, 2003). When the University of Central Florida had to cut some degree programs because of budget, they suggested that Valencia College (a community college) pick up the degrees, which they did (Gonzalez, 2011).

In the beginning, Florida universities were not happy that the community colleges were offering baccalaureate degrees; however, according to one college administrator, the universities have since come to see that the colleges are offering quality programs (Floyd & St. Arnauld, 2007). In addition, many of the CCB degrees offered are applied or technical degrees that

universities are not interested in offering (Boulard, 2010). Furthermore while the enrollment in CCB programs in Florida is increasing, the enrollment in upper division courses at universities is also increasing, not decreasing as many critics feared (Bilsky et al., 2012; Floyd & Walker, 2009; Smith & Holcombe, 2008). Floyd and Walker (2009) believed that eventually with the addition of more CCB programs, if the universities do experience a drop in enrollment that they will then shift their focus more to research and graduate education and away from undergraduate education. Some believe that the proliferation of the CCB may result in a devaluing of the university-obtained baccalaureate degree since the competitors for positions will have the CCB, with its emphasis on skills (Bragg et al., 2009; Desai, 2011).

Higher tuition. Invariably the higher cost of offering baccalaureate degrees (higher salaries for qualified faculty, updated labs and libraries) will drive up the community college tuition (Eaton, 2005). To pay for the higher costs of delivering the baccalaureate courses, the students will undoubtedly pay more tuition, effectively underwriting the baccalaureate education (Pedersen, 2001). "The baccalaureate access gained by a handful of academically advantaged students will come at the expense of the academically and economically disadvantaged, who will see their program choices and vital support services reduced" (Pedersen, 2001, p. 5). In Florida, the upper level courses of the CCB carry a higher tuition rate than the lower division courses. However, the tuition rate for the upper level courses is still less than that at a university (Bilsky et al., 2012).

Expected Outcomes of the CCB

Currently the only measurements of CCB outcomes are employment and licensure pass rates. Community colleges who confer baccalaureate degrees are producing graduates who are being employed (Newman, as cited in Walker, n.d.b). One of the criteria for the Florida CCB

degrees is that a student must earn an associate degree before being admitted to the upper level baccalaureate program. This enables the college to retain open access to lower level courses, but to also adhere to admission criteria for the upper level courses (Bilsky et al., 2012).

The CCB teacher education programs in Florida have been successful in their graduation rates and have had excellent pass rates on the licensure exam. The graduates have also been successful in securing teaching positions. A study by Floyd and St. Arnauld (2007), of 10 community colleges or former community colleges, revealed outcomes for CCB teacher education programs. Seven of the institutions studied identified a 100% pass rate on the state licensure exam. One institution obtained a 98% pass rate. At the time of this study, two of the programs had not yet graduated a class. Miami-Dade College, which offers CCB programs, had a 94% job placement rate in 2008-2009. This can be attributed at least partially to the fact that the CCB programs match the workforce needs. Miami-Dade works with local businesses in assessing the workforce needs in order to determine which degree programs the college will offer (Gonzalez, 2011).

Many in Florida believe that after a decade of offering the CCB, it is contributing to the growth of the economy and providing quality graduates for the job market (Floyd & St. Arnauld, 2007; Gonzalez, 2011). "Any time access to education is increased, it is a positive step forward in economic vitality," said the president of Westmoreland County Community College (as cited in Erdley, 2015, p. 1). On the other hand, Elisabeth Barnett, a senior research associate with the Community College Research Center at Teachers College, Columbia University (as cited in Adams, 2011) stated that the research shows that more jobs are available for those with certificates or associate degrees than for those with a baccalaureate degree. Indeed, a study of

graduates of CCB nursing programs did not produce statistically significant results that the graduates were increasing the production of nurses (Porter, Cominole, & Jaquette, n.d.).

Even though current graduation rates of CCB programs may not indicate an increase in degree production, research does seem to indicate that a specific segment of the population are graduating. Data suggests that the non-traditional and place-bound students are the graduates of CCB programs (Smith & Holcombe, 2008). Those students who enroll in CCB programs tend to be older and more diverse than university students. This results in a more diverse pool of graduates entering the workforce. CCB programs also are more likely than universities to graduate "local" students which means that the degree holders are more likely to remain in the local workforce (Shah, 2010).

