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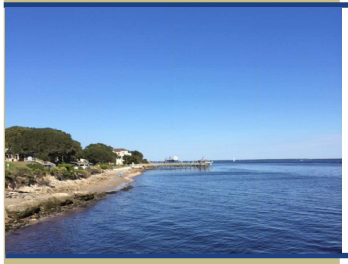

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A SCOPE Education Services Research Publication

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Article Submissions

The Journal for Leadership and Instruction is an international peer reviewed publication that is published twice each year. To be considered for publication, all submissions should be double spaced, in 12 point characters and accompanied by a disk in Word, or they should be sent by email as a Word document. Authors should follow the current APA guidelines. The review of related literature should be written in the past tense. No article will be accepted if it is more than 10 pages (double spaced) long. Suggested changes are the responsibility of the author. For the Fall issue, we ask that all submissions arrive by July 1, 2019.

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About SCOPE

SCOPE Education Services is a not-for-profit, private, voluntary organization permanently chartered by the New York State Board of Regents to provide services to school districts. Founded in 1964 by school superintendents, it is a cooperative venture for sharing resources to deal with common concerns. It is governed by a Board of Directors of school superintendents and college representatives and serves as a regional School Study Council and School Board Institute.

The Editorial Board of the Journal for Leadership and Instruction has identified the following thematic interests for the 2019 issues:

1. Early Childhood Development
2. Social and Emotional Development and Mental Health
3. School Finance
4. Culturally Responsive and Sustaining Education
5. Media Literacy
6. Equity in Student Achievement
7. School Safety
8. Diversity in the School Workforce

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Editor's Perspective

In the Winter 2019 Edition of the University of Chicago Magazine Susie Allen reviews several research findings of Ayelet Fishback, Professor of Behavioral Science and Marketing at University of Chicago Booth School. Professor Fishback states that her research often focuses on human motivation. In a study of 66 preschoolers, Fishback and her colleague, Michael Maimaran, discovered that motivating children to eat a healthy snack seems to work best without a motivational story. These young children rejected the motivational stories and ate less of the snack than those who simply had the snacks available.

Also, she led an experimental study among middle schoolers in which the students received motivational advice from a teacher or gave advice to younger students on how to stay motivated in school. Those who gave advice devoted 38 more minutes per week to learning vocabulary. Fishback and her colleagues found that these results were similar for adults trying to lose weight, to find a job, to manage money and even to control one's temper.

Wooley and Fishback showed that "what helps us persist in our goals isn't a single minded focus on the future. Rather, it's the presence of short term rewards, such as enjoyment (p. 49)." Fishback found that to sustain motivation in many endeavors it is necessary to imbed short term rewards within the process whether it is studying, physical exercise, healthy eating and many other human behaviors.

What can school teachers and school leaders take away from Fishback's research? Motivating students to learn seems to require some student exploration without guidance as well as opportunities for students to advise others about the topic under investigation, and finally some fun interspersed and enjoyed in the learning process such as laughter with peers and teachers, songs and dances, and creative exchanges of human emotions and discoveries.

In the first article for this edition of the Journal for Leadership and Instruction, Gerard Babo and Douglas Petty examine the growing problem of teachers leaving the profession early in their careers. They looked at social economic conditions and length of principal service as potential indicators of lower teacher retention in New Jersey Middle Schools. Their findings seem counter intuitive and they recommend more precise studies of these outcomes focusing on other variables. Perhaps the motivational variables that Fishback discovered might apply to retention in the profession of teaching.

In our second article, Brian Trapani and Anthony Annunziato examine how teachers view a large instructional change that they have been tasked to accomplish. Their motivation to adopt the change and to implement the elements of Understanding by Design instructional frameworks seems highly connected to collaborative and collegial exchanges that teachers enjoy.

In our third article, Khazima Tahir of Pakistan, and Brian Doelger and Michael Hynes of Long Island examine how inclusive educational opportunities are managed in two distinct high schools. They report on how inclusive education is influenced by the facilitators across the entire school system.

In our fourth article, Kim Glatt Yochai examines the levels of ethical sensitivity, specifically the practice of identifying consequences of actions and options that teachers who have English Language Learners in their classes offer to their students and to which they demonstrate sensitivity. She recommends additional training for teachers at the elementary grades in ethical sensitivity. Read the report to find out why.

In our fifth article, Robin Rosen-O'Leary and Eustace Thompson report on their study of 55 fifth and sixth grade students in a modified science lesson that included an experimental group that received instruction in art techniques to be used in drawing and developing visual notes on the science lesson while the control group used typical note taking and writing within their science lesson. The students who used visual notes and art techniques performed better on the outcome exam. Teachers of art and science could replicate this experimental process in their classes by establishing a collaborative model of instruction.

In our section on research From the Field, Martin Cantor reports on his study of a large suburban community college student population and the predictors of student retention and graduation or transfer to a four year college. Dr. Cantor reports that the likelihood of high failure to complete a program is associated with a student's neighborhood zip code, socio-economic status and grade point average in high school. He concludes that community colleges can identify students likely to fail to complete their studies before they enter the college and they should provide appropriate support and ways to engage students that motivate them to continue their studies at the very outset of the student's experience.

We hope you will enjoy the book review of Rebecca Natow's 2017 publication dealing with higher education rulemaking and the politics involved. Eustace Thompson, an experienced leader in higher education at Hofstra University in New York offers his analysis of Natow's theses in his review of her book.

Lastly, we want to thank peer reviewer Patrick Johnson, Ph.D. of Queens College and editorial board member Sister Nancy Gilchriest, Ed.D. of St. Joseph's College for their many years of service to the JLI as they take on new assignments. Also, we wish to thank Professor Raymond Haberski of Marist College posthumously for his 18 years of service as a peer reviewer. We send our condolences to his wife, Alice, their children Raymond, Alicia and Vicki and their three grandchildren.

Robert J. Manley

Editor-in-Chief

The Influence of a Principal's Length of Service and School Socioeconomic Classification on Teacher Retention Rates in New Jersey Middle Schools

by Gerard Babo, Ed.D., and Douglas J. Petty, Ed.D.

Abstract

This study investigated the impact of a New Jersey middle school principal's length of service and a middle school's socioeconomic classification on teacher retention rates for the 2016 -2017 school year. Surprisingly, the results of a two-way factorial ANOVA indicated that NJ middle schools with a socioeconomic status classification of middle to upper-middle class had the lowest teacher retention rate (m = 85.55%) in schools that housed principals with 16 or more years of experience ($F(21, 168) = 2.677$; $p < .001$).

Introduction

School building principals make a difference and are essential to the success of the teachers, staff and most importantly the students they are charged with leading (Boberg & Bourgeois, 2016; Branch, Hanushek & Rivkin, 2013; Leithwood & Azah, 2017; Leithwood, Seashore-Louis, Anderson & Wahlstrom, 2004; Waters, Marzano & McNulty, 2003). Yet, approximately 25% of the nation's building principals are leaving our public schools on an annual basis and almost 50% of first time principals resign prior to their third year on the job (Harris Interactive, 2013; Fuller & Young, 2008). This principal retention issue is an even larger problem in school districts where student need is greatest - the poor, urban, inner-city schools (Burkhauser, Gates, Hamilton & Ikemoto, 2012).

Some believe this turnover is a direct result of the principal's job becoming untenable over the past 15 years. District, State and Federal policies have changed at such a rate in this age of accountability that the job of a building principal has become almost impossible to do well (Darling-Hammond, Meyerson, LaPointe & Orr, 2010). Needless to say, this leadership turnover has an effect on overall school success, which manifests itself primarily in both teacher and student efficacy (Boberg & Bourgeois, 2016; Leithwood & Azah, 2017).

Limited research in this area seems to indicate that this principal attrition phenomenon has a growing negative impact on school culture and climate, which quite possibly affects a higher rate of teacher turnover that logically influences student academic achievement and attainment (Ronfeldt, Loeb & Wyckoff, 2013). The effect of a high rate of teacher turnover has broad ranging implications influencing new curricular initiatives and developing a culture of teacher professionalism to name just two key areas, which are essential to school growth and sustainable success (Guin, 2004).

Hughes, Matt & O'Reilly (2015) found that in schools where principals provided ongoing staff supportive services that included emotional, cultural and instructional resources, teacher attrition was minimal. However, in schools where principal leadership is questionable, school culture is deficient and classroom teacher connections are strained and fractured, the rate of teacher turnover is found to be quite high. This phenomenon is specifically more evident in schools where poverty is highly prevalent (Simon & Johnson, 2015). Grissom (2011) posited that effective principals could make a difference in keeping teachers satisfied and on the job, particularly in high poverty schools considered at risk. The need then for not only highly effective principals to remain on the job on a consistent and long-term basis becomes vital.

Purpose of This Study

Consequently, the primary purpose of this study was to determine if the length of time a middle school principal serves in his/her school has an impact on teacher retention and if it might differ based on the overall socioeconomic status of the school. Accordingly, the following research question was addressed: What is the difference in teacher retention rates in New Jersey middle schools based on the length of time a principal serves in his/her school and the school's socioeconomic status and does a significant interaction exist between these two main effects?

Methods

This study was a cross sectional design where the unit of analysis for the study was "school." A sample of 200 New Jersey middle schools with 6th, 7th and 8th grade configurations were selected from a cross section of approximately 590 economically diverse school districts (see **Table 1**).

Table 1
Demographic Information on Sample of NJ Middle Schools (n = 200)

School District SES Ranking (low SES = 1; high SES = 8)	Number of Schools (Overall percentage of sample)	Principal Length of Service to School Mean in years (SD)	Teacher Retention Mean percentage (SD)
1 (Poorest)	19 (9.5%)	11 (8.9)	87% (5.7)
2 (Poor)	25 (12.5%)	18 (11.1)	88.5% (3.8)
3 (Lower Middle)	14 (7%)	12 (8.5)	89% (1.5)
4 (Middle)	26 (13%)	13.5 (7.6)	90% (2.7)
5 (Middle)	29 (14.5%)	13 (9.5)	86% (13)
6 (Upper Middle)	31(15.5%)	12 (9)	90% (2.6)
7 (Affluent)	43 (21.5%)	11.4 (8.8)	89% (4)
8 (Most Affluent)	13 (6.5%)	11 (9.6)	88% (3.2)
TOTAL	**200**	**12.8 (9.2)**	**88.5% (6.2)**

School data was obtained from primarily two sources, 1) The New Jersey Department of Education's School Report Card website (http://www.state.nj.us/education/data) and 2) DATA UNIVERSE (php.app.com/agent/educationstaff/search), an independent public record website sponsored and posted by Asbury Park Press, which is part of the USA TODAY network of publications.

Teacher retention data for the 2016 - 2017 school year, and the number of years a school principal had been assigned to and servicing his/her school as of the 2016 - 2017 school year, were collected and analyzed by way of a Two-Way Factorial ANOVA. A Two-Way Factorial ANOVA was used to determine if there were significant differences in teacher retention based on each main effect, principals' length of service and schools' socioeconomic status (SES), and most importantly, the interaction between these two main effects. **Table 2** displays the results of this analysis.

Table 2
Two-Way Analysis of Variance for Teacher Retention as a Function of Principal Length of Service and School District Socioeconomic Status

Variable and Source	*df*	*MS*	*F*	*p*	Partial η^2
Principal Service	3	30.401	.967	.410	.017
District SES	7	32.360	1.026	.415	.041
Principal Service*District SES	21	84.171	2.677	.000	.251
Error	168	31.438			

The results displayed in **Table 2** indicate that no significant difference could be found in teacher retention rates based solely on each main effect, principal length of service or school district socioeconomic status alone. However, the interaction between these two main effects was found to be statistically significant ($F(21, 168) = 2.677$; $p < .001$) with an effect size that would be considered larger than normal, partial $\eta^2 = .251$ (Leech, Barrett & Morgan, 2015).

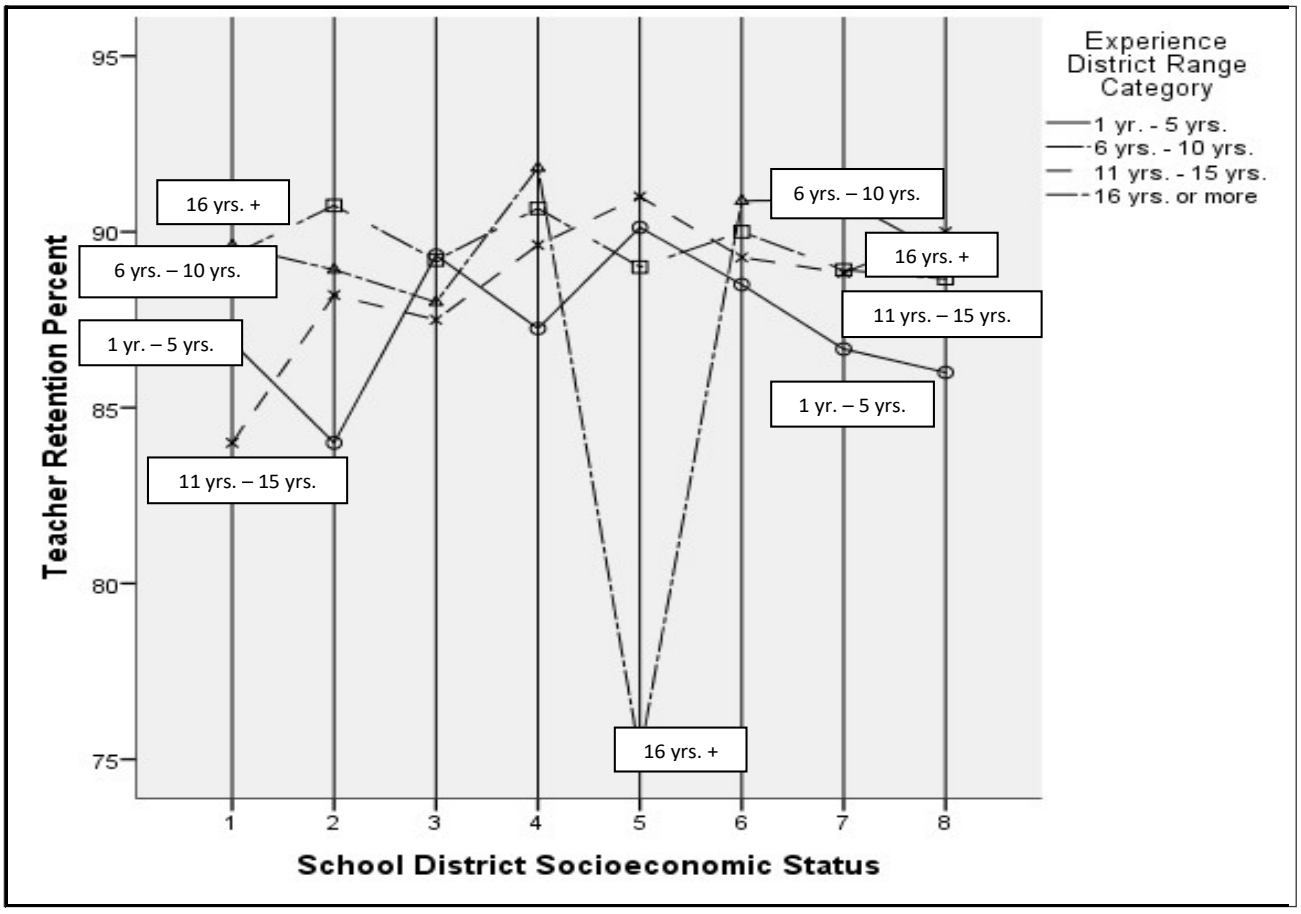
Interestingly, in schools where principals had served 16 or more years with a socioeconomic status classification of 5, which would be considered a typical middle class NJ school district, the lowest teacher retention rate (m = 85.55%) was recorded indicating greater teacher mobility within a school climate or culture that one would assume was stable. The profile plot in **Figure 1** displaying the interaction between these two main effects clearly provides a visualization of these differences.

