AASA JOURNAL OF SCHOLARSHIP & PRACTICE

AASA
THE SCHOOL SUPERINTENDENTS ASSOCIATION
WWW.AASA.ORG

Research and Evidence-Based Practice Advancing the Profession of Education Administration

Spring 2013/Volume 10, No. 1

Table of Contents

Board of Editors

AASA Journal of Scholarship and Practice
2011-2013

Commentary

Translating the Common Core State Standards

Christopher H. Tienken, EdD
Donald C. Orlich, PhD

Colleagues and I have been expressing our concerns with the Common Core State Standards initiative (NGA & CCSSO, 2010) since 2009 (e.g. Tienken and Canton, 2009; Tienken and Zhao, 2010; Tienken, 2013).

But as Don Orlich and I (Tienken and Orlich, 2013) describe in Chapter 7 of our new book, *The School Reform Landscape: Fraud, Myth, and Lies,* the Common Core State Standards (CCSS) initiative continues to ramble on, without evidence to support its efficacy. That is because education reform in the United States is being driven largely by ideology, rhetoric, and dogma instead of evidence.

Sadly for today's children, the ideas put forth via the Common Core are simply recycled from those presented by the Committee of 10 and Committee of 15 in 1893 and 1895. The rhetoric used by the vendors of the CCSS seemingly attempts to mask the fact that there is little that one can consider innovative or equitable in the latest product to enter the current education reform landscape.

Translations of Standardization

Below are excerpts from our book in which we take some of the claims made by the vendors of the CCSS and provide translations of the considerations the vendors of the standards claim they made when constructing the CCSS.

Internationally benchmarked: The vendors claim that these standards are: Mirrors of standards from high-performing countries and states so that all U.S. students are prepared to succeed in a global economy and society. *Translation:* We copied some language from some of the best test-taking nations but we have no evidence that the ideas we copied will have any positive influence on creativity, innovation, or overall student learning in the U.S. Furthermore, we have not considered any unintended consequences of the CCSS. We do not match specific CCSS standards to specific countries. Thus, we leave you, educators and the general public, wondering which standards are benchmarked and to which countries those benchmarks belong.

Special populations: The standards are written with inclusionary language. *Translation:* The authors of the CCSS assume that the standards are accessible to various student populations and learning styles, but because the CCSS were never field-tested prior to launch, the vendors do not have data to support the assertion. The vendors also fail to tell us that the national standardized tests will be driving all decision-making about special populations and that all special populations will have to take

the same test as non-special populations. In the end, all students will have to demonstrate mastery of all standards, at the same level of difficulty, in the same formats. So much for meeting individual needs.

Assessment: We are told that the vendors of the CCSS did not develop an assessment system. The vendors do state that the CCSS will ultimately be the basis for an assessment system that would be a "national" assessment to monitor implementation. *Translation:* You will be tested, but we do not want to take responsibility for that. Now that most state education bureaucrats adopted the CCSS, national testing is scheduled to begin in 2014 or 2015 in at least 42 states. In many states, education bureaucrats will use the results from the national tests to judge the quality of the public school system and those who learn and work in it. The results will be used to determine promotion and graduation eligibility in many states. All of the NCLB waiver plans approved by the USDOE included the use of the CCSS and national assessments tied to incentives (aka: consequence) for teachers and school administrators.

Standards, not curriculum: The vendors of the CCSS correctly explain that the standards are not a set of curricula. They state that the initiative is about developing a set of standards that are common across states. The vendors claim that any specific curriculum that follows will continue to be a local responsibility (or state-led, where appropriate). In essence, they claim the illusion of local control. *Translation:* Whatever rhetoric the vendors use to mask the loss of local control, it is important to remember that the national test frameworks and the released test items will become the actual local curriculum due to the stakes attached to the test results. Local control of curriculum in mathematics and language arts will become an endangered species at that point.

For example, as soon as it is determined that algebra makes up over 60% of the national mathematics exam for high school and geometry accounts for, let's say, 22%, you will see a massive shift in local curriculum away from geometry and more time toward algebra, regardless if the local population deems that appropriate.

21st century skills: The vendors claim that the CCSS incorporate 21st century skills where possible. *Translation:* We think 21st century skills consist of a narrow conception of mathematics and western English language arts. Furthermore, we, the vendors of the CCSS, have no idea how to develop authentic 21st century skills such as (1) strategizing, (2) entrepreneurship, (3) persistence, (4) empathy, (5) socially-conscious problem solving, (6) cross-cultural collaboration and cooperation, (7) intellectual and social curiosity, (8) drive, (9) risk taking, and (10) challenging the status quo. Our austere standards and testing program will only work to narrow and reduce the local curriculum to what is tested.

Customized It Is Not
The CCSS vendors tend to assume that customized curriculum will be developed either by the respective states or textbook companies. In fact, most large publishers had new texts on the market soon after the CCSS were released in 2010. So much for customization at the local level.

It seemed like the publishers had the books on the shelves ready to go before the Standards were even released. Did they help drive this effort? The CCSS were supposed to be drastically different that what existed, yet in a matter of weeks new "Common Core" materials were available for purchase, derived in some cases from existing textbooks.

Some state boards of education, like the one in New Jersey, actually mandated school district use of the Common Core less than a year after the CCSS were released. This meant that almost 600 school districts in the state began to purchase brand new texts made from recycled activities with different page numbers.

Districts were compelled to spend millions of dollars of taxpayer money on a set of standards and resources that were never tested or demonstrated effective.

It did not matter if the school district personnel just revised their math curricula and purchased new texts a year or two earlier. All that was now obsolete because the books did not say "Common Core" on the cover.

Let's call this what it is: A handout for the corporate textbook and test publishers. The CCSS initiative does not have anything to do with education in our opinion. It has everything to do with the business of education as we detail in our book (Tienken and Orlich, 2013).

Common Core Standards: Where's That Evidence?
We have seen many negative consequences of state mandated curriculum and assessment schemes in terms of curricular reductionism under NCLB. Results from empirical study after study reported the elimination of the arts and physical education, the over teaching of mathematics and language arts to the determinant of science, foreign language, the arts, and other "non-core" areas. The over reliance of high stakes commercially prepared state tests to monitor the implementation of standards is also well documented (Au, 2007; Booher-Jennings, 2005).

The Council of Chief State School Officers (CCSSO, 2009), one of the organizations that pushed through the development of the standards, wrote, "States know that standards alone cannot propel the systems change we need. The common core state standards will enable participating states to … develop and implement an assessment system to measure student performance against the common core state standards" (p.2). But where is the evidence of the efficacy of the standards or a national test? Where is the evidence that high stakes testing improves student learning in not only the subjects tested, but other important areas as well? There is none.

The Certain Crush of Standards
Campbell's Law (Campbell, 1976) predicts what will happen: The subjects prescribed currently by the CCSS and tested, language arts and mathematics, will become the most important subjects in terms of time and resources allotted to teachers. The opportunities students have to explore and delve into other subjects and educational activities, especially those seen as not academically challenging, will atrophy further.