Although not a measurable outcome, critics' claims of an inferior degree, do not appear to be valid. According to a study by Shah (2010), no indication was given by CCB alumni that they felt their degree was substandard. In fact, the CCB alumni gave higher ratings to their experiences than the graduates of University of South Florida (USF). In addition, the CCB alumni responded that they were better prepared, more satisfied, and predicted staying longer in their teaching positions than did the USF alumni (Shah, 2010).

Viable Alternatives to the CCB

The creation of the Community College Baccalaureate Association (CCBA) in 1994 was for one purpose – to promote the CCB. The CCBA has since come to recognize that it does not matter how a student obtains a bachelor's degree, it only matters that they are able to get it. This has led the association to expand its mission and now promote partnership agreements between community colleges and universities in whatever form works for the institutions and the students (Garmon, 2004). Many of the community colleges who do confer their own baccalaureate

degrees also continue to participate in alternative pathways to traditional bachelor's degrees (Floyd & Walker, 2009).

Articulation Agreements

The CCB is not the only method by which students at community colleges can obtain a bachelor's degree. Many four-year institutions have partnered with community colleges to offer 2+2 programs. In these programs the community college teaches the courses for the first two years and the university teaches the courses the last two years. The four-year institution will often teach the courses on the campus of the community college or provide them via distance learning (Lane, 2003). Another partnership agreement allows for three years of courses to be taught at the community college level and the final year to be taught in person or via distance learning by the university. In both cases the university confers the baccalaureate degree (Fanelli, 2007).

Several states including Florida, Illinois, California, Texas, New York, Oklahoma, Washington, and Tennessee have a higher student transfer rate, in large part due to their articulation agreements with universities (Floyd, Falconetti, & Felsher, 2012). Due to a lack of four-year institutions in the southern part of the state, New Jersey is greatly utilizing articulation agreements enabling university faculty to teach on the community college campuses. This permits students to obtain their associate degree then transfer to a university and obtain their bachelor's degree all on the same campus. This arrangement is not only more convenient for students, but it also increases the probability of students graduating with a bachelor's degree (Lai, 2014).

Rather than allowing community colleges to offer their own baccalaureate degrees, states could make them partner with four-year universities in order to offer the degrees. This would

answer the need for more bachelor's degrees and also preserve the two-year community college to perform the rest of its mission (Lane, 2003).

Concurrent-use Facilities

In a concurrent-use partnership agreement, the community college signs agreements with several universities to provide baccalaureate degrees to the community college students. Several states are actively using concurrent-use programs and a study by Windham et al. (2001) indicated that these programs are serving at least a segment of the community college population that would not otherwise have access to baccalaureate degrees.

University Center

The university center is a partnership between a community college and one or several universities. Classroom space and office space are often located on the community college campus. The university center allows the community college to focus its resources on the associate level students and other programs, while the four-year institutions provide student services such as advisement to students seeking to transfer and attain a bachelor's degree. The university center also counteracts the claim that community colleges do not have qualified faculty to teach upper level courses by enlisting faculty from the university to teach the courses if necessary. Towson University in Maryland is going so far as to build their own building on the campus of Harford Community College in order to more adequately provide baccalaureate degrees for the students of Harford (Boulard, 2010; Walker, 2000).

An article by Bradley (2014) suggests that the reason for poor completion rates of community college transfer students is that they lose some, or sometimes most, of their credits in the transfer. He suggested that a partnership agreement between the community college and the university is not enough, but that the two institutions must truly partner and commit to working

together. An increase in student support, including financial support, an alignment of curricula, and a fostering of a transfer culture at both institutions is vital to successful completion rates.

Transfer Degree

California has approved the offering of an associate degree for transfer at its community colleges. The California State University campuses must accept the degree and admit a student, granting priority admission to the major chosen. The university must also guarantee that the student will not have to complete more than 60 credit hours to complete the bachelor's degree and cannot require that a student retake a course that was completed successfully at the community college (Bradley, 2014).

Online Courses

Online courses are becoming a viable option for providing courses to many students bound by time and place, although some students are not able to make use of online learning due to learning styles or lack of internet access (Windham et al., 2001).