Based on the Profile Plot displayed in **Figure 1**, it appears that teacher retention is the most stable across all SES strata for principals who have been assigned to their respective school for six (6) to ten (10) years. For principals assigned 11 - 15 years there appears to be a slight increase in teacher retention from the poorest to the most affluent school district. Principals servicing their schools from one (1) to five (5) years appear to vary quite a bit from poorest to most affluent but wind up in the same spot across all strata, which could be an effect of the dynamics of school leadership and developing a new culture.

However, **Figure 1** clearly demonstrates the large variance in teacher retention across SES strata where principals have been assigned to the same school for 16 or more years. In the poorest school district, the retention rate is approximately 89.60% with a drop off to 75.11% for middle-income districts and then an increase to 89.33% for the most affluent districts. Although this phenomenon could be attributed to what might be considered a small sample size for the category (n =19), more research needs to be conducted to explain this curious anomaly.

Figure 1

Profile Plot for Two-Way Analysis of Variance for Teacher Retention as a Function of Principal Length of Service and School District Socioeconomic Status



Conclusions

Trying to postulate a reason for this study's unique finding is a conundrum. One would assume that schools where principals have served the longest should maintain a high level of teacher retention, yet this study reports the opposite. Additionally, school districts where this seems to be the most prevalent are located in average, middle class communities where poverty is not an issue and working conditions are more than likely not to be a factor that contribute greatly to teacher attrition (Simon & Johnson, 2015).

Excluding any methodological issues, one could make the supposition that this finding might be attributed to several sources - leadership complacency, mid-level teacher career advancement, and early retirement to name just a few. Some researchers posit that two major contributors to teacher turnover are a school's organizational structure and the working conditions teachers have to deal with on a daily basis (Ingersoll, 2002; Luczak & Loeb, 2013). The findings reported here strongly suggest a need for follow-up studies using a case study methodology to investigate the reasons as to why teacher turnover is highest among schools that are generally considered the most stable with regards to organization and working conditions. Regardless, with teacher turnover increasing annually and teacher need at its greatest, decreasing teacher attrition is vital to student success. Understanding what contributes to this phenomenon of teacher retention might assist school districts and building principals in retaining and developing quality classroom instructors.

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Crossing the Bridge of Change: Measuring Instructional Change Using the Concerns Based Adoption Model

By Brian Trapani, Ed.D., and Anthony Annunziato, Ed.D.

Abstract

The purpose of the study was to determine the efficacy of a specific instructional change by engaging teachers in reflecting on the change process using the Concerns Based Adoption Model (CBAM) as an instrument of measurement. Data were collected and analyzed using Stages of Concern questionnaires and Levels of Use surveys as well as interviews to determine what methods of interventions are necessary to facilitate instructional change.

Introduction

Leading an initiative with the specific goal of transforming school culture deserves much attention (Fullan, 2002; Muhammed, 2009). An instrument that measures how employees perceive the status of a desired change can provide the district administrators with the feedback to adjust an approach and alter resources to help staff members tasked with implementing the change. Anthony Muhammed (2009) developed four educator classifications to describe how employees react to a change initiative: believer, tweener, survivor, and fundamentalist. Their goals vary respectively from academic success for each student, to solely focusing on organizational stability, to their own emotional needs, or to maintaining the status quo. An assessment of the individual and the collective mindset of employees can provide leaders with information to guide improvement efforts in their schools and districts. Specifically, the use of data from a CBAM can help administrators to identify needs for specific interventions.

The CBAM provides specific data to support the measurement of an identified change, instructional or otherwise, because it utilizes survey data to gather information regarding the employee mindset toward a specific initiative. In order for any instructional initiative to be successful, teachers must have a level of interest in the initiative's success. "Teachers' concerns have been conceptualized as classifiable into two types: concerns about benefit to self and concerns about benefit to pupils" (Fuller, 1974, p.1). Furthermore, Fuller suggested, "Concerns about teaching are expressions of felt need which probably possess motivation for relevant learning. Consequently, any regularities in the concerns of teachers are of interest to teacher educators. If motivation is to be harnessed for learning, curricula interventions should consider the felt needs or concerns of teachers" (p.2). The CBAM recognizes the components of change which need to be identified for successful reform to occur.

The Concerns Based Adoption Model was based on several important assumptions about the nature of change. These assumptions are: Change is a process, not an event. Change is accomplished by individuals. Change is a highly personal experience. Change involves developmental growth in feelings and skills. Change can be facilitated by interventions directed toward the individuals, the innovations, and the contexts involved (Hall & Hord, 1987).

Theoretical Framework

CBAM was selected as the conceptual framework for this study in order to assess the process of implementing change. In this case study, the change was the introduction and implementation of the Understanding by Design (UbD) instructional framework by teachers. The theoretical context for the model can be found in the work of counseling psychologist Frances Fuller's (1969) sequential developmental concept of concerns.

> Fuller conducted research on the concerns of student teachers and developed a model based on her empirical finding that student teachers' concerns moved through a natural development sequence of four stages: unrelated, self, task, and impact. Unrelated concerns are personal in nature and do not address the concerns of the teaching practice. Self-concerns, although focused on teaching practice, are egocentric in nature. Task concerns are logistical in nature, that is, they are directed towards the mechanics of instructional delivery. Impact concerns, the highest level in Fuller's hierarchy, address the impact of teaching practice on students (Young, 2005, p. 49).

Related Literature

Hall and Hord (1987) noted that educational reforms are often not implemented in the time frame envisioned by planners and policymakers. While that may be the result of structure or planning problems, resistance to change is frequently a factor in the timing of implementations (Christou et al., 2004). Both of these observations reinforce the importance of investigating the nature of teacher concerns during the innovation process.

Loucks-Horsley (1996) pointed out that learning brings change, and supporting people during change is critical to help the change take hold. It is, therefore, helpful that the CBAM applies to anyone experiencing change, be they policymakers, teachers, parents, or students. CBAM helps leaders prepare to meet the needs of the adopters. Recent research suggests not all teachers progress through all stages of the adoptive model. Some teachers become comfortable with the innovation (Stage 3) and do not progress to concern regarding impact on students (Stage 4 and beyond) (Malmgren, 2010, p. 73).

Research Questions

When teaching for meaning and understanding is introduced as an instructional change endeavor, how does the application of CBAM help to gather information on the progress of the change initiative? More specifically how do teachers respond to the following questions:

1. What concerns do teachers feel about Understanding by Design?

2. To what extent are teachers using Understanding by Design in their instructional practice?

3. What local interventions are needed to accelerate the pattern of adoption and effective use of the Understanding by Design instructional framework? (Young, 2005 p. 43).

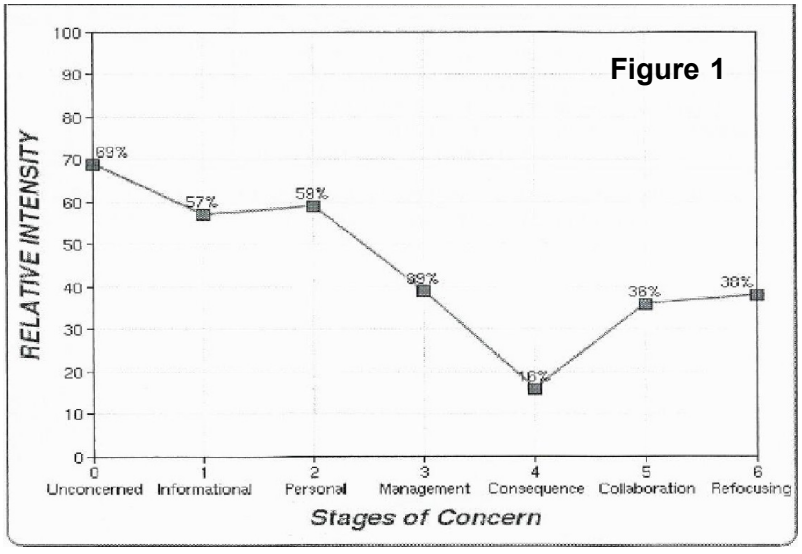
Methods

A mixed methodology of surveys, interviews and observations was utilized in the research data gathering design. Data were acquired to evaluate the efficacy of the UbD implementation plan in the suburban high school setting. Teacher understanding of and level of implementation regarding the UbD instructional framework were investigated through the use of the Concerns Based Adoption Model which included the use of the *Stages of Concern* instrument to evaluate the level of teacher concern with the implementation of the initiative. The concern was measured through three levels: 1. Concern for Self; 2. Concern for Task; 3. Concern for Impact. *Levels of Use* of UbD within instructional planning and practice were measured through survey and interview data. *Local Interventions* to advance the usage of the UbD instructional framework were measured through survey as well. There were 27 secondary school teachers who participated in this case study.

Data Analysis

A survey was used to collect data on the teachers' concerns about Understanding by Design implementation. The data were then graphed on a Stage 0 to Stage 6 continuum (see **Figure 1**). Stage 0 scores provide an indication of the degree of priority the respondent is placing on the innovation and the relative intensity of concern about the innovation. Stage 0 does not provide information about whether the respondent is a user or nonuser; instead, Stage 0 addresses the degree of interest in and engagement with the innovation in comparison to other tasks, activities, and efforts of the respondent. A low score on Stage 0 is an indication that the innovation is of high priority and central to the thinking and work of the respondent. The higher the Stage 0 score, the more the respondent is indicating that there are a number of other initiatives, tasks, and activities that are of concern to him or her. In other words, the innovation is not the only thing the respondent is concerned about. Demographic data and outside judgment are needed to determine whether an individual is using the innovation.

A high score in Stage 1 (Informational) indicates that the respondent would like to know more about the innovation. People with high Stage 1 concerns simply want more information. They are not concerned about "nitty-gritty" details but, rather, want fundamental information about what the innovation is, what it will do, and what its use will involve. Stage 1 concerns are substantive in nature, focusing on the structure and function of the innovation. The score in this stage does not indicate how much knowledge or understanding respondents have. It indicates whether they want to know more. Stage 2 (Personal) concerns deal with what Frances Fuller (1969) referred to as self-concerns. A high



Stage 2 percentile score indicates ego-oriented questions and uncertainties. Respondents are most concerned about status, rewards, and what effects the innovation might have on them. A respondent with relatively intense personal concerns might, in effect, block out more substantive concerns about the innovation. A high Stage 3 (Management) score indicates intense concern about management, time, and logistical aspects of the innovation. Descriptions and interpretations of peak scores on Stages 4 (Consequence), 5 (Collaboration), and 6 (Refocusing) follow directly from the definition of each stage. The higher the score, the more intense the concerns are on that stage (George, Hall, & Stiegelbauer, 2006, p. 33-34).

Seventy-three percent of the Birchfield teachers who responded to the *Stages of Concern* survey completed the *Levels of Use* "yes/no" responses (see **Figure 2**). These questions were asked to get a sense of the extent teachers are using Understanding by Design in their instructional practice. Eighty-five percent of the respondents stated that they are currently using UbD in their instructional planning. Additionally, 91% also believe that they are consistently making instructional decisions based on knowledge of short- and long- term consequences of students, and 87% claim that they consistently re-evaluate the quality of use of UbD and possible modifications to it to achieve an increased impact on students. However, only 48% claim to consistently collaborate with colleagues regarding their use of UbD, with only 63% re-evaluating the quality of UbD to achieve an increased impact as it relates to new federal, state, and/or local instructional goals.