Eventually, within three to five years of having the CCSS and the accompanying high stakes national tests, we will see the students who do not meet the arbitrary levels of achievement set in those subject areas labeled "at risk" and forced to do more work in those areas, depriving them further of the opportunities to participate in other educational activities. Those students will become the casualties of this latest form of education austerity.

We cite three to five years because that was the approximate time frame when schools across the country began to act regressively because of the NCLB curriculum and testing mandates. Perhaps, because the regressive policy infrastructure is already in place, it will happen faster this time.

Frankly Speaking

Let us be very frank: The CCSS are no improvement over the current set of state standards. The CCSS are simply another set of lists of performance objectives. Ohanian (1999) warned us fervently about this type of project years ago, prior to the birth of NCLB. Apparently the vendors of the CCSS did not heed her warning or simply do not care.

Author Biographies

Christopher Tienken is an assistant professor at Seton Hall University, College of Education and Human Services, in the Department of Education Leadership, Management, and Policy. His research interests include curriculum and assessment policy and practice. His latest book, with co-author Donald Orlich, is titled *The School Reform Landscape: Fraud, Myth, and Lies*. E-mail: Christopher.Tienken@shu.edu. Visit Chris at www.christienken.com

Donald Orlich is co-author of *The School Reform Landscape: Fraud, Myth, and Lies*. He has published extensively and received numerous awards. He is Professor Emeritus at Washington State University. E-mail: dorlich@wsu.edu

References

Au, W. (2007). High-stakes testing and curricular control: A qualitative metasynthesis. *Educational Researcher*, 36(5), 258-267

Booher-Jennings, J. (2005). Below the bubble: "Education Triage" and the Texas accountability system. *American Education Research Journal, 42*(2), 231-268.

Campbell, D. T. (1976. December). *Assessing the Impact of Planned Social Change*. The Public Affairs Center, Dartmouth College, Hanover New Hampshire, USA.

Council of Chief State School Officers. (2009). Standards and accountability. Retrieved from http://www.ccsso.org/What_We_Do/Standards_Assessment_and_ Accountability.html

National Governors Association Center for Best Practices & Council of Chief State School Officers. (2010). *Common Core State Standards*. Washington, DC: Authors.

Ohanian, S. (1999). *One Size Fits Few: The Folly of Educational Standards.* Portsmouth, NH: Heinemann.

Tienken, C.H. & Orlich, D.C. (2013). *The School Reform Landscape: Fraud, Myth, and Lies.* Lantham, MD: Rowman and Littlefield.

Tienken, C. H. & Zhao, Y. (2010, Winter). [Editorial]. Common core national curriculum standards: More questions and answers. *AASA Journal of Scholarship and Practice, 6*(3), 3-10.

Tienken, C.H. & Canton, D. (2009, Fall). [Editorial]. National curriculum standards: Let's think it over. *AASA Journal of Scholarship and Practice, 6*(3), 3-9.

The Effects of Age, Years of Experience, and Type of Experience in the Teacher Selection Process

A. William Place, PhD
Professor and Department Chair
Educational Leadership
Saint Joseph's University
Philadelphia, PA

David S. Vail, PhD
Superintendent
Miamisburg City Schools
Miamisburg, OH

Abstract

Paper screening in the pre-selection process of hiring teachers has been an established line of research starting with Young and Allison (1982). Administrators were asked to rate hypothetical candidates based on the information provided by the researcher. The dependent variable in several of these studies (e.g. Young & Fox, 2002; Young & Schmidt, 1987), as well as this one, was the administrator's evaluation of candidates. The independent variables used were candidate age, candidate years of experience, candidate type of experience, and type of district of the administrator. Candidates with eight years of experience were preferred over candidates with three years of experience. This could help districts in retention efforts because this finding, if made known, could lessen the perception that good teachers might have that if they remain more than a few years that their ability to move could be lessened by becoming more costly due to more years of experience. There was also a significant interaction between the type of district and teacher age. Urban school administrators were inclined to choose the 29-year old candidate over the 49-year old candidate. Suburban administrators, on the other hand, were more inclined to choose the 49-year old candidate. Administrators from a rural district showed no preference in one age group over another.

Keywords

teacher selection, age, teaching experience

The success of any organization is dependent on the performance of the people within the organization, as Hayes (1973) expressed in his book *You Win with People*. Although many organizations have the liberty and latitude to remove personnel who are deemed to be performing at less than the desirable level of performance, schools do not always have that freedom.

The process of showing just cause and accumulating the proper documentation must be done in accordance with revised codes, which is sometimes difficult to do. Although a legitimate concern, the focus should be placed on being proactive toward the problem of poor teacher performance. Because of the difficulty of dismissing underperforming faculty, school administrators need to be proactive in the hiring process and select qualified candidates to fill teaching positions.

Children would be better served if the problem were addressed at the front end of the process by selecting good personnel. More than ever, it is essential to carefully screen teacher candidates in order to make the best possible selection decision.

Purpose
The main purpose for this study was to determine if an administrator is inclined to select a candidate whose experience (urban, suburban, or rural experience) is similar to the type of district (urban, suburban, or rural district) to which the candidate is applying.

Through the use of an experimental design this study also sought to determine if candidate age (29 years old vs. 49 years old), experience (three years vs. eight years of experience), type of experience, and type of district had main effects or interactions which impacted school administrators' evaluations of hypothetical teacher candidates at the paper

screening stage in the pre-selection process of hiring teachers.

Theoretical Framework
With the onset of such legal and ethical issues as age, gender, race, and/or a handicap condition and the passage of the Civil Rights Act, the Age Discrimination in Employment Act and Americans with Disabilities Act, school administrators must exercise much needed caution as to who was, or was not, granted an interview or was ultimately hired. Young and Fox (2002) note the "intent of legislation by state and federal governments is crystal clear relative to the employment process.

That is, individuals seeking to obtain gainful employment should not be discriminated against on the basis of certain demographic characteristics and/or cultural heritage" (p. 531). Studies were devised, revised, and repeated to explore what predilections might exist in the mindset of the persons responsible for screening applicants who are interviewed (e.g. Young & Allison, 1982; Young & Fox, 2002; Young & Schmidt, 1987).

Research on pre-selection of teacher candidates has attempted to determine variables that may influence the final outcome in the process. The study by Young and Fox (2002) was a valuable tool to help raise awareness of prejudicial influences that the factors like age or race might have on hiring decisions. They found that "equal opportunity in employment may exist more in principle than in practice for certain groups of protected class applicants" (Young & Fox, 2002, p. 548-549). If the selection process is indeed biased then recruitment and retention of underrepresented teachers becomes a mote point.

One theory that has been related to some of the studies of personnel selection

---

(from the individual candidate's perspective) is that of similarity-attraction. Similarity-attraction theory supports the idea that people tend to select to work with (or rate higher) people who are similar to themselves (Young, Place, Rinehart, Jury, & Baits, 1997, p. 87).