Conclusion

While community colleges do have open access, admitting everyone, that does not mean that everyone is getting degrees. One college described their admission policy as a placement policy due to the fact that all students must take placement tests before being allowed to begin courses toward a degree or being placed into remedial courses accordingly (Gabbard & Mupinga, 2013). At the same time, the very benefits of the community college, such as flexibility and convenience, may actually prevent students from succeeding in transfer (Long & Kurlaender, 2009). Community colleges may increase student enrollment in college in general, but they weaken baccalaureate degree graduation rates by re-routing students to associate degrees and

delaying students in remediation courses. Some of those students, frustrated with delayed progress on their degree, end up dropping out altogether (Dowd, 2003; Gonzalez, 2012).

There are many benefits and advocates of the CCB degree programs, yet there are just as many critics and criticisms. Much of the debate about whether or not CCB programs should be allowed will become moot as more states grant the authority and more community colleges are adding additional programs. While some of the arguments are valid, some do not seem to be manifesting as predicted. So far there are not enough studies on the outcomes of the programs, but it does not seem as though the claims of a "second-class" (Wattenbarger, 2000, p.5) degree can be deemed to be invalid. In addition, there is a need for outcome studies regarding employer satisfaction in graduates with a CCB degree compared to traditional baccalaureate degree graduates. There is a need for an increase in bachelor's degree holders in certain disciplines in some regional areas, but it has not yet been determined if the CCB will meet that need.

The claims of mission creep and limited resources of community colleges may have validity and may prove to be challenges for the community colleges who start CCB programs. Whether or not graduate programs accept the degree, the effect CCB programs have on universities, and the other issues will possibly prevent some states from starting CCB programs. For states, like Florida, who have several successful programs underway and graduating students, the criticisms and challenges will not matter. Those states will continue the programs as long as they are needed and are successful. Whether or not the CCB will be introduced as the answer to the education dilemma in Illinois remains to be seen.

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A Brief Review of Racial/Ethnic Disproportionality in Special Education

Samuel F Whitley

Illinois State University

2005 South Whittier Avenue

Springfield, Il 62704

(217)454-2679

swhitley@sps186.org

Abstract

The demographic composition of America's public schools is drastically changing. This increasing racial/ethnic diversity has led to an increased interest in disproportionality research in special education. Previous research has concluded that non-white students are generally overrepresented in special education. Non-white student underrepresentation of racial/ethnic minorities has also been indicated within the special education population. Regardless of the disparate implications from the two research lines, schools may benefit from implementing culturally relevant instructional and behavioral strategies, offering staff trainings, and focusing on assessment fairness.

Keywords: disproportionality; overrepresentation; underrepresentation; cultural mismatch

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Demographics

Diversity is a hallmark of the composition of the United States. The population of the country has grown progressively more racially/ethnically diverse over the past ten years, as nearly every non-white racial category has seen its percentage of the total population increase during the last five years ("U.S. Census Bureau Quick Facts: Race and Hispanic Origin," 2016). Non-white racial/ethnic groups now constitute nearly 39% of the total population ("U.S. Census Bureau Quick Facts: Race and Hispanic Origin," 2016). This increasing level of human diversity brings with it alterations to previously established cultural norms and institutions. One such institution is the American public education system. The composition of American public schools is projected to mirror that of the at large population. Nearly 17% of the total population is between the school ages of 5 and 18 years old ("U.S. Census Bureau Quick Facts: Age and Sex," 2016) and it is projected that by 2025, approximately 54% of the total public school population will be from a non-white racial/ethnic background (Kena et al., 2016). While the student population in the United States is growing progressively more diverse, the racial/ethnic makeup of America's teaching staff has remained static (Ford, 2012). These facts may potentially exacerbate a longstanding controversy in public education, the disproportionate representation of racially/ethnic diverse students in special education.

Overrepresentation as Disproportionality in Special Education

Disproportionality is a nebulous term determined through various calculations (Boneshefski & Runge, 2014; Ford, 2012). For the purposes of this paper it refers to a pattern of miscategorization among various racial/ethnic groups within the context of special education eligibility (Ford, 2012). Concern regarding the unequal representation of racially/ethnically

diverse students in special education has an extensive history that traces its origins to the 1960s (Cohen, Burns, Riley-Tillman, & Hosp, 2015). Disproportionality studies in special education have generally pointed to racial/ethnic overrepresentation. This has held true with numerous researchers conducting studies in varied locales across multiple decades. The observation of overrepresentation has shown a strong pattern of systematic replication (Cohen et al., 2015), thus lending credence to the believability of the phenomenon (Solomon, 2016). Nearly 30 years ago, Chinn and Hughes (1987) indicated that African-American students were overrepresented in the eligibility categories of intellectual disability (ID) and emotional disability (ED). Unfortunately, this pattern of overrepresentation persists as African-American students are still placed in those eligibility categories at a rate higher than would be expected given their percentage of the total school aged population (Ford, 2012).