After accumulating data regarding the *Stage of Concern* and *Level of Use* of the UbD instructional framework at the school, a follow up survey was emailed to the faculty at both schools to gather information regarding what *Local Interventions* would need to occur to continue the UbD implementation process. Teachers answered one question, "What kind of professional development do you need in order to advance your uses of the Understanding by Design framework?" There were six options provided: Informational Workshops; Interactive Workshops; Peer Study Groups; Mentoring or Coaching Relationships; Content Experts; Paired Collaboration. For each of those six possible *Local Interventions*, the teachers were asked to select: Lowest Priority; Low Priority; Moderate-Low Priority; Moderate-High Priority; High Priority; Highest Priority. Fifty eight (58) teachers from the High School agreed to participate in the *Local Interventions* survey. This represents 33% of the entire the high school teaching staff and is five more than the 53 teachers who agreed to participate in the initial *Stages of Concern* survey. The responses to the *Local Interventions* survey, when compared to the *Stages of Concern* survey, indicates a significant concern within the high school regarding the next steps of this initiative. The results (**Figure 3**) of the *Local Interventions* survey were based on assigning a number to each response: Lowest Priority =1; Low Priority= 2; Moderate-Low Priority= 3; Moderate-High Priority= 4; High Priority= 5; Highest Priority= 6.

Figure 2: Birchfield High School Levels of Use Survey Results

Question	# of "Yes" Responses	% of "Yes" Responses
Are you using Understanding by Design in your instructional planning?	23/27	85%
If you are not using UbD as part of your instruction, are you planning to acquire more information about UbD at a later date?	9/13	69%
If you are not currently using UbD as part of your instruction, are you actively planning to incorporate UbD into your lessons?	8/13	62%
If you are currently using UbD as part of your instruction, do you consistently re-evaluate the quality of use of UbD and possible modifications to it to achieve an increased impact on students? Particularly as it relates to new federal, state, and/or local instructional goals?	15/24	63%
If you are currently using UbD as part of your instruction, is your approach to master the tasks required to meet your own instructional design needs?	19/24	79%
If you are currently using UbD as part of your instruction, do you give consistent thought to improving its use or its instructional consequences?	18/24	75%
If you are currently using UbD as part of your instruction, do you consistently make instructional decisions based on knowledge of short- and long-term consequences for students?	21/23	91%
If you are currently using UbD as part of your instruction, do you consistently collaborate with colleagues to achieve a collective impact on students?	11/23	48%
If you are currently using UbD as part of your instruction, do you consistently re-evaluate the quality of use of UbD and possible modifications to it to achieve an increased impact on students?	20/23	87%

Teachers in the high school feel most strongly about participating in interactive workshops where teachers can get specific guidance regarding a particular component of the UbD instructional framework. A score of 4 indicates a "moderate-high priority," and the High School scored a 4.31 for Interactive Workshops. The highest priority for the continued implementation of the UbD framework is "Paired Collaboration," where teachers are expected to work through the application of UbD principles with a peer. Peer study groups and content experts to explore big ideas as well as key concepts related to a specific discipline scored at least "moderate-high priority." In addition, "Content Experts" and "Mentors or Coaches to Model UbD" also scored as at least a "moderate-high priority."

Discussion

For the implementation of the initiative to truly succeed, the district should utilize resources such as time during professional development, conference, and other meeting days to address the initiative and the expressed need for paired peer collaboration and interactive workshops. "Many change efforts fail because facilitation and assistance are not provided to all members of the organization…. Frequently, these leaders are without the tools or skills to do the job of supporting and assisting the staff well" (Hall & Hord, 2006, p. 304). The School District superintendent and Board of Education publicly supported the initiative. Resources, specifically time and money, were earmarked for the implementation of the initiative in year one. However as the initiative moved into years two and three, less and less of the resources had been allocated for the UbD initiative.

The teachers should be guided with consistent clear goals emphasizing the initiative as a priority over a period of 3-5 years, and there should be clear expectations regarding the implementation of UbD that focus on collaboration. The high school teachers responded to the initial questions regarding their *Stages of Concern* results by explaining that more common planning time was needed, specifically within the day to prepare lessons. This would prove to be an obvious additional financial cost to the district. However, this desire was reinforced with the results of the *Local Interventions* survey (**Figure 3**), where interactive workshops with an emphasis on the application of UbD principles need to be prioritized.

The facilitators at the High School need to provide opportunities for interactive workshops where specific questions about particular aspects of the initiative can lead to specific guidance regarding the implementation of the initiative. To assist in ensuring that the facilitator is providing the appropriate supports related to a teacher's concern and level of use of the initiative, a more representative sampling of the teachers need to be present when data regarding the initiative are collected annually.

Ultimately using the Concerns Based Adoption Model to measure the efficacy of the implementation of an initiative can certainly increase the likelihood of success as it guides the implementers, facilitators, and organizational leadership. The responsible change facilitator frequently asks: 'Is what I am doing right and best for everyone?'" (Hall & Hord, 2006, p. 305). The change facilitator needs to continue to listen to the feedback that is accumulated through using CBAM and then respond accordingly. "It is neither good nor bad for individuals to have certain concerns profiles. What is good or bad is the types of interventions that are made in response to each diagnostic profile. All interventions must be concerns based. They must be related to each client's current concerns and extent of use, not the change facilitators" (Hall & Hord, 2006, p. 305). During a period of years in which there is support for each individual to cross the implementation bridge, the implementation plan and an effective change initiative can be achieved.

Figure 3: Results of the Local Interventions Survey

Local Intervention	High School
Informational Workshops on UbD: Stand and Deliver	3.55
Interactive Workshops: Emphasis on the Application of UbD Principles	4.31
Peer Study Groups: Study the Principles and Application of UbD	4.09
Mentoring or Coaching Relationships: To model and/or coach the uses of UbD	3.86
Content Experts: To explore the big ideas and key concepts within the context of a specific discipline	4.29
Paired Collaboration: To work through the application of UbD principles with a peer	4.59
Total Participants from Each School	58 participants

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A Case Study on the Ecology of Inclusive Education in the United States

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Abstract

Inclusive education is an approach to mixing special education and general education students in classroom settings to promote diversity, lifelong learning and create a more equitable society. An overview of practices in inclusive education can inform stakeholders of the status of inclusive education, describe the contextual factors which affect program implementation, and make recommendations of practical start-up or improvement steps for inclusive education programs.

A qualitative approach and phenomenological strategy helps to focus on the ecological aspects influencing the implementation of inclusive education in mainstream general education schools on Long Island, New York, USA. Ecological Systems Theory (EST) (Bronfenbrenner, 1979) was used as the theoretical framework for the study. Observation and semi-structured interviews were conducted with 10 participants from two schools to gather data. The investigation revealed that the implementation of inclusive education is influenced by facilitators across the entire ecological system of the schools.

Introduction

In recent years, inclusion of students with special learning needs in general education classrooms has been accepted policy among U.S. general and special educators, disability activists, and parents of children with disabilities. The assurance of all civil rights to individuals regardless of their disabilities is also a focus in policy debates and applied practice. The concept of inclusive education as a holistic reform strategy calls for a single system of education that serves all the children (Mitchell 2005; UNESCO IBE 2008).

Issues concerning 'human rights', 'equal opportunities' and 'social justice' are linked to the idea of inclusive education (Armstrong and Barton 2000, p.1). National and international research generate a deeper understanding of inclusive education where every learner, irrespective of disability, can participate and maximize their potential (Booth 2001; New Jersey Coalition for Inclusive Education 2010).

In the United States, many research studies have been conducted to explore the current practices of inclusive education. Through the passage of a wide range of legislation including Education for All Handicapped Children Act (EAHCA) of 1975, Americans with Disabilities Act (ADA) of 1990, No Child Left Behind (NCLB) of 2001, and most recently, Every Student Succeeds Act (ESSA) of 2015, public policy at the federal level aimed to provide a free and appropriate public education to all students regardless of their disability status. More importantly, research studies conducted in the US reveal some political, epistemological, and institutional factors that have facilitated a more child-centered public education (McLeskey, Rosenberg, and Westling 2009; Kauffman and Hallahan 2005).

On the other hand, research points out that in the name of "education reform," public schools have been transformed into kindergarten-12 pressure cookers. Too many children are required to read before they are able to and have difficulty mastering overly-challenging math skills at far too young an age. This narrowed, accelerated, one-size-fits-all curricula model, reinforced by stressful high-stakes testing, has meant that proven pillars of successful education have been pushed aside. Social and emotional learning, discovery through play, physical activity, academic learning through inquiry have been reduced to allow for more teaching and drills related to state-tested subjects (Kiser 2007).

In this context, inclusion of students with disabilities into general education classrooms has faced many challenges in its implementation among which teacher relationships, proper training for co-teaching, student grouping, and assessments are the major barriers. Ainscow, Dyson, Goldrick and West (2012) argue challenges must be confronted and pose the question "What needs to be done to move policy and practice forward?" (p. 150). To know what must be done, current systems and practices need to be better understood, through the undertaking of quality, in-depth research into inclusive education (Ainscow and Miles 2011).

The *ecology of inclusive education* delivers a framework with which to examine how inclusive education occurs in the school setting. With increased understanding, the current policy and practice can move forward and "make the physical, social, cultural and educational arrangement of schooling better for all" (Slee, 2011 p. 13). The purpose of this investigation is to explore the cultures of two schools, to examine how inclusion occurs and uncover the barriers and facilitators to the implementation of inclusive education.

Inclusive education and Bronfenbrenner's ecological framework

Bronfenbrenner's (1979) conceptualization of the "ecology of human development" provides a useful theoretical framework for conducting the research work on the implementation of inclusion. He proposes that human development is influenced by factors operating at different "systems levels" within a broad, ecological structure. These different levels exert reciprocal influences on one another. For a child with special needs in an inclusive education setting, the four systems describe the interwoven networks of transactions that create an individual's ecology.

The first systems level, called the "microsystem," describes the factors within a child's immediate environment. Any transaction between the child at the center and any one other person is a microsystem transaction (Bronfenbrenner 1979; Duerden and Witt 2010). The importance of the child's actions, reactions, and interactions with others in the microsystem would be determined by others' beliefs and practices; this is useful in understanding a disabled child's development. Thus, interactions in well-running microsystems are considered to be the provision of high quality, friendly, and diverse learning environments for all (Opertti and Bradey, 2011).

The mesosystem encompasses "the interrelations of two or more settings in which the developing person actively participates (such as, for a child, the relations between home, school, and neighbourhood peer groups)" (Bronfenbrenner 1979, p. 25). For example, family members' beliefs about inclusion and the family's relationship with school personnel affects the inclusion process. Similarly, how children with disabilities relate to typical peers in the classroom setting may affect relationships outside class (e.g., invitations to birthday parties). Inclusive pedagogies, practices, and tools imply, among other things, a move away from overloading students with dictating theoretical and academic knowledge towards a focus on active student participation and learning (Opertti and Brady, 2011).

Moving outward, the exosystem consists of settings "that do not involve the developing person as an active participant, but in which events occur that affect, or are affected by, what is happening in the setting containing the developing person" (Bronfenbrenner, 1979, p. 25). The service delivery agency (the school) responsible for an inclusion program provides an example of an exosystem setting.

The macrosystem envelops the micro-, meso-, and exosystems. Bronfenbrenner defined the macrosystem as "consistencies in the form and content of lower-order systems . . . that exist at the level of the subculture or the culture as a whole, along with any belief system or ideology underlying such consistencies" (1979, p.26). All settings at each level operate within a cultural context. The culture of special education, for example, values inclusion as a practice and has been influenced by the movement toward "normalization" (Wolfensberger 1972), by advocacy organizations (DEC, 1993; TASH, 1988), and by federal law. Many families and professionals now endorse the inclusion of children with disabilities in typical classroom or learning settings and for everyday community activities.

Methodology

The purpose of this research was to explore ecological aspects that influenced the implementation of inclusive education in two mainstream schools on Long Island, NY, USA. To explore the phenomena of inclusive education in this context, a qualitative research approach was adopted. "Qualitative research methods enable the researcher "to grasp the meanings of actions, the uniqueness of events, and the individuality of persons" (Walker and Evers 1999:43). Data gathering in this investigation was conducted by means of semi-structured interviews and field observations to ensure that data collected from all the interviewees had a relationship to the actual school and classroom settings (Leedy and Ormrod, 2010).

Face validity applied to the interview open-ended questions that related to experiences participants encountered in their involvement with inclusive education (Struwig and Stead 2001). This method was supplemented by the observation of the classes and school environment to examine how barriers to learning were managed in the participating schools. A checklist was used to verify this information and, where necessary, additional notes were made for integration with data obtained from the interviews. Observations, according to Hartas (2010), also helped to increase the credibility and reliability (trustworthiness) of the study since it was possible to see how educators dealt with learners experiencing barriers to learning. Purposeful sampling was employed to elicit the most information rich sources in the field of research (Leedy and Ormrod 2010:147). Interviews were conducted with a total of 12 participants including two school principals, and 10 school teachers from selected mainstream primary schools.

The interview schedule comprised eight open-ended questions that probed teachers' understanding of current practices, the extent to which these practices encouraged and facilitated inclusion in their respective schools, their experiences with what currently worked well and the challenges they faced in the implementation of inclusive education. All interviews were conducted on a one-to-one basis at a pre-agreed time and were digitally recorded and transcribed. Using a content analysis approach, interview data were analysed thematically. The study adhered to standard

protocols for the ethical conduct of research and received approval before commencing.

Bronfenbrenner's Ecological Systems Theory (EST) was adopted as a useful theoretical framework to investigate inclusion. This theory enabled the exploration of various internal and external factors which interacted and influenced inclusion. EST is considered useful in a naturalistic case study research on inclusive education in that this phenomenon is in relation to real-life contexts (Llewellyn and Hogan, 2000). This is in line with the EST framework that perceives interactions and relationships as 'two-directional' (Bronfenbrenner 1979) and reciprocal, which means that successful interactions depend on interactive partners who deliver and receive services.

The objective of the methodology adopted was to find multiple perspectives in line with EST that focus on the role of subjectivity within collected data and thus the need to consider the perspectives of different people (Bronfenbrenner 1979). EST indicates that different members of a system (in this case, two principals and ten teachers) can influence developmental outcomes. The teachers' perspective was important as it indicated the good connection in the sub-systems as well as the challenges they faced. From an EST perspective parents' views should be included, as they play a major part in providing interactions, thus shaping the degree to which they experience social inclusion or exclusion. In this study, the researchers did not have access to parents.