Although the theory of similarity-attraction was once viewed by social psychologists as a means to describe or define relationships between two people, the premise behind the theory is easily transferable to the discussion of hiring practices or selection of candidates. Young and Fox (2002) note: "Several studies have used the similarity-attraction theory to predict screening outcomes for similar and dissimilar pairings of sex and age involving principals and applicants" (p. 539). This study was conducted to also explore pre-dispositions of administrators to select candidates who have experience in the type of district that is similar to the district in which they are seeking employment.

In other words, are urban schools more inclined to interview candidates with urban experience, or at least favor a candidate with experience in a urban setting over a candidate with experience in an rural setting, regardless of age and years of experience? Is the same true for suburban and rural interviewers? Little and Miller (2007) observed "that rural school districts have faculties that mirror the community's cultural composition. For that matter, the hiring of 'locals' is widespread in urban and suburban districts as well" (p. 120).

Young and Allison (1982), followed by others (e.g., Place, 1995; Wallich, 1984; Young & Chounet, 2003) set in motion a structured research methodology that can be replicated and adapted to further the study of teacher selection.

Each of these studies used hypothetical applicants with administrators choosing the best candidate using a pre-determined set of criteria. There are a variety of independent variables that included, but were not limited to, the applicants' age (e.g. Place, 1995; Wallich, 1984; Young & Allison, 1982), college grade point average (Place, 1995; Young & McMurray, 1986), gender (Place, 1995; Wallich, 1984), ethnic background (Young & Fox, 2002), years of teaching experience (Young & Allison, 1982), the position of the school administrator and type, as well as the years of experience of the school administrator (Young & Voss, 1986). The dependent variable in each of these studies was the composite score that each applicant received based on the hypothetical information supplied by the researcher.

Young and Allison (1982) found younger teacher candidates were systematically evaluated higher than older candidates regardless of candidate experience or the role of the person completing the evaluation, (e.g., principal or superintendent).

The variable of experience is important because if there was not a preference for less experienced candidates then the financial benefit of hiring the less experienced could not be a factor in the preference for younger candidates. Other research by Young and Place (1988) indicated that older and more experienced teachers were evaluated higher by their supervisors.

Therefore, whether it is because less experienced teachers could save districts money or because more experienced teachers might be able to increase performance, experience is an important factor to be studied.

Other researchers also found a preference for younger candidates regardless of the quantity of information provided (Young & McMurray, 1986; Young & Voss, 1986), or the level of teacher employment being sought (Young & Schmidt, 1987). Also, the influences of age and academic success (as represented by GPA) were examined.

Young and McMurray (1986) found age directly influenced administrators' decisions when low GPAs were held constant. When two candidates of different ages had the same GPA, school administrators gave preference to the younger candidate.

Young and Joseph (1987) found that the influence of age was dependent on content area of teaching. This might indicate that there is more complexity in what influences administrators' decisions than the main effects and direct influence found in other studies. In the Young and Joseph (1987) study, although such direct influence did not exist for chemistry teachers, it did exist for physical education teachers.

Although Place (1995) used a slightly different method (repeated measures), the findings indicated that the nature of GPA and age did influence decisions in a complex manner with the disparate impact for older candidates only being exhibited in an indirect fashion.

Therefore, Place's study conditionally supported the finding of age as having an influence, but strongly suggested that age might have a more complex influence than was previously presumed. In this study we have added to the previously examined variables of age and length of experience, new variables to examine the effect of the setting or type of district from which the rating administrator worked (urban, suburban, or rural) as well as

the type or setting of the candidate's teaching experience (urban, suburban, or rural).

Methods

We used a true experimental design in which independent variables were manipulated through hypothetical paper candidates with various characteristics randomly assigned to portions of a randomly selected group of public school administrators who were asked to evaluate the candidates.

The methodology used in this study, as in earlier studies, consisted of mailing an instrument to obtain information from school administrators. A cover letter was provided to the school administrators explaining the research and its purpose. Also provided was a description of the hypothetical chemistry position for the candidates that were to be screened, a résumé, and a reference letter for each of the candidates. The résumé contained the independent variables.

Half of the randomly assigned principals received résumés which were for candidates who were 29 years old and the others received ones which were for candidates who were 49 years old. The school administrator completed a form that provided information about him or her and the school.

The rest of the information was obtained from an evaluation form on which the school administrator rated each of the candidates in six categories, as well as indicating the likeliness of the candidate being interviewed. The information garnered from this final form was used to operationalize the

dependent variable. This was followed by a second letter to thank those who had already responded, as well as to encourage those who had not yet responded to do so.

Sample, Data Collection and Data Analysis

The subjects for the study were high school principals randomly selected by a national marketing agency, Market Data Retrieval. Principals (N=432) were surveyed with equal distribution of principals at urban, suburban, and rural schools. The design of the study was a 2 X 2 X 3 X 3 factorial design.

The four independent variables utilized were age of the hypothetical teacher, years of experience of the hypothetical teacher, setting or type of experience of the hypothetical teacher, and setting or type of district from which the rating administrator came. The age was indicated on the hypothetical resumes as either 29 years of age or 49 years of age. Years of teaching experience varied between three years and eight years.

Hence, for age of the candidate and role of the evaluator (the 2 x 2 portion of the factorial design), a quarter of the sample were principals who evaluated younger candidates with three years of experience, another quarter of the sample were principals who evaluated older candidates with three years of experience, another quarter of the sample were principals who evaluated younger candidates with eight years of experience, and the last quarter of the sample were principals who evaluated older candidates with eight years of experience.

Within each of those groups the type or setting of the candidate's teaching experience was urban, suburban, or rural. This variable was a repeated measures variable in that, school administrators rated three hypothetical teachers, one from each of the three settings. The type or setting of the district from which responding school administrators came (who rated the teachers) was also urban, suburban, or rural (as self-identified by these administrators).

The dependent variable for this study was the composite score obtained from the provided rating form, comprised of six criteria. The six criteria were curricular knowledge, communication skills, discipline ability, classroom management, growth potential, and overall contribution to the school. Each criterion score was determined on a Likert scale of 1- 4 with the higher score being the more favorable.

A between within analysis of variance was used to analyze the seven null hypotheses of this study:

(1) there is no difference between 29-year-old candidates and the 49-year-old candidates on the rating determined by the administrator;
(2) there is no difference between candidates having three years of experience and candidates having eight years of experience on the rating determined by the administrator;
(3) there is no difference among the candidate's type of experience (urban, suburban, or rural) in the rating determined by the administrator;

(4) there is no difference among the classification of the administrator, urban, suburban, or rural, in the rating of the administrator;

(5) there is no two-way interaction that affects the rating determined by the administrator;

(6) there is no three-way interaction that affects the rating determined by the administrator; and

(7) there is not a four-way interaction that affects the rating determined by the administrator.

Results

There were a total of 95 responses (out of 432) from the two mailings, for a return rate of 22%. Of the 95 returned, only 83 were able to be used due to incomplete data being recorded in 12 of the replies. Although the low returns did weaken the statistical power, there were still important statically significant findings that contributed to the knowledge base.