Potential Causes and Outcomes of Overrepresentation Disproportionality

One of the potential causes of overrepresentation disproportionality of racial/ethnic minorities in special education has centered on the historical and systematic oppression experienced by these individuals within the United States (Cohen et al., 2015). Leonardo and Broderick (2011) claim that this history has been recapitulated within the ideology underpinning the construction of disability. The authors state that white students have been posited as the criterion against which other non-white students are compared. Differences are seen as deficits within the non-white student as a result of their membership in a differing racial/ethnic group (Leonardo & Broderick, 2011).

This ideology is pervasive, as it not only plays a role in the social construction of disability, but some have also claimed its presence within school instructional materials. Instructional materials have been criticized for not including racially/ethnically diverse

characters and not providing multiple viewpoints or worldviews (Peterson, 2008). Many students may feel that their unique cultural history or worldview is not reflected within their course materials or class content (Levy, 2015; Santiago, 2013). Students' feelings of being underrepresented in their curriculum have been correlated with poorer academic achievement for racially/ethnically diverse students (Sleeter, 2011).

Content analyses of school textbooks have indicated an increase in the amount of content related to racially/ethnically diverse populations, but white protagonists tend to dominate the majority of coverage and be presented in a more multi-faceted manner than their racially/ethnically diverse counterparts, especially within the academic realms of social studies and history (Sleeter, 2011). While textbooks in these academic domains have become more inclusive in their representations of race, they fail to provide a description of the institutional nature of implicit racism in schools (Brown & Brown, 2010). School textbooks have been observed to generally situate racism and oppression in the context of a "story of progress" (Suh, An, & Forest, 2014, p. 49). This misrepresentation serves to feed the narrative that racism is enacted overtly by nativist individuals and not implicitly by individual actors couched within systemic and institutionalized prejudices.

The impact of implicit bias and an ideology of superiority may be compounded by the racial/ethnic composition of the nations teaching force. The preponderance of public school teachers in the United States are college educated white females with estimates ranging from 75% to 80% of the total percentage of teachers in America (Ford, 2012; Skiba, Horner, Chung, Rausch, May, & Tobin, 2011). Incongruity between the cultures of teachers and students has been posited as resulting in a cultural mismatch that is often manifested as teachers' implicit bias to differentially estimate students' academic ability as a function of their perceived racial/ethnic

classification (Sullivan, 2017). Lowered estimations of students' capabilities have been shown to be a contributing factor to the academic achievement disparity between children from dominant and non-dominant cultural backgrounds (Van den Bergh, Denessen, Hornstra, Voeten, and Hollan, 2010).

Furthermore, the existence of implicit teacher bias within a diverse classroom can materialize as a poor understanding of the behavioral attributes and intentions of students from different racial/ethnic backgrounds (Gregory & Weinstein, 2008; Sullivan, Klingbeil, & Van Norman, 2013). This misinterpretation of behaviors is thought to be a possibly causal factor in the disproportionate office referral (ODR) and suspension rates for some groups of racially/ethnically diverse students (Skiba et al., 2011; Sullivan et al., 2013). Increased ODRs and suspensions result in time out of the classroom, which is a contributing factor in academic difficulties and referrals for special education evaluation (Sullivan et al., 2013). This is especially troublesome given that there is a general lack of research targeting evidence-based prevention and remediation practices specific to diverse students (Trainor & Bal, 2014).