Finally, conducting observations was compatible with EST to explore the inclusive education phenomenon in relation to the system in which it is embedded. Hence the observations focused on classroom routines and school environments in periods during which students were free to mix and interact with their peers in a natural way.

Findings

From the collective analysis of observations and semi-structured interviews, major themes emerged in relation to inclusive education practices in these two schools at microsystem, mesosystem and macrosystem levels. These interviews and observations revealed an ecological narrative in the implementation of inclusive education practices.

Inclusive Education at the Microsystem Level

Findings at this microsystem level revealed physical learning spaces, resources, classroom practices and interactions that both supported and at times discouraged the students with special education needs in an inclusive education setting.

All the teacher and principal responses confirmed that flexibility in teaching techniques to accommodate different learning styles of students provided equitable developmental opportunities for all learners. Field observation indicated that teachers created a balance between the use of individualized educational plans through teaching materials specially designed for students with special education needs, and through active participation in group work. Some teachers attempted to include all children in all activities by designing classes in such a way that students with special education needs could present their strengths and talents.

In both schools, teachers used alternative modes of assessment. The principals and teachers highlighted the importance of multiple and overlapping collaborations between students with special needs and two or three adults in the classroom who provided timely support for children with special needs. Both schools had enabling structures where the lead teacher assumed the responsibility for the whole group activities and individual instruction. When children worked independently or in small groups, adults circulated in the room to provide individual support.

Observations of the staff indicated resources and services promoted active participation in learning by all students. Students with special needs and teachers who are expected to instruct them require specialized materials, resources, equipment, knowledge, and personal support that specifically address individualized learning. School resources run the gamut from special equipment, technology, materials, teaching manuals, special curricula, wheelchairs, prosthetics, ramps and accessible toilets. Support can also take the form of peer support for students, computer-assisted technology, and paraprofessional support to integrate services. In addition, teachers' flexible use of methodologies in the classrooms helped learners through diverse presentation and manipulation of materials and lesson designs for best individual learning opportunities.

Both school buildings had structural modifications to accommodate the needs of students with limited mobility. All the participants were aware of the importance of those modifications resulting in students' easy access to everything. A principal commented:

> Just imagine if learners with mobility problems have to climb steep flights of stairs without any help to get to the first-floor classrooms …This would put a physical and emotional strain on these students, and it would affect their ability to learn (P1).

Both schools had self-contained classrooms for students with severe disabilities. These students had different physical spaces which reduced their opportunities with peer interaction. When probed about this segregation, a teacher responded:

> Severely handicapped students might do better in some more protected or appropriate setting (at least sometimes). They are segregated into special classrooms because they can receive more help than overworked teachers in typical classrooms can provide (T5).

IE at mesosystem level

The findings at the mesosystemic level indicated the nature of different collaborations and cooperation to promote the student learning. Field notes revealed multiple levels of collaborations among staff members.

An analysis of the interview data revealed that classroom teachers and principals recognized the value of collaboration and identified a range of benefits from these collaborations such as better and creative approaches to teaching students, discussing the curriculum, and regular communication about student progress at different levels.

A teacher commented:

> I think that sometime while I teach a student with special needs, I get struck and wonder what happened. Then our psychologist intervenes, and we work together to sort this out (T3).

School observations, and principals' and teachers' responses pointed out organizational features that supported teaming among staff. The schools has a fixed room for the team of personnel including psychologist, nurse, speech therapists, special education teachers, and general education teachers where they sit together and talk about the educational planning of the students with special needs. The interview responses indicated that the meetings times were scheduled informally and many teachers actively allocated time for collaborations.

Participants of one school identified some challenges such as some parents did not take active interest in the education of their children with special education needs, and they relied upon the school for the progress of their children. A principal commented:

> Some parents are disengaged and hard to reach...I think that here in the US there are some cultural and language barriers which prevent parents from creating a partnership with schools. Some parents also lack the skills necessary that enable them to advocate for their child's needs (T1).

The school principals believed that parental involvement was very crucial for the learning of students with special needs in an inclusive education setting. Thus, school principals attempted to arrange activities to involve parents in all aspects of a child's learning.

IE at the exosystem level

The findings at the exosystemic level indicated that the school administration structures, school rituals, school policy, and school procedures have enabling or disabling effects on the growth of students with special needs in that system.

Both school staff members made efforts to support students with special education needs by arranging events for all students. For example, a teacher reported, 'We organize kids' visits to parks, museums, and also arrange fun activities such as let's have fun in the snow break". The school provided musical instruments and has offered students with special education needs opportunities to display their skills in choir festivals. By participating in the school choir and the orchestra, students with disabilities increased their participation in school life.

Teachers and principals were questioned about the ways these events were carried out and amount of help they received from different support groups. The response of one school indicated that they needed more parental support which they did not always receive. However, the principal of the other school used different approaches to design events and activities that ensured students with disabilities were also included. For instance, the school and teachers of this school involved families in after-school activities. The principal described the positive impact of these activities on the development of students with special needs. These parents worked in close collaboration with school teachers. This program was designed to augment the family support provided by classroom staff members within center-based preschool programs. The principal elaborated that this program had strengthened family-community relationships. The parents already working in the program provided information and supported other families who were receiving early intervention services in the same community. The parents of children with disabilities acted as a liaison between families and professional staff, the agency, and the broader community. Teachers reported that families who participated in this after school activity program benefited in multiple ways such as getting information about different disabilities, resources, placement options, legal rights, transition, and self-help skills training. A teacher commented:

> I think these programs develop parenting skills. Parents are provided support and information, which in turn has helped them to provide better service and advocate for their children (T7)

However, teachers reported that it was difficult to have all the parents of children with disabilities in such programs.

IE at Macro level

School observation along with teachers' and principals' interviews revealed some factors that existed outside the physical environment of the school that influenced the inner systems within the framework and, consequently, the learner at its center.

At this macrosystem level the schools' mission statements, field notes and interviews indicated beliefs, values and subtle norms that promoted an accepting, tolerant and positive environment for all students. The field notes reflected the culture of both schools which indicated a willingness to struggle to sustain inclusive practices. The dignity of students with special needs was respected.

The students with the disabilities pursued the same learning outcomes as the students without disabilities. In order to respect privacy, staff discussed students' personal history, medical needs and other sensitive issues out of the earshot of the students. Students with disabilities worked on the same level content standards as typical peers.

The findings indicated that principals and teachers made sure that students with disabilities should not be discriminated against, rejected, labelled, and stereotyped by their peers as a result of them being different. In both schools, principals displayed leadership qualities by their behavior and example. Field notes illuminated the leadership behavior of the school principal:

> She warmly welcomed the school kids as they stepped out of the bus. She showed empathy especially towards the students with special education needs. A student with the special need (emotional and behavior disorder) was looking a little dejected and she hugged him. This made a flicker of smile on the child's face. Another child with down syndrome came running towards her. He appeared to have already developed intimacy towards her. The principals' rapport with the students with special needs was remarkably felt. (Field notes)

Principals explained that implementation of inclusive education became challenging as schools operated in tightly controlled education systems with high levels of accountability and expectations for continued improvement. Both principals exhibited their understanding and acknowledgement of diversity and differences. Both principals demonstrated their priorities to hire competent and skilled professionals for students with disabilities in an inclusive setting. Principals and teachers attempted to create a culture of inclusion and acceptance in the school through displaying posters and charts on soft boards and walls about the themes of tolerance, appreciation of diversity and difference, and anti-bullying and care for others. In both schools, student recital of the national pledge without invoking any religion makes the environment of the school more inclusive and flexible.

Discussion

The purpose of this research work was to investigate inclusion and explore various factors that interacted and influenced inclusion in these two mainstream schools using Bronfenbrenner's EST theoretical framework. In recognition of the time-bound nature of the study and small sample size, the findings are not representative of inclusive education practices in the schools throughout the United States. However, the findings of this study illuminate some key issues of inclusive education practices that have implications for school and classroom practice.

First, the findings of this study indicated that interaction among the subsystems uncovered some barriers and facilitators to the implementation of inclusive education. Teachers and principals felt that facilitators had the potential to inform school practice and improve educational outcomes for children with special education needs. Second, respondents identifed specfic barriers to implementation of inclusive education such as a lack of parental support and variation in perceptions for the appropriate placement of students with special needs in a segregated setting.

It is widely accepted that factors in a child's micro system such as school teachers, classroom practices, family involvement and support are important for the success of inclusive programs (e.g., Palmer, Fuller, Arora, and Nelson 2001; Salend 2006). The findings of this investigation indicated that these two mainstream schools were generally very accommodating and user-friendly microsystems for learners with special needs. The efficiency of these microsystems was enhanced by structural modification among the participating schools to accommodate the needs of learners with limited mobility.

In addition, teachers employed a variety of teaching techniques to accommodate diverse learning styles of learners and provided equal development opportunities for all learners and used alternative modes of assessment. The literature indicates that for pupils with special education needs, teacher collaboration can maximize access to a wider range of instructional options and improved academic outcomes (Hang and Rabren 2009). Within the microsystems of these schools the child with disabilities was viewed as a developing individual who needs to have conducive environments to grow. However, the current study identified that in one school the micro system had a segregated setting for children with severe disabilities. In that school, students with severe disabilities were not mainstreamed even for non-academic activities such as playing games, taking lunch, listening to music, dancing and other physical activities. The lead teachers explained that children were segregated into special settings because they could receive more help than overworked teachers in typical classrooms could provide. It was noted that students with severe special education needs in a self-contained setting in that school did not participate in other activities with their peers without disability. The microsystem has some invisible assumptive barriers for the growth of those students in that system. For instance, a special education teacher said "the children in self-contained classrooms are kept separate in all the activities because they create a mess for themselves as well as for others."

The findings of this study indicated that providing services to students with severe disabilities with their non-disabled peers in the general education classrooms emerged as a challenge. Though federal policy in the US has reinforced the inclusive practices and many schools have taken concrete steps to implement those practices for the positive growth of students, the segregation of students with severe needs for more individualized and confined instruction continues to be an accepted choice in spite of its reported disadvantages (Falvey, 2004; Agran, Cavin, Wehmeyer and Palmer 2006).

Researchers confirm that if the nature and severity of the student's disability prevent him/her from achieving these learning goals in a regular classroom setting, the student would be placed in a more restrictive environment, such as a special school or a homebound or a hospital program (Turnbull, Turnbull, Shank, Smith, & Leal, 2002). On the other hand, the research also recommends that student with special education needs should not belong to any other separate, specialized environment based on the characteristics of their disability (Halvorsen and Neary 2009).

Differences of perceptions on the placement of students with severe special education needs could be the result of many factors such as school policy, general attitudes towards disability and overall societal or community environment. More broadly, the findings of this study indicate that while national and international policy for inclusive education has been given a strong voice, still a more critical review of dimensions of inclusive practice, particularly the professional presumptions on which it is based is needed (O'Connor, Hansson, and Keating 2012).

No studies conducted since the late 1970s have shown an academic advantage for students with intellectual and developmental disabilities educated in separated settings (Falvey, 2004). Wehmeyer, (2006) identified the general education classroom as the optimal place where access to general education curriculum occurs. There are some cases where a self-contained setting will best serve the academic needs of a special education student. In these cases, while the academic subjects may be taught best in a self-contained setting, it is important to include the students in general education classes and settings, such as art, physical education, music, lunch, and recess. The aim of the self-contained setting, for some students, is to give them the opportunity to learn the most they can - and perhaps move into an inclusive setting - even if it is only for a subject or two until they can move in permanently. The presence of students with disabilities provides a catalyst for learning opportunities and experiences that might otherwise not be the part of curriculum, especially related to social justice, prejudice, and equity issues (McGregor and Vogelsberg 1998).

The nature of the different collaborations and cooperation between relevant persons to promote the student learning at the microsystemic and mesosystemic level were identified as the most important factor to promote inclusive practices. Inclusive education required a high percentage of open learning, such as working with a weekly schedule for individual students, different learning stations, differentiated instruction and discussion groups (Kourkoutas and Raul Xavier 2010; Poon-McBrayer and Wong 2013; Singal 2006).

In these two schools, collaboration among school staff helped to create a positive environment for promoting inclusive education practices such as instructional planning and classroom routines, communication about instructional methods and diagnosis of different special needs with the involvement of different experts enabling an eclectic approach and multi-level interventions (cognitive, socio-emotional and behavioral). Collaboration among diverse staff proved to be the main factor fostering a positive inclusive practice in support of previous research conducted by Kourkoutas 2007; Rose and O'Neill 2009).

Given that inclusive practice depends also on the collaboration of different persons related to students with special education needs, the findings that parents are insufficiently engaged indicate barriers to more successful implementation of inclusive education in these two schools. The current study indicates how important it is to create parent partnerships with the schools. Engaging the families of both general and special education students should be a top priority for all schools. According to Digman and Soan (2008), children who are negatively influenced by their home environments struggle to meet academic demands and to manage their relationships with others. Parents of students with disabilities look for positive attitudes, good educational experiences, and acceptance of their child among educators (McGregor and Vogelsberg 1998). The schools should provide multiple opportunities for parents to understand features of inclusive programs. The provision of an opportunity for parents and family members to ask questions and share concerns about their needs and priorities in a supportive and non-judgmental environment goes a long way toward building a collaborative relationship with the family.

Conclusion

This study showed that two schools on Long Island handled their inclusion classes in different ways. In both schools, we conclude that our schools depended on collaborative practices and a positive climate to provide the best learning opportunities possible for the students with and without disabilities.

Every school should provide the teachers and other support staff an opportunity to collaborate regularly. During this time, they can plan their lessons together and devise student-centered lessons and activities. Each teacher should have an equal role in creating the lesson.

Administration should also provide time where the co-teachers, school psychologist, social workers, guidance counsellors, and administration can meet to discuss the individual and group needs of the students. Professional development should be provided to the schools to promote various forms of effective co-teaching methods.