Almost half of the thirty-nine respondents indicated they were in the 40—54 age range, and another thirty-two responded in the 54 and over age category. There were 63 males and 20 females who provided usable responses. The classification of the district from which the principal was reporting, included 18 urban districts, 26 suburban districts, and 39 rural districts.

Instrumentation

In this study, three composite scores were computed from the ratings provided by administrators from each of the three types of school districts. To assess the internal consistency of these scores we calculated Cronbach's Alpha coefficients. The alphas were .86 for the urban administrators, .87 for the

suburban administrators, and .89 for the rural administrators.

These findings are within acceptable limits in that results "between .80 and .90, (are) very good" (DeVellis, 2003, p. 96). The final item on the evaluation form asked for a rating of the chances of the three hypothetical candidates being interviewed. This item was rated on a scale of 1 to 10, with 1 signifying a poor chance of the candidate receiving an interview and 10 signifying that the candidate had an excellent chance of receiving an interview.

Using the Pearson's r correlation, the administrators' ratings for the three hypothetical candidates and the candidates' chances for receiving an interview, the following correlations were calculated, n = 82: Urban, .72, suburban, .75, and rural .74. These results support the position that the composite score was a valid dependent variable measure for this study.

Findings

There was not a statistically significant main effect for candidates' age (CA in Table 1) as there had been in some previous studies. There was a statistically significant main effect found for the candidates' years of experience (CY in Table 1) as it was shown that those candidates who had 8 years of experience were preferred by all respondents (M=18.94) over those candidates who had three years of experience (M=17.73).

There was also a statistically significant finding of an interaction between the type of school district reported by the school administrator and

the candidates' age (RT * CA in Table 1). We found that the school administrators who reported themselves to be from urban districts favored candidates who were 29 years of age (M=19.55) over candidates who were 49 years of age (M=17.53).

On the other hand, the suburban administrators favored candidates who were 49 years of age (M=18.97) over those candidates who were 29 years of age (M=16.94).

Table 1

Test of Between—Subjects Effects

Source	df	MS	F
RT	2	4.080	.303
CA	1	.074	.005
CY	1	55.040	4.082*
RT * CA	2	51.631	3.829**
RT * CY	2	18.043	1.338
CA * CY	1	13.944	1.034
RT * CA * CY	2	1.159	.086

RT – Type of District as Reported by the Administrator

CA - Candidate's Age

CY – Candidate's Years of Experience

* $p = .047$; Partial Eta Squared = .057

** $p = .027$; Partial Eta Squared = . 103

Rural school district respondents did not show a significant preference when it came to age of the teaching candidate (see Figure 1).

Figure 1. Interaction between reported principal type and candidate age.*

Mean

20.00

19.50

19.00

18.50

18.00

17.50

17.00

16.50

Urban   Suburban   Rural

*   X – 29 Year Old
O – 49 Year Old
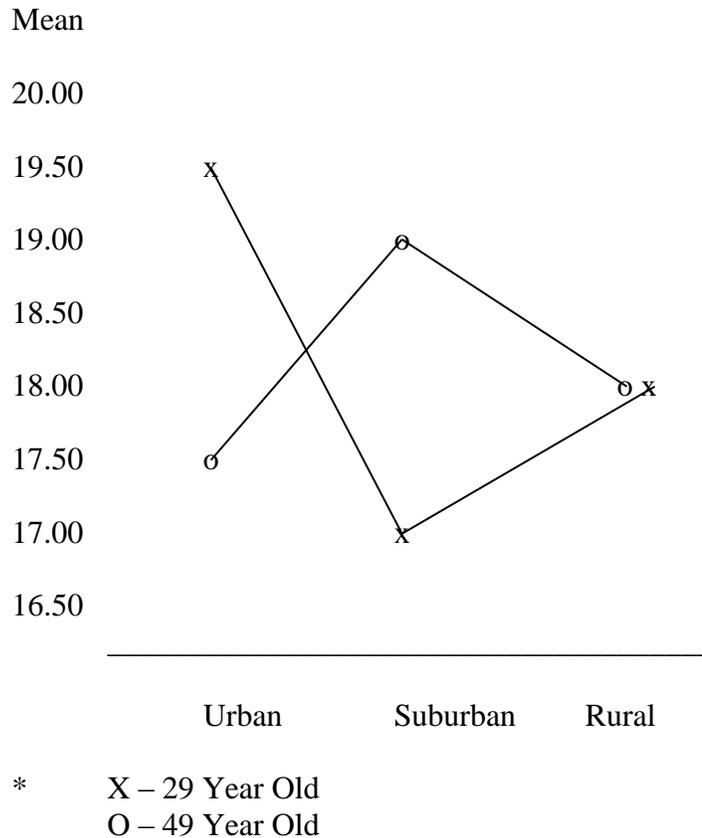
The repeated measures variable of the Candidate's Type of Experience required the participants to assess three different candidates in a comparative mode. Each school administrator rated three hypothetical candidates. The candidates represented each type of experience—urban, suburban, and rural.

There was not a statistically significant main effect for Candidate's Type of Experience (CT in Table 2).

Nor was there a statistically significant interaction between the type of district as reported by the administrator and the type of district of each candidate (RT * CT in Table 2), which did not support what was to be expected from a similarity-attraction theory perspective.

This might have been due to the low statistical power because it is possible that there was a type II error in

failing to reject the null when there might have been differences.

There were no other interactions or main effects significant in Table 2.

Although we hesitate to discuss differences that were not found to be statistically significant, the actual scores were in the directions that would be expected from the similarity-attraction theory perspective.
.

Table 2

Tests of Within—Subjects Effects

Source	df	MS	F
CT	**2**	**0.16**	**0.04**
CT * RT	**4**	**3.80**	**0.93**
CT * CA	**2**	**4.52**	**1.10**
CT * CY	**2**	**5.96**	**1.46**
CT * RT * CA	**4**	**2.93**	**0.72**
CT * RT * CY	**4**	**1.87**	**0.46**
CT * CA * CY	**2**	**0.61**	**0.15**
CT * RT * CA * CY	**4**	**1.79**	**0.44**

CT – Candidate's Type of Experience

RT – Type of District as Reported by the Administrator

CA – Candidate's Age

CY – Candidate's Years of Experience

Conclusions and Discussion

There were two statistically significant findings determined from this study with one main effect and one interaction.

The first is the candidates' number of years of experience. It was found that among all respondents, urban, suburban, and rural, there was a preference for those candidates with eight years of teaching experience over those candidates who had three years of experience.

Regardless of demographics, it appears as if school administrators from all types of schools seek to hire someone with more experience.

Although this is somewhat surprising because more experienced candidates generally cost school districts more, this is understandable from the perspective that one would equate someone with more experience as being the better teacher, all else being equal. This main effect for years of experience was not found in previous studies.