The teacher staffing percentages by race and sex discussed above are also mirrored within support personnel positions such as diagnosticians and school psychologists (Castillo, Curtis, & Gelley, 2013). Thus cultural mismatch not only modulates rates of referral for special education evaluations, but also possibly exerts influence within testing sessions. Exacerbating the effects of cultural mismatch within special education evaluations are concerns regarding the testing tools often used to determine special education eligibility (Ford, 2012; Leonardo & Broderick, 2011; Reeve & Charles, 2008). For instance, racial/ethnic minorities (with the exception of Asian/Pacific Islanders) tend to perform worse on intelligence measures than whites by approximately one standard deviation (Rindermann, 2012). This has been cited as evidence of

racial bias inherent to intelligence testing (Ford, 2012; Laundra & Sutton, 2008). Academic screeners have also been shown to have differential patterns of predictive validity that vary by racial/ethnic subgroup (Hosp, Hosp, & Dole, 2011). These tools are often utilized for making special education eligibility decisions. If there is systematic variation in test performance attributable to group membership (race/ethnicity) and these tools are used to place students into special education, then it holds that there would also be systematic variation in assignment to special education based on racial/ethnic group membership. This biased process as described above can have serious ramifications beyond overrepresentation. Students in special education have been shown to be at increased risk for depression, poor educational attainment, incarceration, and substance abuse as adults (Chesmore, Ou, & Reynolds, 2016).

Critique of Overrepresentation Disproportionality Studies in Special Education

Despite extensive study and replicated findings, the research base that established and continues to support overrepresentation disproportionality is not without criticism. Previous research has been challenged on methodological grounds. Much of the previous research examining racial/ethnic disproportionality has been descriptive, in that it has compared the percentage of a specific demographic group's representation within special education or a special education category to the percentage of that group in the total population (Hibel, Farkas, & Morgan, 2010).

Researchers have also pointed to the general lack of rigorous covariate controls such as socio-economic standing (SES), previous educational attainment, and school resources in previous analyses of disproportionality studies (Hibel et al., 2010). Previous research that has sought to address these factors has typically utilized aggregate level data to control for covariates such as average school academic performance or total percentage of low SES students attending

a school (Sullivan et al., 2013). Studies that do not control for individual level variables are susceptible to the ecological fallacy (Morgan & Farkas, 2016; Sullivan et al., 2013). Individual outcomes should not be predicted solely based on aggregated data. Without the consideration of student-level information, it is difficult to confidently determine accurate rates of disproportionality (Morgan & Farkas, 2016; Sullivan et al., 2013).

In response to this, there is an increasingly large body of research reexamining the question of overrepresentation disproportionality of racial/ethnic minorities in special education utilizing more rigorous covariate controls in conjunction with nationally representative longitudinal databases and sophisticated statistical analyses that are less susceptible to the effects of time and bias (Cohen et al., 2015; Hibel et al., 2010; Morgan, Farkas, Hillemeier, & Maczuga, 2012). These studies have added to a growing literature base challenging the claims that minorities may be disproportionately overrepresented in special education (Hibel et al., 2010; Morgan et al., 2015; Rice, Taymans, Brown, & Srsic, 2012).

The body of literature challenging the presence of overrepresentation disproportionality has also been harshly critiqued. A primary criticism involves the interrelationship of the studies' control variables and students' representation in special education. Experiences of discrimination and unequal opportunity may be inextricably linked to the academic functioning of racially/ethnically diverse students and lead to special education eligibility (Cohen et al., 2015). Attempts to disentangle these variables may obfuscate the interpretation of the impacts that the interrelationship of these factors may have on individuals from non-white demographic categories (Noltemeyer, Ward, & Mcloughlin, 2015).

This point is also possibly statistically reified within the analyses typically conducted within the underrepresentation literature. It may be the case that the independent variables

controlled for (SES, race, academic achievement, etc…) may share such a strong relationship that in isolation they cannot provide unique predictive variance of special education eligibility (Cohen et al., 2015). In situations where strong interrelationships between independent variables exist (multicolinearity) they are generally combined into a factor variable (Cohen et al, 2015; Creswell, 2014). This mirrors the real world relationship between race, SES, achievement, and special education placement previously discussed. While a single variable explanation is parsimonious, it is rarely fully explanatory when considering the complexity of individual experiences.

Addressing Disproportionality in Special Education

Regardless of divergent findings, both lines of disproportionality research elucidate the failure of general and special education to meet the needs of racially/ethnically diverse populations. Despite this failure, there are recommendations that when implemented may improve the educational outcomes of non-white students. First, it is imperative that schools adopt universal evidence-based approaches that are culturally representative and meaningful to the student body (Fallon, O'Keefe, Gage, & Sugai, 2015). The adoption of culturally relevant evidence based practices requires explicit attention focusing on culturally responsive research (Trainor & Bal, 2014). Prior to selecting academic or behavioral practices for school-wide adoption, school personnel should ensure that the use of such practices have been validated with study samples comparable to their schools' student body.