When we focus on a child's growth over time; whether it is a child in an inclusive setting or not, school districts must become reacquainted with child development and how and when children learn from a developmental perspective. An inclusive setting is paramount to not only offer opportunities for social, emotional and intellectual growth, but teachers and practitioners must never forget to meet children "where they are" in their development.

Finally, it is crucial that parental involvement for all students be a priority of the school. The school administration can foster this by holding informational nights, game nights, encouraging parental involvement in the Parent Teacher Association (PTA), and providing parents with resources that they can use at home to address the needs of their children.

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Identifying the Consequences of Actions and Options and Dimension of Teachers' Ethical Sensitivity at Various School Levels: Implications on English Learner Student Achievements

By Kim Glatt Yochai, Ed.D.

Abstract:

English Learner (EL) students in the United States are historically lower achieving students than their native-English-speaking peers. There are a number of contributing factors for the achievement gap. In recent years, the U.S. Department of Education has undertaken various initiatives to address some of the known factors to improve education for these students and minimize educational disparities, one such initiative being the Every Student Succeeds Act (2015). Researchers have suggested that among the challenges many ELs face are others' misunderstandings of and lack of sensitivity to the academic and social needs of ELs. One area explored marginally in the education arena that could provide valuable insight is ethical sensitivity that has been associated with effective teaching (Krashen, 2003; Noddings, 2005).

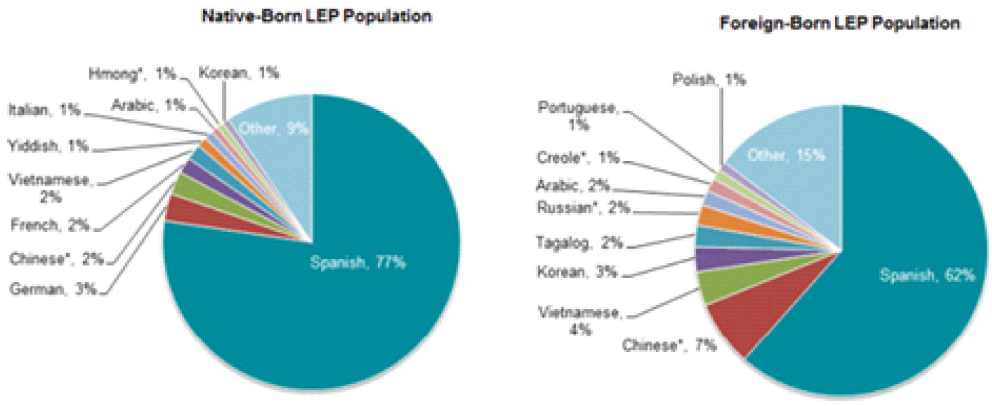
This paper covers an analysis of levels of self-reported ethical sensitivity by teachers of the growing number of ELs in the mainstream classroom utilizing statistical research among teachers from the New York City suburbs of Nassau and Suffolk Counties. The findings indicate that teachers of ELs at high schools and middle schools have more ethical sensitivity compared to teachers of ELs in elementary schools. Based on the findings, further professional development of education professionals in ethical sensitivity training seems warranted among elementary teachers.

Introduction

This paper covers the degree and nature of ethical sensitivity among teachers of EL students in the mainstream classroom, and how school level may be a key factor for the achievement of these individuals that are learning English as a new language.

Teaching at its core is considered a caring and moral practice (Noddings, 2005). Ethical sensitivity is the ability to perceive and interpret events and note situational cues in a moral way (Bebeau, Rest, & Narvez, 1999), and visualize alternative actions in response to the situation in ways that lead to ethical action, based on seven dimensions as interpreted by Narvaez, Endicott, and Bock (Tirri & Nokelainen, 2011). These dimensions fall in the domain of critical components in the effective teaching of ELs (Krashen, 2003). The ethical sensitivity dimension of Identifying the Consequences of Actions and Options as perceived by teachers of ELs in the mainstream classroom is the focus of this paper.

Figure 1. Top Ten Languages Spoken by Native- and Foreign-Born Individuals (U.S. Census Bureau, American Community Survey, 2013)



Background and Significance of the Study

In the autumn of 2015, nearly five million public school students in the United States were ELs, amounting to 10% (National Center for Education Statistics [NCES], 2018). **Figure 1** shows the vast range of home languages for the native and foreign born population with limited English proficiency (LEP).

Statement of the Problem

According to Zong and Batalova (2015), most of the population with limited English proficiency in the United States has been less educated than the English proficient-population. The academic achievement of ELs in the United States has been far below their non-EL peers, as evidenced by math and reading proficiency levels and lower high school graduation rates. Recent data indicates that 43% of fourth grade ELs scored below basic in math compared to 15 % of non-ELs. The gap continues into the eighth grade with 69% of ELs and only 26% of non-ELs scoring below basic in math. The difference is more dramatic on English Language Arts (ELA) assessment which relies entirely on reading, writing and language skills. In New York State, achievement in math and reading among ELs is equally alarming (**Figure 2**).

Not surprisingly, low scores translate into graduation rates below their English speaking peers. In 2015, the National Center for Education Statistics reported that ELs had the lowest graduation rate of all subgroups. With less than two-thirds of ELs graduating in New York State, ELs were about 20 percentage points below the national graduation rate (**Figure 3**).

The English proficiency levels of ELs in New York are revealed through their performance on the New York State English as a Second Language Achievement Test (NYSESLAT). Consequently, ELs might receive English as a new language (ENL) instructional support based on scores in accordance with state mandates. ELs with higher proficiency levels received much of their ENL instruction in the mainstream classroom, proportionate to their proficiency level. As an outcome of the 2016 NYSESLAT results, over half of all ELs received all ENL instruction in the mainstream classroom (NYSED, 2015, 2016). Performance outcomes and mandated instructional settings are represented in **Figure 4.**

The shift over the last half decade in integrating ELs more into the mainstream classroom (NYSED, 2015) may have a detrimental impact on ELs. Often mainstream classroom teachers are provided with inadequate tools and training to effectively support ELs' learning (Gandara, Maxwell-Jolly, & Driscoll, 2005). The achievement data, along with research and theory on second language acquisition and education of ELs, was the impetus for the examination of a possible connection between the ethical sensitivity of teachers of ELs and ELs' academic performance.

Figure 2. Percent of English Language Learners Scoring 2, 3, or 4 on the 2016 New York State Math & English Language Arts Assessments (NYSED, 2016)

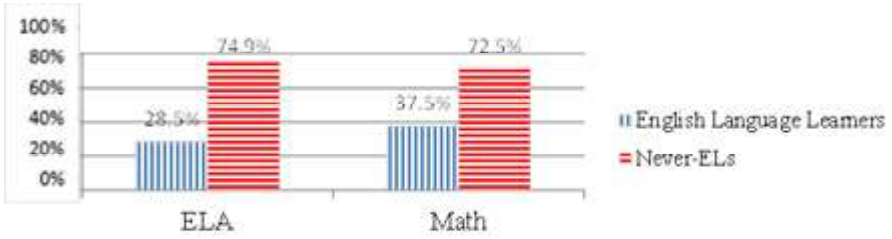
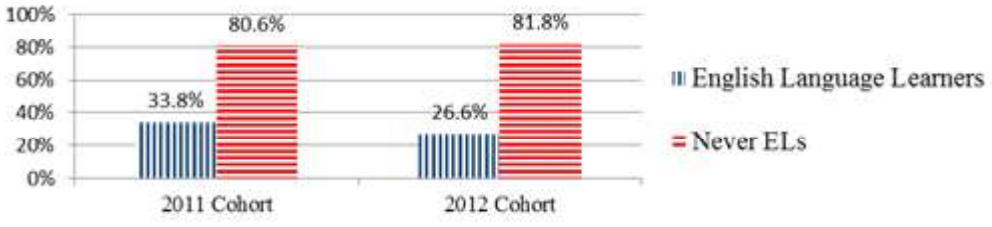


Figure 3. 2015-16 New York State English Learner Graduation Rates (NYSED, 2016)



There are links between ethical sensitivity and the practice of teaching, depicted in **Figure 5** (Kuusisto, Tirri, & Rissanen, 2012). Gholami and Tirri (2012) depict the specific dimensions of ethical sensitivity and their link to teaching in **Figure 5**. Despite these referenced links, there was a dearth of research on ethical sensitivity in the education domain, with none attainable that specifically involved ELs in the United States. This study references Tirri and Nokelainen (2011) who based their Ethical Sensitivity Scale Questionnaire (ESSQ) on the dimensions as interpreted by researchers Endicott, Narvaez, and Bock (2003) as well as operationalization of ethical sensitivity by Narvaez (2001).

Design and Methodology

Survey data was collected from elementary, middle, and high school teachers using a quantitative Likert scale. The sample population of participants included public school teachers (*N* = 370) from Nassau and Suffolk Counties of Long Island, a suburb of New York City. This sample represented about one percent of the target population of elementary, middle, and high school teachers on Long Island, estimated at 35,242. A power sample analysis indicated a desired sample of 380 participants. The criteria for selection included respondents that are elementary, middle, and high school teachers from public schools on Long Island, identified as having 10% or more ELs among the total student

Figure 4. Proficiency Levels of ELs based on performance on 2016 New York State English as a Second Language Achievement Test and related NYS-Mandated setting for ENL support services for 2017 school year (NYSED 2015, 2016)
Note. Entering is beginning level; Commanding indicates attained proficiency/entitled to two additional years ENL services (Mntrm = Mainstream; clssrm = classroom)

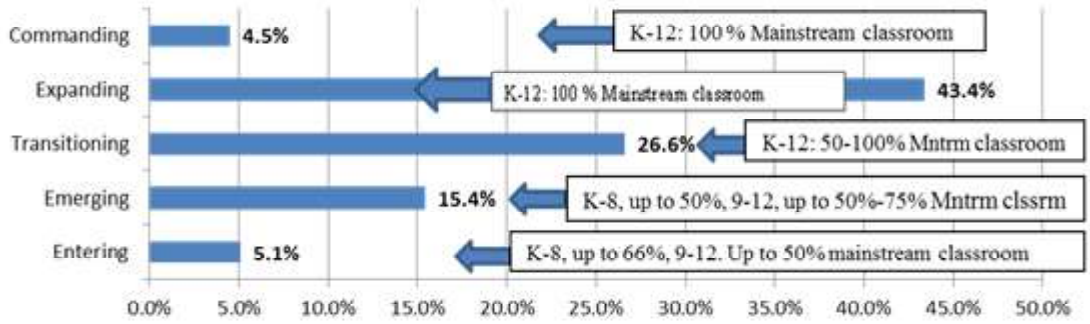
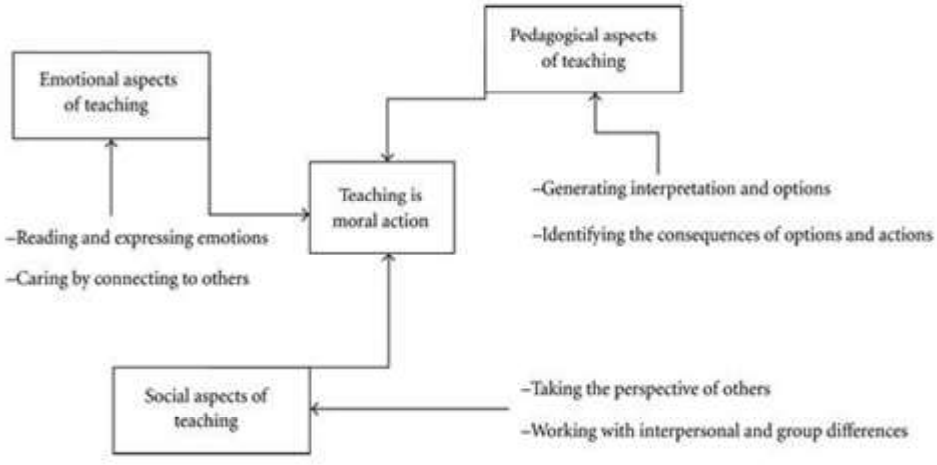


Figure 5. Dimensions of Ethical Sensitivity and Link to Teaching



population, according to the 2016-17 New York State Comprehensive School Report Cards. The 10% criteria approximated the national average for suburban areas and provided a substantial base from which to sample in the selected area. In suburban areas of the United States, ELs constituted an average of 8.9% of public school enrollment (NCES, 2018).

Table 1 presents the 30 districts of Long Island with 10% or more ELs among the student population (NYSED, 2017). The sample generalized the public school districts of Long Island with more than 10% ELs among the districts' student population.

The quantitative survey was comprised of 26 demographic items probing teachers about themselves and their EL students. To evaluate participants' degrees of ethical sensitivity, demographic questions were followed by the 28-item Ethical Sensitivity Scale Questionnaire (ESSQ) developed by Tirri and Nokelainen (2011), which was determined to be valid and applicable for multi-cultures and backgrounds. The participants in the survey responded to statements on a 5-point Likert scale associated with Identifying the Consequences of Actions and Options dimension along with other dimensions defined for ethical sensitivity, revealing significant findings pertaining to the self-perceived degree of ethical sensitivity by teachers of ELs in various school levels.

By way of multiple studies conducted over the course of a decade, the developers of the ESSQ and additional researchers have performed analyses on the psychometric qualities of the instrument with respect to its reliability and validity (Tirri & Nokelainen 2007, 2011; Gholami & Tirri 2012; Kuusisto, Tirri, & Rissanen 2012). Considering reliability as the proportion of the true score versus what is observed, researchers typically defer to the time-tested Chronbach's coefficient alpha, which suggests any alpha below .60 to be unacceptable, .80 to be good, and .90 or above to be outstanding (Meyers, Gamst, & Guarino, 2013). The Cronbach's Alpha coefficients in Gholami and Tirri (2012) revealed a sufficiently high overall reliability (α = .84).