Perhaps the pressure for increased student achievement has influenced school administrators to place greater emphasis on what they hope might be better teachers.

Administrators who wish to hire more experienced candidates might use this finding to support their choice as they make the argument that nationally principals do prefer more experienced candidates.

The other finding in this study was a statistically significant interaction between the type of district and the candidates' age. Urban administrators preferred the 29-year-old candidates over the 49-year-olds; suburban administrators preferred the 49-year-old candidate over the 29-year old; and, rural administrators had no preference related to age.

This phenomenon could be contributable to a variety of factors that might have an influence on the administrators' decision. One possible explanation for the preference for younger candidates over older candidates might be attributable to the perception of the necessity of having the ability to relate to the students, as well as the vitality to keep pace with them, which could be more valued in the urban setting.

Nonetheless, there are important legal implications of this finding. The opposite inclination of having age over youth might be the value that is seen in the life experience of an older teacher and using that experience to relate lessons to real life issues.

Another possible reason for the preferences shown in this study could be attributable to supply and demand. There could be an overabundance of applicants for the suburban positions initially due to the perception that a teaching position in the suburbs is more desirable than one in an urban setting.

Once the suburban schools selected their candidates, and this study

shows that the suburban schools will prefer the older candidates at the screening stage of the selection process, the majority of the candidates left for the urban positions could be the younger candidates.

Therefore, as the supply of older candidates dwindled due to their being hired in the suburban districts the demand for teachers would remain the same for the urban districts. They could then have their perception influenced by the supply of the younger candidates to fill their vacancies. The data from this study does not provide evidence for these speculations that are provided to provoke thought for future research.

The preference for youth found in previous studies for example, Young and Allison (1982) does not seem to exist in all situations for all candidates at least as indicated by the findings of this study. In fact, for suburban districts the opposite seems to be true. Certainly that finding of an interaction of type of district with candidate age in this study supports the earlier studies (e.g. Place, 1995, Young and Joseph, 1987) indicating a level of complexity concerning the variables influencing teacher selection.

Nonetheless, at least in some situations, there remains a preference for younger teacher candidates. Further studies should be conducted which include the type of school district administrators come from to explore this complexity.

Importance of the work

This study has limitations that need to be considered when interpreting these findings. Specifically, these findings are limited to the screening stage of the teacher selection process and to the specifics of how these variables were operationalized (e.g. for chemistry teacher with either three or eight years of experience, etc.). However, this study used a true experimental design which helps to control the usual threats to validity (Shadish, Cook, & Campbell, 2002) and therefore does have strong internal validity.

We can say with confidence that principals really do rate more experienced candidates higher. In addition, the national random sample used to provide the data provides strong external validity for these findings. We can say with confidence that this preference for more experienced candidates exists nationally.

There was not a significant main effect for age of teacher candidate in this study. Therefore a claim of clear consistent discrimination is not supported by this study.

However, the statistical significant interaction of type of district with candidate age in this study suggests that at least administrators in urban districts need to become more aware of the Age Discrimination in Employment Act. Although there is no support for the idea that older candidates with more experience are preferred for economic reasons, there does seem to be support for the claim of discrimination against older applicants at least in some situations.

The results from this study did demonstrate statistical significance with regard to the number of years of experience a hypothetical teaching

candidate was reported to have, whether it was three years or eight years of experience.

The implication is that the more experienced the candidate, at least with those having three or eight years of experience, the more likely the candidate was to be interviewed by any district regardless of the type of district.

By choosing the candidate with eight years of experience over the candidate with three years of experience, the administrators were implying that the more desirable candidate was the one with more years of experience regardless of age (29 years old or 49 years old), type of experience (urban, suburban, or rural), and/or implied cost to the district (as operationalized by three years of experience or eight years of experience).

Most public schools have a salary schedule wherein, if all other criteria of two candidates are equal, the candidate with more years of experience would cost the district more in terms of salary and benefits.

That being said, by choosing the candidate with the greater number of years of experience the administrator is implying that the years of experience

are more valuable to the district than the savings that might be realized by choosing the candidate with fewer years of experience.

In today's environment with pressure to generate high scores on standardized tests and the reality of scarce resources, it appears that saving money is secondary to procuring the best candidate, which reinforces the notion that experience is equated with quality.

Many schools limit or cap the number of years teaching experience that a newly hired teacher may be credited on the salary schedule.

The findings from this study support the earlier call by Young and Place (1988) which stated, "If an experience cap that allows only a specific number of years credited to a teacher serves as a distractor for older candidates, then school districts might be recruiting less than the best available teachers from the market of potential applicants" (p. 51).

Especially in these hard financial times school administrators must carefully balance this potential increase in teacher performance against the potential increase monetary cost to the schools.

Author Biographies

A. William Place, Professor, department chair of educational leadership at Saint Joseph's University, Philadelphia, Pennsylvania is a past executive board member of the National Council of Professors of Educational Administration. A former teacher and administrator he authored *Principals Who Dare to Care*. E-mail: aplace@sju.edu

David Vail is currently the superintendent of Miamisburg City Schools. He previously served as a superintendent, principal, athletic director, teacher, and coach for 31 years. He received his doctorate in educational leadership from the University of Dayton in 2010. E-mail: dvail@miamisburg.k12.oh.us

References

DeVellis, R. F. (2003). Scale development: Theory and applications (2nd ed.). *Applied Social Research Methods Series, Vol. 26*. Thousand Oaks, CA: Sage.

Hayes, W. (1973). *You win with people*. Columbus, OH: Typographic Printing.

Little, P. S. & Miller, S. K. (2007). Hiring the best teachers? Rural values and person – organization fit theory. *Journal of School Leadership, 17*, 118-158.

Place, A. W. (1995). The effects of applicant age and academic achievement in screening decisions for the employment of secondary teachers: A re-examination using a comparative decision model. *Journal of Research in Education, 5*, 33-38.

Shadish, W. R., Cook, T. D., & Campbell, D. T. (2002). *Experimental and quasi-experimental designs for generalized causal inference*. Boston: Houghton Mifflin.

Wallich, L. R. (1984). *The effect of age and sex on the prescreening for selection of teacher candidates* (Unpublished doctoral dissertation). University of Wisconsin – Madison.

Young, I. P., & Allison, B. H. (1982). Effects of candidate age and experience on school superintendents and principals in selecting teachers. *Planning and Changing, 13*(4), 245-256.

Young, I. P., & Chounet, F. P. (2003). The effects of chronological age and information media on teacher screening decisions for elementary school principals. *Journal of Personnel Evaluation in Education. 17*(2), 157-172.

Young, I. P., & Fox, J. A. (2002). Asian, Hispanic, and Native American job candidates: Prescreened or screened within the selection process. *Educational Administration Quarterly, 38*(4), 530-554.

Young, I. P., & Joseph, G. (1987, April). Effects of chronological age, skill obsolescence, quality of information, and focal position on screening decisions. Paper presented at the annual meeting of the American Educational Research Association, Washington, D. C.