Second, behavior management systems and instructional materials should incorporate the language, culture, and values of the student body (Fallon et al., 2015). The adoption of racially/ethnically representative curricular materials may offer non-white students the opportunity to positively learn about their racial/ethnic background. This may help to develop a

strong and healthy racial/ethnic identity (Johnson & Whitcomb, 2016). Materials should include visual representations of racially/ethnically diverse individuals in accordance with curriculum content that references varied cultural histories and perspectives. The integration of these sorts of materials seems ideally suited for literacy, history, and social studies curriculums.

Third, diversity trainings for staff may help to bring to light inherent teacher biases for the purpose of developing a more understanding mindset (Johnson & Whitcomb, 2016). These trainings could include a focus on systems-wide bias checking. Racially/ethnically disaggregated special education referral and office discipline referral data can be easily and routinely inspected for the presence of disproportionality by calculating risk ratios for each non-white student category (Boneshefski & Runge, 2014). The use of these calculations within a school and district-wide data system can check for the presence of disproportionality at multiple levels (classroom, school, or district) across multiple points in time (Boneshefski & Runge, 2014; Skiba, 2014).

School-wide diversity trainings could also provide teachers with instruction on the impact of language on their students. School personnel may improve the outcomes of their students by eradicating racist language used by both staff and students. Disavowal of discriminatory language can become systemic by incorporating action steps regarding its use and remediation into schools' formal anti-bullying policies. This may help racially/ethnically diverse students to avoid the internalization of negative valuations of their identity that others attribute to their racial/ethnic designation. Institutionalized intolerance of discriminatory language creates an environment where non-white students can feel safe within their racial/ethnic identity (Johnson & Whitcomb, 2016).

Diversity trainings could also elucidate ways to identify personal biases. The identification of such biases is facilitated by asking staff to consider if they recognize their students' personal racial/ethnic identity and if they provide them with a space and time to discuss factors related to their identities. Addressing personal biases fosters more empathetic interactions with racially/ethnically diverse students. Multiple caring and responsive cross-cultural interpersonal student and teacher interactions can have powerful protective impacts against a host of deleterious outcomes such as school dropout and poor social-emotional adjustment (Baroody, Rimm-Kaufman, Larsen, & Curby, 2014; Doren, Murray, & Gau, 2014; Johnson & Whitcomb, 2016).

Finally, bias must be identified and addressed not only within interpersonal interactions, but also within the diagnostic categories and assessment process of special education. This mandates the use of unbiased tools during special education evaluations. Despite common beliefs to the contrary, empirical analysis of well-constructed tests consistently fails to identify systematic test bias for American born non-white students based on racial/ethnic group membership (Brown, Reynolds, & Whitaker, 1999; Reynolds, 2000). A singular focus on test bias occludes the more important construct of fairness. The ethical and fair use of a test ultimately lies in the hands of the test user. Simply stated, tests do not diagnose disabilities, people diagnose disabilities. A greater emphasis on the quantification and practice of fairness in testing may help to ensure equally beneficial outcomes resultant from special education evaluations (Helms, 2006).

Conclusion

The demographic composition of American schools is rapidly changing. With this change, come significant challenges and opportunities for improvements. Historically,

racially/ethnically diverse students have been shown to be overrepresented within special education enrollment numbers (Ford, 2012; Sullivan et al., 2013). Many explanations have been put forth to explain this phenomenon, such as the effects of poverty, but more prominently, cultural mismatch (Gregory & Weinstein, 2008; Sullivan et al., 2013). This line of overrepresentation disproportionality research has recently been called into question. Regardless of this conflict, educators may best serve their students by implementing culturally responsive school wide behavior systems (Fallon et al., 2015), developing caring student and teacher relationships (Baroody et al., 2014; Doren et al., 2014; Johnson & Whitcomb, 2016), and challenging implicit bias (Johnson & Whitcomb, 2016). An increased focus on fairness within special education testing and decision-making may further ensure educational equity for non-white students (Helms, 2006).

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