Validity of the ESSQ was also examined and refined via exploratory and confirmatory factor analyses in more than one study, due to some indication that the instrument might have biases deeming it culturally invalid (Gholami, Kuusisto, & Tirri, 2015). Based on these results of validity using Spearman's Rho nonparametric correlation coefficient, further evaluation using exploratory factor analysis was deemed unnecessary as the items measuring ethical sensitivity did not share enough common variance.

Inferential statistics were used to determine if there were mean differences in the criterion variable(s), degree of ethical sensitivity, and/or dimension of ethical sensitivity, which were dependent on the predictor variable of teachers'

Table 1

Long Island NY Public School Districts with 10% or More English Learners Populations

School District	County	% ELLs	School District	County	%ELLs
Amityville	Suffolk	22%	Mineola	Nassau	11%
Brentwood	Suffolk	32%	Montauk	Suffolk	10%
Bridgehampton	Suffolk	18%	Patchogue - Medford	Suffolk	13%
Central Islip	Suffolk	30%	Riverhead	Suffolk	24%
Copiague	Suffolk	17%	Roosevelt	Nassau	26%
East Hampton	Suffolk	18%	South Huntington	Suffolk	17%
East Quogue	Suffolk	16%	Southampton	Suffolk	17%
Freeport	Nassau	20%	South Country	Suffolk	10%
Glen Cove	Nassau	17%	Southold	Suffolk	13%
Greenport	Suffolk	17%	Springs	Suffolk	15%
Hampton Bays	Suffolk	22%	Tuckahoe Common	Suffolk	26%
Hempstead	Nassau	39%	Uniondale	Nassau	20%
Hicksville	Nassau	11%	Wainscott	Suffolk	31%
Huntington	Suffolk	19%	Westbury	Nassau	34%
Lawrence	Nassau	20%	Wyandanch	Suffolk	28%

Note. Respresents 24% of the 127 Long Island districts (public and charter schools only)

[2]Source: NYSED (2017)

Table 2

ANOVA for Teachers' Dimension of Ethical Sensitivity and School Level

Dimension	School Level	*N*	*M*	*SD*	*df*	*F*	*p*
Identifying the	Elementary	138.00	3.77	0.62	2.00	5.12	0.01
consequences of	Middle School	63.00	4.02	0.58	360.00		
actions and	High School	162.00	3.98	0.71			
options	Total	363.00	3.91	0.66			

Table 3

Scheffe Post Hoc Comparisons for Teachers' Dimension of Ethical Sensitivity by School Level

	(I) School Level	(J) School Level	*Mean D.*	*SE*	*p*
Identifying the consequences of actions and options	Elementary	High School	-.21209*	0.08	0.02
		Middle	-.25751*	0.10	0.04
	High School	Elementary	.21209*	0.08	0.02
		Middle	-0.05	0.10	0.90
	Middle	Elementary	.25751*	0.10	0.04
		High School	0.05	0.10	0.90

school level. Additionally, variances were evaluated using one-way analysis of variances (ANOVA) and subsequent Scheffe post hoc tests.

Results and Analysis

The following research question was assessed: Will there be differences in ethical sensitivity of teachers of ELs at various school levels - elementary (*N* = 138), middle school (*N* = 63), and high school (*N* = 162). To properly address the research question, outliers were eliminated. The means were similar across the dimensions. The study revealed ethical sensitivity of teachers of ELs in the mainstream classroom and school levels. Ninety percent of the teachers who participated in the current study reported having ELs in their classroom, although nearly the same percentage indicated not having certification in Teaching English as a Second Language or Bilingual Education.

A one-way ANOVA was conducted to evaluate the differences in ethical sensitivity of teachers among those at various school levels, the predictor variable, among other dimensions of ethical sensitivity, the criterion variable. Results (**Table 2**) indicated significant differences in the dimension of Identifying the Consequences of Actions and Options, $F(2, 360 = 5.12)$, $p = 0.01$.

Multiple comparisons of the Scheffe post hoc tests determined the source of the specific mean differences. The results in **Table 3** revealed strong significance in the dimension of the focus herein, Identifying the Consequences of Actions and Options. The perceived levels of ethical sensitivity in this dimension among middle school teachers ($p = .04$) and high school teachers ($p = .02$) was significantly higher than that of elementary school teachers.

Summary of Findings

The study's findings were based on the analysis of data collected on the nature and degree of ethical sensitivity of the sample population. Descriptive statistics provided a sense of levels of self-reported perceptions of overall ethical sensitivity among elementary, middle, and high school teachers in select school districts of Long Island. The overall mean for teachers' ethical sensitivity indicates respondents tend to agree with the Ethical Sensitivity Scale statements. Ethical sensitivity was investigated and compared by teachers' employment at various school levels. The middle and high school teachers had significantly higher self-reported scores in the Identifying the Consequences of Actions and Options dimension compared to that of elementary school teachers. Teachers' self-reported scores in this dimension are still in the range that indicates agreement with the statements on the scale ($M = 3.91$, $SD = 0.66$), although lower than the overall self-reported ethical sensitivity ($M = 4.22$, $SD = 0.40$) and that of other dimensions on the scale.

The significant findings of ethical sensitivity in Identifying the Consequences of Actions and Options dimension among teachers of ELs in high schools and middle schools versus elementary schools could be attributed to

the nature of ethical situations that might arise among a population of older students in middle and high school levels. Further, with the nature of the more mature situations and choices faced by their secondary students, it is reasonable to infer that secondary level teachers have a greater awareness and recognition of ethical matters, as probed by statements in Identifying the Consequences of Actions and Options dimension. Also, these secondary teachers might have a stronger sense of their own biases, as a result of being in the midst of maturing and more independent students awakening their sensitivity to broader personal and social choices.

Recommendations

The current study has implications for future practice in a number of ways. There is room for improvement that may be accomplished through the following key recommendations:

1. Meaningful character education programs should be developed further at the elementary school level.

2. District administrators should participate in and encourage professional development among their faculty to support moral decision making at all levels.

3. Ethics classes should be mandated in school curricula.

4. Further research in different educational contexts, including teaching with additional exploration into higher education and adult education should be explored, given the relationships discovered with the criterion variable of teachers' school level.

Conclusion

The research discussed serves to shed valuable light on the abstract topic of ethical sensitivity, which had been explored marginally in the context of education, and apparently not at all in the education of ELs after thorough investigation. With the burgeoning population of culturally and linguistically diverse students expanding within public schools across the nation and the myriad of challenges they and those who educate them face, ethical sensitivity matters if the educational process and its beneficiaries are to succeed in molding students into valued and valuable citizens. The success and future of ELs rests in the hands of government policy-makers, school boards, administrators and the teachers who look to these decision-makers for support and guidance.

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STEM to STEAM: Effect of Visual Art Integration on Long-Term Retention of Science Content

By Robin Rosen-O'Leary, Ed.D.
and Eustace G. Thompson, Ph.D.

Abstract

The current focus on STEM education is based on the idea that science, technology, engineering and math be taught in an interdisciplinary and applied approach in grades K-12. There is growing attention to integrating the arts as an equal partner to STEM learning (STEAM). The purpose of this cluster random sample experimental study was to examine the effect of visual art instruction, specifically drawing, on long-term retention of science content. Fifty-five fifth and sixth grade students participated in this study, 31 in the experimental group and 24 in the control group. Both groups received instruction based on a modified science lesson developed by Arizona State University in cooperation with the National Aeronautics and Space Administration. The experimental group received instruction on art techniques to be used for drawing and the development of visual notes while the control group used traditional note taking and writing. A delayed post-test revealed that the drawing group scored significantly higher for retention of content. Implications for authentic arts integration revealed by this study suggest that the arts play a significant role in learning and content retention in art and science. More significantly, the participants in this study were at the level of proficiency and labeled gifted (minimum IQ of 130), demonstrating that arts integration is effective with a more diverse population than marginalized students studied in previously investigations.

Overview

Arts Integration is an approach to teaching in which students construct and demonstrate understanding through an art form. Students engage in a creative process which connects an art form and another subject area and meets evolving objectives in both (Silverstein & Layne, 2010). Burton, Horowitz and Abeles (1999) describe arts integration as balanced teaching in and across disciplines, collaborative and practiced with an awareness for learning possibilities beyond each discrete subject area. The arts are often viewed in a supportive role subservient to the high stakes subject areas (Mishook & Kornhaber, 2006). This perception of the arts fails to explore the significance they may hold for the development of the whole child.

STEAM education is a shift from traditional educational philosophy based on standardized test scores to a focus on the learning process where connections are made between standards, assessments, lesson design and implementation. Ghanbari (2015) and Mishook & Kornhaber (2006) argue that the arts are not supplementary and must be viewed as equal to other content areas. The proliferation of educational organizations casting a critical lens on STEAM education provides a foundation for research in experiential learning opportunities. The STEAM movement may shed light on role of the arts in developing a student who embraces learning and is able to retain information long term through his/her own mean making. However, few experimental studies have been conducted to support arts integration and none utilizing exclusively visual arts. In the absence of empirical evidence to support STEAM initiatives as an effective means of increasing science, technology, engineering, and mathematics knowledge among students the integration of the arts, in particular the visual arts, begs further examination.

Literature Review

Research studies support the relationship between drawing a visual representation (imagery) and comprehension that plays an important role in memory and cognition. Images are processed at a deeper level through dual coding that promotes increased comprehension and strengthened memory. Drawing was found to provide an individual process of consciousness and synthesis of thoughts and remembering. It may be the creative act or process that is the source of processing benefits where the act of physically making images is a means through which to encourage remembering and visualization (Cohen & Johnson, 2012; Rosier, Locker & Naufel, 2013; Minichiello, 2012).

Research suggests that focused training in the arts can improve cognition through its ability to strengthen the brain's attention system and increase cognitive capacities for attention, memory, and learning in general (Patterson, 2015). The inherent characteristics of the arts provide opportunities to acquire knowledge (Koroscik, 1984) and naturally support

a variety of long-term memory effects well known in cognitive psychology. One characteristic, proposed by Rinne, Gregory, Yarmolinskaya, and Hardiman (2011), as an effective way to increase retention of content through the long-term memory factor is pictorial representation. Pictorial Representation is described as the memory factor related to pictorial representation, commonly known as the picture superiority effect, that results in improved memory as pictures are processed more conceptually than words (McBride & Dosher, 2002). It is through the perception, appreciation and production of the aesthetic experience in art and interpretation that students gain retention benefits (Rinne et al., 2011).

Koester (2015) in a qualitative study concluded that drawing provided the pathway for previously failing, marginalized students to become more engaged and better remember content. In a 2012 quasi-experimental study, Cohen and Johnson found that the use of imagery creation (drawing) positively affected science vocabulary retention. Research by Wammes, Meade and Fernandes' (2016) examined encoding strategies focusing on the efficacy of drawing on memory for list words and found that the "drawing effect" demonstrated a superior and reliable advantage in memory performance. Several studies found relationships between the visual arts and learning for retention. An experimental study conducted by Rosier, Locker, and Naufel (2013) produced results that suggested the highly creative act of drawing activates various brain regions leading to greater receptivity of information. They noted that it was the creative component that would appear to be the critical element and that engagement in a highly creative act may lead to individuals processing information on a deeper level that may generalize to other tasks. It is suggested that skills learned through artistic engagement, drawing in particular, are transferrable to other academic areas and might be valuable as a studying technique. According to Minichiello (2012), in his study of visual stimuli in triggering memory, drawing provided an individual process of consciousness and synthesis of thoughts. It is the stimulus and visualization tool in memory recovery. One drawing study conducted by Cohen and Johnson (2012) found a significant positive effect on retention of science vocabulary. They concluded that engagement in highly creative acts may result in individuals processing information on a deeper level. Their findings were confirmed by Rosier, Locker and Naufel (2013).

Problem

Previous research investigating long-term retention has either employed multiple modalities or drawing alone. It has not explored the integration of visual art where drawing techniques have been used to develop a visual note taking symbol system exclusively to gather information and then employed to create a drawing that demonstrates application and understanding. Hardiman, Rinne and Yarmolinskaya's (2014) arts integration employed multiple arts disciplines with a low socioeconomic status (SES) population and noted a need for further research with diverse populations. Research with an intellectually gifted and moderate to high SES population may cast a lens on the effect visual art integration has on a student population at the proficient level. At present, there have been no studies illustrating a causal link between content taught through visual note taking and student produced drawings that demonstrate understanding and assess long-term retention. Embracing the arts as an equal partner to STEM education where diverse learners are able to acquire, retain, and apply knowledge in a meaningful manner may have wide-ranging implications for student learning and retention across disciplines.

Research Question

- To what extent do students retain content using visual art integration, specifically employing art techniques to develop visual note taking and drawing skills, in STEM learning, as compared to students taught using a traditional approach?

Rationale

This study seeks to bring to light empirical evidence that authentic arts integration will provide the learner with access to content and skills in art and science thereby increasing the likelihood of increased long-term retention of content. It is through the use of art techniques, drawing skills and the development of personally meaningful visual notes that participants will experience authentic arts integration into science content.

Methods

Participants in this study included 55 students enrolled in a small private school for the intellectually gifted in the northeastern United States. The participants were 28 fifth grade students and 27 sixth grade students with a minimum IQ of 130 working 1-3 years above grade level.

Research Design

This experimental study, using a cluster random sample of two heterogeneous intact fifth grade classes and two heterogeneous sixth grade classes, sought to examine the impact of teaching science through visual art integration on long-term retention of science content using an adaptation of the National Aeronautics and Space Administration's (NASA) extremophiles STEM lesson plan. The control group received traditional STEM instruction employing conventional note taking to gather information. Prior to science content instruction, the experimental group received instruction on developmentally appropriate drawing techniques to be used during the visual note- taking process and the development of illustrative and culminating drawings. An eleven-question multiple-choice test was administered to assess prior knowledge regarding extremophiles and again to assess content learning and retention immediately after instruction and one-month post instruction.