Young, I. P., & McMurray, B. (1986). Effects of chronological age, focal position, quality of information and quantity of information on screening decisions for teacher candidates. *Journal of Research and Development in Education, 19*(4), 1-10.

Young, I. P., & Place, A. W. (1988). The relationship between age and teaching performance. *Journal of Personnel Evaluation in Education 2*, 43-52.

Young, I. P., Place, A. W., Rinehart, J. S., Jury, J. C., & Baits, D. F. (1997). Teacher recruitment: A test of the similarity-attraction hypothesis for race and sex. *Educational Administration Quarterly, 33*(1), 86-106.

Young, I. P., & Schmidt, H. (1987, April). Effects of sex, chronological age, and instructional level on screening decisions made by principals. Paper presented at the annual meeting of the American Educational Research Association, Washington, D. C.

Young, I. P., & Voss, G. M. (1986). Administrators' perceptions of teacher candidates: Effects of chronological age, amount of information, and type of leadership position. *Journal of Educational Equity and Leadership, 6*, 27-44.

Research Article _____

Examining the Impact of Critical Feedback on Learner Engagement in Secondary Mathematics Classrooms: A Multi-Level Analysis

W. Sean Kearney, EdD
Assistant Professor
Educational Leadership
School of Education
Texas A&M University, San Antonio
San Antonio, TX

Michael Webb, MA
Administrative Specialist
Education Service Center, Region 20
San Antonio, TX

Jeff Goldhorn, PhD
Component Director
Leadership and Instructional Services
Education Service Center, Region 20
San Antonio, TX

Michelle L. Peters, EdD
Assistant Professor
Research and Applied Statistics
School of Education
University of Houston, Clear Lake
Houston, TX

Abstract

This article presents a quantitative study utilizing HLM to analyze classroom walkthrough data completed by principals within 87 secondary mathematics classrooms across 9 public schools in Texas. This research is based on the theoretical framework of learner engagement as established by Argryis & Schon (1996), and refined by Marks (2000). It is also informed by Glickman, Gordon, and Ross-Gordon's (2012) theories on critical feedback. The results of the multi-level analyses indicate that regardless of school size or socioeconomic status, secondary level classes in which teachers provide students with critical feedback on their mathematics assignments are more likely to have higher levels of learner engagement than classes in which students receive less feedback from their teachers.

Key Words

learner engagement; critical feedback; classroom observation

Introduction

What do the American people and education policy makers want and expect from our schools? Recently, the answer seems to be simply – higher test scores. But have we stopped to ask the students – what do you want to learn about today? There is a demonstrable link between learner engagement and student success. For example, students who are more engaged in their class work are less likely to drop out of school **(**Christenson & Thurlow, 2004; Finn & Zimmer, 2012; Orthner, Akos, Rose, Jones-Sanpei, Mercado, & Woolley, 2010). Learner engagement has demonstrated a strong correlation with student achievement (Kaplan, Peck, & Kaplan, 1997; Perry, 2008).

From an economic mobility perspective, lower levels of learner engagement in classroom activities have demonstrated a correlation with living in poverty (Balfanz, Fox, Bridgeland, & McNaught, 2012), while higher levels of learner engagement are associated with future college attendance and career success (Fredricks, Blumenfeld, & Paris, 2004). Specific data from several of these studies will be presented in the literature section below.

Once the importance of learner engagement has been established, it may logically lead the reader to ask the question – if higher levels of learner engagement predict higher levels of learner achievement, then what factors help influence the level of learner engagement?

In this study, the researchers sought to identify the role that critical feedback plays in influencing the level of learner engagement. Specifically, Hierarchical Linear Modeling (HLM) was utilized to analyze differences in levels of learner engagement between 87 different secondary mathematics classrooms within 9 public schools in the state of Texas with critical learner feedback serving as the primary predictor variable.

Literature Review

The term "learner engagement" has become ubiquitous in public education, but it is not clearly defined, and is a concept that is often not fully understood (McMahon & Portelli, 2004). It is therefore important to establish a conceptual definition of engagement. For the purpose of this study, the authors have chosen to utilize Marks' (2000) definition of learner engagement, which he defines as, "a psychological process, specifically, the attention, interest, investment, and effort students expend in the work of learning" (p. 154-155).

Establishing importance of learner engagement

Learner engagement in school is a strong predictor of student persistence and high school graduation. In a national study on dropout prevention, data were collected from 44,297 children whose families received Temporary Assistance for Needy Families or Aid to Families with Dependent Children. Students and their parents were followed longitudinally throughout school-aged years in order to track factors leading to dropping out of high school.

The results indicated three key findings 1) Students in poverty graduated at higher rates if their mothers were in the labor force; 2) Academic decline during middle school was a strong predictor of high school dropout; and 3) Learner engagement during middle school was a significant predictor of high school dropout (Orthner, Akos, Rose, Jones-Sanpei, Mercado, & Woolley, 2010).

Students who are more fully engaged in their own learning perform better academically than their non-engaged peers. This may seem axiomatic, but it has been proven through

research as well. In a study of 1,195 seventh, eighth and ninth grade students, Kaplan, Peck, & Kaplan (1997) found that negative academic experiences, an attitude which devalued the importance of school, and peer relations with students who were involved in illegal or disruptive activities each had a direct negative effect on student academic performance.

Kaplan, Peck & Kaplan (1997) also noted a downward spiraling connection between poor academic performance and disengagement in which the poorer a student performed, the less likely they were to be engaged in their school work. Similarly, in a study of 1,399 students involving classroom observations and an analysis of report card grades, Reyes, Brackett, Rivers, White & Salovey (2012) found a positive relationship between classroom emotional climate and grades, mediated by the level of learner engagement.

In a study commissioned by the Bill and Melinda Gates Foundation, Balfanz, Fox, Bridgeland, & McNaught (2012), examined the antecedents that lead individuals to drop out of high school and the subsequent effect this has on communities.

In this study, disengagement from school (often at 9th grade, but sometimes as early as 3rd grade) was identified as a primary antecedent leading individuals to drop out of high school. Individuals who do drop out of high school are also negatively impacted financially, earning thousands of dollars less per year than their peers with high school diplomas (Balfanz, Fox, Bridgelan, & McNaught, 2012).

Portelli & Vibert (2002) suggest that students are unlikely to be fully engaged in learning unless they have a hand in creating that curriculum so that the learning is meaningful and relevant to the students' own lives.

But, can students legitimately have a hand in creating the curriculum without devolving the classroom into chaos? In order to explore this idea, Schuster (2011) surveyed teachers and students in 173 schools in Australia regarding learner autonomy. What they found was that the most common method for including students in their own curriculum development was rooted in the use of a learning plan co-created by teacher and student.

The learning plan was defined by Schuster (2011) fairly broadly, including portfolios, individualized learning plans, and formalized learning contracts. While there were myriad different ways in which these schools promoted learner autonomy, students who had a hand in their own learning reported higher levels of learner engagement than their peers who had no such involvement.

Bert (2011) notes one way to improve learner engagement is to place whiteboards in the hands of every student in a math classroom, thus allowing every child a chance to demonstrate competence (or the need for remediation) to the teacher. To be sure, some classroom activities lend themselves more to high levels of learner engagement than others.

For example, Kidwell (2010) suggests the following: service learning, problem based learning, organized debate, and persuasive writing. Similarly, group centers and literacy workstations have been suggested as strategies for increasing learner engagement (Peterson & Davis, 2008). However, if students do not feel connected with their in-class social group, they are unlikely to be engaged in any classroom activity (Lowder, 2009).

Examining role of critical feedback

The authors of this study were interested in identifying the role that critical feedback from teachers may play in influencing the level of their students' engagement. Because this study was conducted in the state of Texas, that state's teacher evaluation system provides the definition of critical feedback utilized within this study.

According to Texas' Professional Development Appraisal System (PDAS) Scoring Criteria Guide, administrators should look for the following when assessing the level of feedback provided by teachers to their students, "Teacher gives specific and immediate feedback, when appropriate; feedback pinpoints needed corrections; feedback provides clarification of the content; and feedback moves the student toward success with the learning objective." (Texas Education Agency, 2004, p. 22).

Every individual delivers feedback in a slightly different way (Glickman, Gordon, & Ross-Gordon, 2012). Some may have a directive approach in which they simply identify areas of deficit. Others are more collaborative, working with their students to identify areas of strength and future growth, while some individuals may prefer that students decide for themselves where they would like to focus their attention.

What Glickman, Gordon, and Ross-Gordon (2012) emphasize is that none of these methods of providing feedback is wrong. If the individual is intrinsically motivated to learn and is demonstrating that he/she is already taking control of his/her own learning, a non-directive approach to feedback may be perfectly appropriate, for other students, a directive approach may be necessary.

To be sure, each child will respond differently to feedback. This may be particularly true of students with behavioral or emotional concerns (Glen, Heath, Karagiannakis, & Hoida, 2004). Duchaine, Jolivette, & Fredrick (2011) found that behavior specific praise statements were particularly beneficial to students in secondary mathematics classrooms who suffered from behavior disorders.

In their experimental study, one group of students were intentionally provided with at least one behavior specific praise statements per 15 minute instructional cycle, while a control group received no such intervention in their mathematics classes. Following the experiment, students who had received the intervention saw a greater rise in their mathematics performance than their counterparts who received no such feedback. Thus it is paramount that teachers correctly determine how best to deliver critical feedback to each child based on that individual child's need.

Unfortunately, delivering feedback to students is not a strength every teacher has refined. Van Petegem, Deneire, & De Maeyes (2008) conducted a study of 1,140 high school students in Belgium in which they allowed the students to assess 10 dimensions of classroom quality. The quality of feedback they received from their teachers received one of the lowest ratings.   Thus it would seem that the improvement of teacher feedback to students may be one way to help improve student learning.

So how can teachers improve the way they give feedback to students? Docheff (2010) suggests a sandwich approach in which a teacher identifies an area of strength for the child, then has a focused conversation regarding the targeted area of improvement, and ends the feedback with a re-statement of the child's area of strength. Covey (2009) would seem to agree with this strategy as it

allows the individual to both improve areas of deficit as well as gaining confidence to further hone and refine their areas of strength.

A new technology may also prove useful in this regard. Recently, educators have begun to utilize student response systems (clickers) to allow all students the opportunity to respond to questions quickly and efficiently. Vital (2012) suggests that one benefit of utilizing clickers is that they provide learners with immediate visual feedback to their responses.

Providing critical feedback is important in any classroom, but may be particularly vital in classrooms with large amounts of students (Burrows & Shortis, 2011). Feedback may also be an important factor in improving mathematics achievement. In a longitudinal study that tracked 13,043 students from Kindergarten to eighth grade, Bodovski & Farkas (2007) found that the two best predictors of mathematics success were the level of beginning mathematics knowledge and level of learner engagement.

It is the purpose of this study to examine the relationship between critical feedback and learner engagement in secondary mathematics classrooms. The authors hypothesize that as the level of teacher feedback rises, student engagement will rise as well.

Method
Participants
The authors analyzed walkthrough observations conducted during the 2009-2010 school year, utilizing the 360 Degree Walkthrough form (Goldhorn, Kearney & Webb, 2012). During that year, a total of 10,117 walkthroughs from 84 schools across Texas were uploaded into the 360 Database. Before analyzing the data, permission was requested from school districts. Only those districts that chose to share the data

were included in subsequent analyses. Next, researchers excluded all walkthrough data from elementary campuses.

Finally, walkthrough data collected from classrooms teaching any subject other than mathematics were excluded from further analysis. This resulted in a total of 459 walkthroughs collected from 87 different classrooms, within 9 public schools in Texas, which were all included in the statistical analysis. Six of the campuses were coded as Middle School campuses (two campuses served grades 6-8, and four campuses served grades 7-8), while three of the campuses were coded as High School campuses (serving grades 9-12).

School size was measured in terms of student enrollment for participating schools (student enrollment within the participating schools ranged from 92 to 777 students). Socioeconomic status (SES) was measured as the percentage of students qualifying for free or reduced-price lunch (which ranged from 46.4% to 95.1% for campuses participating in this study).

Instrumentation
In order to explore the relationship between critical feedback and learner engagement, data were collected utilizing the 360 Degree Walkthrough collection instrument. This instrument was designed by the Education Service Center, Region 20, under the authority of the Texas Education Agency (Goldhorn, Kearney, & Webb, 2012). The 360 Degree Walkthrough embeds the classroom domains and teacher competencies found in the Professional Development and Appraisal System (PDAS), which is the method of teacher evaluation utilized by roughly 99% of the school districts in Texas (Texas Education Agency, 2012a). The 360 Degree Walkthrough was uniquely well suited for this study as it assesses both level of learner engagement and critical feedback from teacher to students.

Learner engagement is a single item measured on a 5-point scale: 1 = Rebellion, 2 = Retreatism, 3 = Passive Compliance, 4 = Ritual Engagement, and 5 = Authentic Engagement (Schlechty, 2011). Campus administrators assessing the level of learner engagement recorded the number of students they observed at each level of learner engagement. Teacher feedback on learner progress was the information that was drawn directly from the PDAS teacher supervision documentation.

According to PDAS, there are 6 criteria that together inform the domain of teacher feedback on learner progress (Education Service Center, Region 13, 2012): (a) Student work is monitored and assessed, (b) Assessment and instruction are aligned, (c) Assessments are used appropriately, (d) Learning is reinforced, (e) Constructive feedback is provided, and (f) Students are provided opportunities for re-learning and re-evaluation.

For the purpose of this study, critical learner feedback was assessed on a 7-point scale ranging from a minimum of 0 to a maximum of 6 observed criteria in the domain of learner progress. Reliability analyses were conducted in order to determine the reliability of critical feedback as measured by the six items from the PDAS instrument as listed above. These analyses yielded a Cronbach's alpha reliability coefficient of .752 for critical feedback.