The Dependent Variables included participants' scores on Retention post-test/multiple distance post-tests. Participants were post-tested immediately following delivery

of content and then again at one-month post-delivery. Independent Variables included class grouping (5th or 6th grade). Since a convenience sample of two fifth and sixth grade art classes were used for this research, one class from each grade was randomly assigned to the control group (traditional STEM instruction) and the other class to the experimental group (visual art integrated STEAM instruction). **Covariates** included the categorical variables of retention rates related to gender, academic achievement measured by first and second trimester grades in science, and race.

Data-analytic procedure

A one-way repeated measures ANOVA using the current version of the Statistical Package for the Social Sciences (SPSS version 23) was conducted to compare the effect of visual art integration on long-term retention of content test scores immediately following delivery of the extremophile lesson and again at one-month post instruction.

Limitations

Instruction of a single science lesson in and through the visual arts may provide only a snapshot of its retention effect. A broader integration period may be indicated to fully realize visual arts effect regarding long-term retention of content. The small sample size may limit the ability to generalize findings to a larger population therefore a larger study may be indicated.

Findings

This study examined the effect drawing and visual note taking have on long-term retention of science content. The results demonstrated that the visual art integration (visual note-taking) group exhibited a higher retention rate on the delayed post-test (dependent variable) than the traditional note-taking group and that no significant differences were found between the fifth and sixth grade participants on the measures.

To determine the effect of visual art integration, specifically drawing and visual note taking, on the retention of science content an ANOVA was conducted and revealed that there was a statistically significant effect of the visual art integration condition (experimental) on post test scores ($F(1,49) = 7.545$, $p < .001$, partial $\eta^2 = .23$). The Levene's test of homogeneity examines that variances are all equal for all samples when the data comes from non-normal distribution of groups. Levene's was not significant $F(1,50) = 3.154$, $p = .08$ indicating that there was no significant difference between fifth and sixth grade scores on the post-test ($F(1,49) = .010$, $p < .05$, partial $\eta^2 = .00$). Levene's $F(1,50) = .936$, $p = .338$.

An additional ANOVA revealed that there was also a statistically significant effect of the visual art integration condition on delayed post-test scores ($F(1,46) = 4.297$, $p < .05$, partial $\eta^2 = .085$). Levene's $F(1,48) = .004$, $p = .948$. There was no significant difference between fifth and sixth grade on the delayed post-test ($F(1,50) = .203$, $p < .05$, partial $\eta^2 = .004$). Levene's $F(1,51) = 2.555$, $p = .116$. Using the enter method, a significant model emerged: $F(1, 46) = 4.297$, $p < .05$. This model explains 28.2% of the variance (Adjusted $R^2 = .282$). Visual art integration was a significant predictor of content retention on the delayed post-test.

Discussion

This research is one of a few studies that has utilized drawing or visual note-taking, however, none have used both and none have employed the development of drawing techniques prior to learning methods in which to create visual notes and science content learning. Drawing techniques and visual notes were used to collect and apply content knowledge in the development of a culminating illustration in order to demonstrate an understanding and application of both art techniques and science content knowledge. The ANOVA also revealed that there were no significant differences between fifth and sixth grade participants' scores on the pre-test, post-test and delayed post-test suggesting that this intervention was not impacted by student grade level.

Previous research has found that participants from low SES groups who are not proficient in reading attained improved test scores (Hardiman et al., 2014; Koester, 2015), however, the results of the art integration (visual note taking and drawing instruction) employed in the current research demonstrated significant improvement in retention with a middle to high SES group of gifted students (IQ 130 or above).

The results of this study support the hypothesis that drawing and the creation of a personally meaningful visual vocabulary (visual notes) may lead to improved long-term retention (Edens & Potter, 2001; Hardiman et al., 2014; Koester, 2015; McBride & Dosher, 2002; Minichiello, 2012; Wammes et al., 2016). Visual note taking adds an additional layer where the development of art techniques is used to acquire and retain information.

Implications

Practical implications of this study point to the necessity that policy makers re-examine the validity of a fully integrated educational experience for students in order that learning is in and through the arts. The importance of this may be found in the results of this study as the participants gained a better understanding of content. Given that the findings in the current study where the participants were gifted individuals from middle to high SES, it may be necessary to re-examine the value of an authentic art integration with more diverse populations. The limited diversity in this and other studies necessitates that future research be conducted with a significantly greater population and

the inclusion of races other than those examined here. A longer period allotted for experimentation and practice may be warranted in future research. The 40-minute period designated for each of the art techniques may not have permitted enough practice to fully realize the application of skills with respect to the development of the visual notes and culminating drawings. The integration of art techniques and drawing should increase student efficacy and achievement. Going forward, larger studies with more diverse populations is warranted where instruction in art techniques and science content are taught by educators competent in those areas.

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From the Field: Practical Applications of Research

Retention of Long Island Millennials at a Suburban Community College: Are They College Ready?

By Martin R. Cantor, CPA, Ed.D

Abstract

This study contrasts the socio-economic characteristics of students enrolled at a suburban community college who graduated or transferred to a college or university with the characteristics of those students who did not persist to graduate or transfer to a four year college program. Identified characteristics that could serve as reliable predictors of non-persistence, defined by either non-graduating or non-transferring to a four-year institution, were student median household income; household income levels of student's home community; eligibility for Tuition Assistance Program (TAP); eligibility for Pell Grants; enrolled in remedial or Basic Education classes; and census data by zip code of education attainment.

Revealed were differences between those who graduated or transferred out to four year colleges and non-persisters who were enrolled in remedial education and who came from zip codes of communities with higher household poverty levels. These students typically attend community college on a less than full time basis which makes them ineligible for either Pell Grants or TAP. Among these non-persisters are 18-year old, first time in college, Black and Hispanic males who represent significantly higher enrollment in remedial education. Additionally, GED recipients who were non-persisters were four times greater than GED recipients who graduated or transferred out.

Strong associations existed between a lack of persistence among students who did not graduate or transfer and those who were Pell Grants recipients and tested into remedial and Basic Education Programs. Stronger associations existed between non-persistence in graduating or transferring out Pell Grants recipients and communities with higher levels of household poverty income.

A stepwise multiple regression indicated that remedial level and enrollment in Basic Education Program were predictors of non-persistance.

Introduction

Long Island's young people are leaving the region, taking with them skills that the Long Island workforce needs to sustain the regional economy. The academic achievement of students at Long Island's community colleges is critical to Long Island's future because the community colleges provide a pathway for Long Island's future workforce between high school and senior colleges. However, are enrollees in community colleges academically prepared for the rigors of higher education?

According to ACT, the leading U.S. college admissions test which measures what was learned in high school in order to determine academic readiness for college, over 60 percent of the 1.7 million high school graduates in 2012 were not adequately prepared for college or to succeed in the workforce. In 2012, 25 percent of graduates failed to meet college readiness standards established by ACT for English, mathematics, science and reading, and 60 percent fell short of the benchmarks in two of the four subjects (Sheehy, 2012).

ACT found that of the 2012 high school graduates, only 23 percent of African American, Hispanic, and American Indian students achieved the benchmark set for mathematics, less than 15 percent were deemed ready for college-level science courses, and more than 50 percent did not achieve any of the established standards for the four core subjects (Sheehy, 2012).

Although there has been success in students' admission to college, the lack of readiness for college is apparent by the approximately 60 percent of freshman college students who annually discover that they are not ready for a post-secondary education, and that before they can begin taking college level courses leading to an academic degree, they must first take non-college degree earning remedial courses in English or mathematics (National Center, 2010).

Furthermore, a Stanford University study revealed that these students believed that community colleges had low academic standards, that their high school education was enough to succeed, that anybody over 18 years of age could attend, and that community college was a second chance for low performing students. Upon entering community college these students found that they were not academically ready and had to take noncredit remedial courses that extended their time for a degree and increased their total college costs (Kirst, 2006).

The fact that some students lack readiness for the rigor of college studies and must take remedial classes is reflected in lower retention rates and is illustrated by the majority of students who begin remedial courses but fail to complete their college degrees. This readiness gap is less prevalent in selective four-year colleges and universities while more prevalent in two-year colleges, because highly selective four-year educational institutions tend to be more discerning in their admissions criteria which screens out non-college ready students. The gap between students who enroll and students who fail to graduate is more prevalent in open-access two-year colleges and somewhat selective four-year colleges where between 80 and 90 percent of undergraduates enroll. In two-year colleges, where enrollment is customarily based on achieving a high school or equivalency diploma approximately 25 percent of freshman students are fully prepared for college-level courses with the other 75 percent requiring remedial support in English, mathematics or both (National Center, 2010).

Retention rates are also impacted by persistence. Early dropouts, described as "students enrolled for one term of study but never returning to the same college for another term" were five percent more likely to require remedial education in reading, writing, and mathematics and more likely placed at two or more levels below college-level than students who enrolled twice in the first four terms of study. While students in remedial education courses had the highest rate of failure, the rate of failure, course withdrawal, and incomplete grades of early dropouts were between 30 and 40 percent higher than those who enrolled twice in the first four terms of study (Crosta, 2013).

Despite retention challenges, community colleges provide an alternative to the rising costs of higher education while providing a path to a four-year college, especially for students needing remedial classes who often come from lower income and poverty households.

The U.S. Department of Education found that 41 percent of low-income students who enrolled in a four-year college or university graduated within five years, as compared to 66 percent of higher income students. Illustrating the impact that household income has on academic achievement of low-income students attending higher education was that 47 percent of low-income students who did not return to college left in good academic standing. Few of these students, defined as those over 25 years of age finish their education, as illustrated by the 12 percent of the undergraduate student population who are returning students (StateUniversity.com, 2016). Furthermore, only 38 percent of students who drop-out return to higher education as compared to the 65 percent of drop-outs who planned to return (Community College Completion, 2016).

Lower household income was impactful to 54 percent of students who had to work and could not balance community college academic rigors while contributing financially to family budgets, while 31 percent said they couldn't afford college. Another 23 percent had dependent children and 62 percent of those who dropped out had to pay for their own education. As for community college students who needed to work, 60 percent worked 20 hours per week and 25 percent worked 35 hours or more per week. The fact that 85 percent of community college students with work responsibilities had to enroll part time limited their available financial aid options (Community College Completion, 2016). Additionally, 66 percent of college students had to stop their schooling so they could support their family (Weissmann, 2012).

The challenge of paying for a community college education is further complicated by the State and Federal financial aid regulations facing many first-time and part time students, making it more difficult for part time students to obtain financial aid at a time when they may need to work to pay for college or contribute to the financial needs of their families (Kirst, 2006).

While individual and family financial pressures impact community college students so does the reality of academic responsibilities and challenges. A 2011 Harvard University study found that nearly half of American college students left college before receiving a degree. The reasons cited were: money concerns such as increased debt and underestimating costs; poor preparation for understanding the academic workload, social habits and daily routines; outside demands including family and professional responsibilities, too much freedom, lack of structure, and being lost in the crowd of students. Also, the individual academic relationships experienced during high school with teachers meeting students three to five days per week do not exist in college. Students have to initiate academic connections with their professors (Purnell, 2013).

The financial pressures lead high school graduates to enroll in college with expectations that a college degree will allow them access to a good paying job and a middle-class lifestyle. However, just 56 percent of students who begin a bachelor's degree program graduate in six years and 29 percent who seek an associate degree from a community college obtain that degree within three years. The reality is that in the current economy it is more challenging to earn a middle-class wage without a college degree while 41 percent of the current American workforce have just a high school diploma (Weissmann, 2012).

Many post-secondary educational institutions lack established plans or goals to improve retention and degree

completion, and many of these educational institutions blame the lack of retention on students rather than on themselves. While academic readiness is a critical factor in college retention, academic support for struggling students may not be enough to keep them in school. Students who dropped out have indicated their need to feel connected to the campus community, saying they were isolated from campus life or did not fit in (StateUniversity.com, 2016).

A region's true asset is its people, its human capital, and begins with educated young people from a diverse and demographically changing population. Drop-out rates have been found to be higher in African American, Hispanic and younger students, and to a lesser degree, students who were the first college enrollees from their families, students with limited English proficiency, and others such as returning adult students. Nearly 40 percent of students are estimated to leave an institution of higher education without getting a degree with 75 percent of those students leaving within the first two years of college. Freshman year students have the most difficulty having an attrition rate of between a 20 to 30 percent (StateUniversity.com, 2016).

In terms of the attrition rate of community colleges students between 1996 and 2006, the United States was surpassed by six nations in higher education degrees for students between the ages 25-34. In Texas, for example, students between the ages of 25-34 with a two year or four-year degree lagged behind students between the ages of 35-64 with similar degrees. The importance of this is illustrated by 45 percent of all first-time students enrolling in community colleges accounting for 50 percent of total enrollment in public post high school education (Kirst, 2006).

As for retention rates of GED students, a comparison of 40 GED and 40 high school graduates enrolled at Lorain County Community College in Ohio provided differences in demographic and academic achievement. The GED students had 63 percent more males, 20 percent fewer Caucasians and almost three times more married students. The high school graduates exceeded GED students' GPA by 2.66 to 1.95, attempted credit hour average 33.3 to 12.4, and completed credit hours 31.4 to 10.8. The mean placement scores of high school graduates in English, reading and mathematics were significantly higher than those of GED students. While some high school graduates would require remedial help in mathematics, the GED student required remedial assistance in English, reading and mathematics (Schillo, 1990).

Purpose of Study

The purpose of this study is to identify the socio-economic characteristics of students enrolled at a suburban community college who complete the two-year curriculum in two or three years and graduate or transfer to a college or university with the characteristics of those students who do not. To improve academic assistance programs the needs of community college students before they begin to pursue their Associate Degree have to be clarified. Toward that goal, this study examines the relationships between two groups of students who persist or do not persist in their educational goals and their remedial class enrollments; Basic Education Program (BEP) enrollment; census data of education attainment, median income and poverty levels of student home communities; and recipients of Tuition Assistance Program (TAP) and Pell Grants.

Methodology

Participants and Procedures

The cohort selected for the sample are first time, full time students seeking an Associate Degree who entered a suburban community college in the Fall of 2011 and were scheduled to graduate in June of 2013. The status of each student entering a suburban community college in the Fall of 2011 was determined as of the Fall of 2014 and identified as either graduated or not graduated. Included in the sample were those students who began in the Fall of 2011 and graduated by end of Fall 2014.

The cohort is divided into two groups. The first are those who completed the curriculum during or before the Fall of 2014, the second are those who did not complete the curriculum during or before the Fall of 2014. One-hundred students, randomly selected, are included in each group. Students completing the curriculum include those who graduated from a suburban community college with an Associate Degree or transferred out to a senior college. Students not completing the curriculum include those who returned after the Fall 2014 and did not graduate and those who began in the Fall of 2011 and did not graduate or transfer out.

The sample was randomly selected from a list of 4,282 Fall 2011 first-time, full time, Associate Degree seeking students, comprised of 1,083 who graduated, 876 who transferred out, 756 who returned and did not graduate, and 1,567 not completed nor transferred out.

Based on random numbers assigned to student ID numbers, the random assorted numbers were ranked from low to high with the selected sample equally divided into two groups of 100 students, completed and not completed. Completed included graduated or transferred out, and incomplete included not graduated or not transferred out. Student names and addresses were not included assuring confidentiality and anonymity of those included in the sample.

The independent variables for the sample were obtained from the suburban Community College Office of Strategic Planning and Institutional Effectiveness in cooperation with the suburban Community College Institutional Review Board, and included home zip code, gender, ethnicity/race, age, previous education level, whether the student transferred in, received financial aid, was enrolled

in a Basic Education Program or remediation program and level of remediation, and Grade Point Average, degree program selected when enrolled, and Associate Degree earned.

Data Analysis and Discussion

Research Question One

For students completing the curriculum at a suburban community college required for graduation, not completing the curriculum, returning to college and not graduating and not graduating or transferring out, what were their gender, race and ethnicity, remedial class enrollment rate, Basic Education Program (BEP) enrollment rate, census data of level of education attainment, median household income and poverty levels of student home communities, and Tuition Assistance Program (TAP) and Pell Grants recipients? Descriptive statistics and frequencies of each variable was used to determine if any distinctive patterns existed between students who complete, non-complete, and those who did not graduate or transfer out.

Thirty-two percent of those returning to complete their studies did not complete the curriculum over a three-year period and 68 percent did not graduate or transfer out. Eighty percent of those not completing the curriculum at a suburban community college took remedial courses as compared to the 62 percent of students completing the curriculum. Of the students not completing the curriculum, the 47 percent taking level two and three remedial courses exceeded by 59 percent the 28 percent of those who completed the curriculum taking level two and three remedial courses.

Of those enrolled in the Basic Education Program (BEP), the 15 percent who did not complete the curriculum was more than twice the six percent of those who completed the curriculum. Those having a GED who did not complete the curriculum were four times greater than those having a GED who completed the curriculum.

There were gender, age, racial and cultural differences between those who completed the curriculum and those who did not. Those not completing the curriculum were 57 percent male, 70 percent 18 years of age, 48 percent white, 20 percent Black, 23 percent Hispanic, and one percent Asian.

Household income was lower in households of those who did not complete, and non-graduates or transfers out. Those who completed came from zip codes with household income between $48,438 and $150,161 and a median household income of $96,563, as compared to those who did not complete who came from zip codes with lower household income between $35,748 and $139,565 and a lower median household income of $91,718. Those non-graduates or non-transfers out came from zip codes with household income between $35,748 and $139,565 and a lower median household income between $90,896 and $91,718.

Median Household Income was lower in non-complete, non-graduate or transfer out. The 40.8 percent of students who did not complete had median household income below $90,000 which was 23 percent greater than the 33 percent of those who completed. By comparison, the 67 percent of the students who completed had median household income over $90,000.

The level of poverty was also a factor. There was a greater distribution of those who did not complete within households in zip codes with higher levels of poverty as compared to households of those who completed. The 22.5 percent of those who did not complete in zip codes with poverty levels between 10.1 to more than 20 percent was 50 percent greater than the 15 percent of those in the same poverty levels who completed.

The level of financial assistance provides insight into a student's individual and family financial needs. The 39 percent of recipients of Pell Grants who completed were three percent less than the 42 percent who received Pell Grants and who did not complete. Conversely, the 61 percent not receiving Pell Grants who completed was 3 percent greater than the 58 percent receiving Pell Grants who did not complete.

Recipients of Tuition Assistance Program (TAP) were 38.2 percent of those who did not graduate and did not transfer out.

Research Question Two

How did the students that completed the curriculum at a suburban community college required for graduation, differ from those that did not complete the curriculum, and from those students that did not graduate or transfer out, in remedial class enrollment, Basic Education Program (BEP) enrollment, census data of education attainment, median household income and poverty levels of student home communities, and Tuition Assistance Program (TAP) and Pell Grants?

Descriptive statistics were used to report means, standard deviations and frequencies of each component for each variable. A t-test of independent mean differences and item analysis for each variable was conducted to determine if any distinctive patterns existed between students who complete, non-complete, and those who did not graduate or transfer out.

The greatest percentage differences between the means of those completing, non-completing and non-graduate or transfer out existed in levels of remedial education, the poverty level of the household and Zip code where each student lived and in the Pell Grants and TAP received.

As compared to those who complete, those who did not complete or did not graduate or transfer out tended to be among 52 percent of the population that required

higher levels of remedial education, were 13 and ten percent greater than the contrast group to come from Zip codes and households with higher levels of poverty, and were respectively eight and five percent more likely to receive Pell Grants and TAP.

Smaller percentage differences were found to exist between students who complete, non-complete or graduate or transfer out and BEP enrolled, the median income of the Zip code and household each student came from, and the respective academic achievement level of that Zip code.

Research Question Three

What were the relationships among students that completed the curriculum at a suburban community college required for graduation, those that did not complete the curriculum, and those that did not graduate or transfer out, among remedial class enrollment, Basic Education Program (BEP) enrollment, census data of education attainment, median income and poverty levels of student home communities, and Tuition Assistance Program (TAP) and Pell Grants? Two Pearson Product Moment Correlation analyses were used to identify the significant relationships in the total student sample and the relationships in the non-graduate or transfer out.

Relationships in the total student sample reflected that six percent of the variance in those who completed the curriculum is associated with remedial level and two percent of the variance is associated with BEP enrollment. Six percent of the variance in those not completing were associated with remedial education and two percent of the variance associated with BEP enrollment. Four percent of the variance in those who do not graduate or transfer out was associated with remedial level and two percent associated with BEP enrolled. A very strong relationship existed between remedial level and BEP enrolled accounting for 33 percent of the variance.

Other relationships existed between Pell Grants and remedial level with 3 percent of the variance; sample median household income with 11 percent of the variance; zip code median household income with 12 percent of the variance, zip code poverty percent with 9 percent of the variance, and household poverty income with 11 percent of the variance; BEP with 3 percent of variance and zip code with two percent of the variance.

Weaker relationships existed between TAP and remedial level, zip code poverty percent, poverty household income, zip code median household income, median household income of the sample and strongly correlated with Pell Grants with 27 percent of the variance.

The relationships among non-graduate or transfer out and Pell Grants recipients reflected that 10 percent of the variance in Pell Grants is associated with remedial level, 18 percent of the variance associated with zip code median household income, 17 percent of the variance associated with the median household income of the sample, 15 percent of the variance associated with zip code poverty percent, and 20 percent of the variance associated with poverty household income. Other relationships include 21 percent of the variance in TAP is associated with Pell Grants and 30 percent of the variance in remedial level is associated with BEP enrollment.

Research Question Four

How did remedial class enrollment, Basic Education Program (BEP) enrollment, census data of education attainment, household median income and poverty levels of student home communities, Tuition Assistance Program (TAP) and Pell Grants predict the rate of students completing, not completing and not graduating or transferring out? Stepwise multiple regression models calculated the extent to which remedial class enrollment, Basic Education Program (BEP) enrollment, census data of education attainment, median household income and poverty levels of student home communities, Tuition Assistance Program (TAP) and Pell Grants predict the rate of students who did not graduate or transfer out.

Remedial level predicted four percent of the variance in those who did not graduate or transfer out, that BEP enrolled predicted 34.1 percent of the variance in the remedial level of non-graduate or transfer out followed by Tap with 1.8 percent of the variance and race/ethnicity with 1.4 percent of the variance, and the BEP enrolled non-graduate or transfer out indicated that Pell Grants predicted 3.4 percent of the variance.

Conclusion

This study examined the socio-economic characteristics of students enrolled at a suburban community college who graduated or transferred out to a college or university with the characteristics of those students who didn't.

Those who did not graduate or transfer out typically were enrolled in remedial education, came from zip codes and communities with higher household poverty levels, attended a suburban community college on a less than full time basis which, in many instances, made them ineligible for either Pell Grants or TAP. Among these non-completers were 18-year old, first time in college, Black and Hispanic males who represented significantly higher enrollment in remedial education. Additionally, while GED recipients were a small part of the selected sample, differences in their persistence warrants further examination. For example, GED recipients were four times more likely not to persist and not complete the curriculum when contrasted with GED recipients who persist and graduate or transfer out.

Strong associations existed between the lack of persistence in students who did not graduate or transfer out and those who tested into BEP, were placed in some level of remediation, were recipients of Pell Grants, and came from communities that typically reflect a higher level of household poverty income. Also revealed were that Pell Grants and Tap recipients came from both poverty and lower median household income communities and were more likely not to persist.

Recommendations

The study identified seven characteristics that could serve as reliable predictors of non-persistence, defined by either non-graduating or non-transferring to a four-year institution. They are student median household income, household income levels of student's home community, eligibility for Tuition Assistance Program (TAP), eligibility for Pell Grants, enrollment in one or two remedial classes, enrolled in three remedial classes (Basic Education Program), and Census data by zip codes of education attainment.

These characteristics can help identify possible non-persisters when they enroll at a suburban community college and special assistance can be provided to them so that they can be given the best chance to succeed academically. The suburban community college student orientation program should be expanded to include workshops focusing on financial management of college student loans, student time management, and college success for GED students and 18-year-old Black and Hispanic males from high poverty and low median household income communities.

Additionally, mentors or completion coaches should be assigned to students who test into remediation and BEP, and first semester Freshman Experience course should be required for all identified at risk students focusing on motivation and affirmation of student persistence.

Integral to assisting potential non-persisters is for a suburban community college to create tighter linkages with the top feeder high schools that have non-persisters and expand early identification and intervention efforts in the feeder middle schools beginning with the 7th grade. Intervention efforts for at risk students should be in collaboration with existing middle and high school early intervention programs.

This study should be repeated after a period of time to evaluate the impact that any early identification and intervention programs at the middle schools and high schools had on persistence levels of enrollees at a suburban community college.

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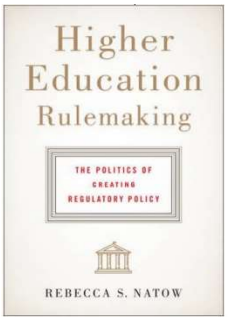
Book Review

Higher Education Rulemaking: The Politics of Creating Regulator Policy

- by Dr. Rebecca S. Natow
- Reviewed by Eustace G. Thompson, Ph.D.

In her new book, Higher Education Rulemaking: The Politics of Creating Regulatory Policy, Dr. Rebecca Natow takes the reader on a scholarly journey through the largely unchartered and under analyzed higher education rulemaking process. The underlying principle for this research inquiry is "You can't influence someone/something you don't know". She has meticulously researched the higher education rulemaking process though a theoretical lens of power and policy making that enlightens readers to understand the complexity of the rulemaking process in higher education.



Dr. Natow' s labyrinth begins with the enactment of the 1965 Higher Education Act intended to create regulations for the implementation and administration of federal funding for higher education programs. It contains nine main sections or "titles" that affect public, nonprofit, and in some cases for-profit institutions. Underlying the impact of Higher Education rulemaking and its significance is the eligibility of these institutions to receive federal aid dollars. She identified the several reauthorizations of the Act and provided a focus on the critically scrutinized Gainful Employment Rule and the Accreditation and Student Outcome Regulations. The Gainful Employment Rule provided greater regulation on schools that provide career-focused education programs including for-profit institutions. The Student Outcomes regulations were quite far-reaching including such areas as schools' obligations for disaster victims from catastrophes such as Hurricane Katrina as well as 9/11 victims' families. In addition, she reviews rules extended to accreditation of distance learning programs and requirements for institutions to have plans to assist students if an institution closes.

Dr. Natow describes the rulemaking process as highly bureaucratic, emphasizing that within the formal agency structure, roles are appointed. She explores the process itself largely through a political frame analysis positing specific theoretical suppositions to explain how internal and external factors influence decision-making. She does an outstanding job of explaining and providing evidence of how policy actors influence policy development and outcomes. She is at her analytical best when describing the nuanced actions of Congressional members, lobbyists and other political appointees within the Department of Education. This is accomplished through a detailed and logically sequenced account of this complex process of rulemaking and legislative actions.

Dr. Natow offers a powerful and potent analysis in her chapter on Strategies and Powers of Influence. The exercise of power in the rulemaking process is at the core of her analysis. She helps the reader identify and understand four power sources of influence operating in our political system and affecting higher education. She provides a critical cross-case analysis of public officials in the formal hierarchical rulemaking structure, governmental/non-governmental influencers, caucuses, and lobbyists. From this analysis the reader emerges with a clear understanding of how beliefs motivate political actors and how these beliefs are reflected in final regulatory policies. We also see how changes in lawmakers or high-profile events can prompt new policies or amendments that replace former policies.

Dr. Natow has provided a scholarly resource for academics, higher education administrators, and researchers. She has successfully made transparent what was a largely muddled and non-navigable terrain.

Reference:

Natow, R.S. (2017). *Higher Education Rulemaking*. Baltimore, MD: Johns Hopkins University Press.

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