Procedures
Data were collected by certified school administrators who had previously received 45 hours of training in Instructional Leadership Development (ILD), 20 hours of training in PDAS, and 8 hours of training in the use of the 360 Degree walkthrough instrument (Goldhorn, Kearney, & Webb, 2012).

During their walkthrough training, data collectors (school administrators) had the opportunity to calibrate their ratings of both engagement and critical feedback. After receiving research-based information about each domain and criteria, administrators and trainers conducted live classroom walkthroughs of real classrooms. Each participant completed a walkthrough form and then shared their assessments and rationale with one another. Trainers attempted to not be the "expert in the room" determining teacher ratings.

Thus, when opinions differed, trainers pointed participants back to the research and glossary provided during the training for clarification. After this training was completed, administrators conducted walkthrough observations on their own campuses, the results of which were automatically uploaded into the confidential statewide 360 Database.

Data analysis
Given the nested structure of the data, teacher feedback to students and learner engagement occurring at the classroom level and school size and SES occurring at the school level, the unit of analysis created a methodological dilemma.

In the past, researchers have chosen to address this issue by aggregating individual level variables to the group level (e.g., district, school, classroom) or assigning group-level variables to the individual level (e.g., student).

This statistical strategy often poses many challenges, such as: (a) aggregation bias, (b) heterogeneity of regression among groups, and (c) misestimated standard errors (Raudenbush & Bryk, 2002). As a result, it was necessary to analyze the data using a multi-level analysis technique, such as Hierarchical Linear Modeling (HLM).

Hierarchical linear modeling has distinct advantages over single-level analysis techniques by allowing for the analysis to be conducted simultaneously at multiple levels by using procedures that let the researcher examine relationships among variables within a nested structure, such as students within a classroom, thereby preventing the bias toward the rejection of the null hypothesis and thus the inflation of Type-I errors (Frank, 1999; Raudenbush & Bryk, 2002). As a result, estimations could be made for between-classroom variables (teacher feedback on learner progress, level of learner engagement) and between school variables (school size, SES).

For the purpose of the analyses, level-1 was the classroom level and level-2 was the school level. First, an estimation of an unconditional or intercept only model was conducted to determine the existence and degree of unexplained variance in learner engagement between classrooms. Second, a level-1 model estimation was completed, which included ratings of feedback to learners and engagement of learners. Finally, a full level-2 model estimation followed with school size and socioeconomic status as the level 2 predictors of the intercept and the level 1 slopes. All variables were treated as continuous (see Table 1).

Table 1

List of Level 1 and Level 2 Variables

Classroom Level Level 1	School Level Level 2	Source of Information
Level of Learner Engagement		360 Degree Walkthrough
Critical Feedback		360 Degree Walkthrough
	School Size	AEIS Reports
	Socioeconomic Status	AEIS Reports

Note. AEIS stands for Academic Excellence Indicator System (Texas Education Agency, 2012b).

Results

Variability of learner engagement between classrooms

Do walkthroughs in different classrooms reveal varying levels of learner engagement from one class to another? The one-way ANOVA with random effects model (also known as the null or unconditional model) was used to determine the existence and degree of unexplained variance in learner engagement between classrooms.

Findings indicated that unexplained variation existed in learner engagement in

mathematics between classrooms ($\chi^2 =$ 2575.14, $p < .001$). The intra-class correlation (ICC), or the ratio of between-group variance to total variance, was .839, indicating that 83.9%

of the overall variation in learner engagement lies between classrooms. Table 2 reports the results of the one-way ANOVA model for engagement of the class in mathematics.

Table 2

Level of Learner Engagement: Results from the One-Way ANOVA Model

Fixed Effects	Coefficient (SE)	t (df)	*p*-value
Model for Intercept (β_o)			
Intercept (γ_{00})	3.600 (.09)	38.959 (86)	<.001

Random Effects (Variance Components)	Variance	χ^2 (df)	*p*-value
Var. in school means, (τ_{oo})	0.70	2575.14 (86)	<.001
Var. within schools, (σ^2)	0.13		

One-Way ANOVA Model in Equation Format:

Level 1 (Classroom Level):
Learner Engagement$_{ij} = \beta_{0j} + r_{ij}$

Level 2 (School Level):
$\beta_{0j} = \gamma_{00} + u_{0j}$

Impact of critical feedback on learner engagement

What is the impact of critical feedback on the level of learner engagement? In the random coefficient model (also known as the random intercept and slope model), variables at the student level were added to the level 1 equation to assess whether the level of critical feedback was related to learner engagement in mathematics activities.

Results indicated that there was a statistically significant difference in the level of engagement in mathematics classrooms ($\gamma_{10} = 0.12$, $t = 7.83$, $p < .001$), favoring classrooms in which learners received higher levels of feedback from the teacher. Level of critical

feedback accounted for 14.0% of the classroom-level variance in learner

engagement. Table 3 displays the results of the random coefficient model.

Table 3

Feedback on Learner Progress: Results from the Random Coefficient Model

Fixed Effects	Coefficient (SE)	t (df)	*p*-value
Model for Intercept (β_o)			
Intercept (γ_{00})	3.60 (.09)	38.95 (86)	<.001
Model for Feedback on Learner Progress slope (β_1)			
Intercept (γ_{10})	0.12 (.02)	7.83 (457)	<.001
Random Effects (Variance Components)	Variance	χ^2 (df)	*p*-value
Var. in school means, (τ_{oo})	0.70	2999.59 (86)	<.001
Var. within schools, (σ^2)	0.11		

Random Coefficient Model in Equation Format:

Level 1 (Classroom Level):
Learner Engagement$_{ij}$ = β_{0j} + β_{1j}(Critical Feedback)$_{ij}$ + r_{ij}

Level 2 (School Level):
β_{0j} = γ_{00} + u_{0j}
β_{1j} = γ_{10} + u_{1j}

Impact of school size and socioeconomic status

Does learner engagement vary based on school size or wealth? In the intercepts and slopes-as-outcomes model, two variables at the school level were added to the level 2 equation to assess whether critical feedback on learner progress was related to learner engagement when factoring in school size and socioeconomic status. Findings indicated that a

statistically significant relationship existed between feedback on learner progress and learner engagement regardless of school size and SES ($\gamma_{10} = 0.12$, $t = 7.83$, $p < .001$).

Neither socioeconomic status nor school size made a statistically significant contribution to the model. Table 4 displays the results of the intercepts and slopes-as-outcomes model.

Table 4

Feedback on Learner Progress, School Size, and SES: Results from the Intercepts and Slopes-as-Outcomes Model

Fixed Effects	Coefficient (SE)	t (df)	p-value
Model for Intercept (β_o)			
Intercept (γ_{00})	3.60 (0.09)	39.35 (84)	<.001
Socioeconomic Status (γ_{01})	-.01 (.01)	-1.80 (84)	0.08
School Size (γ_{02})	-.00 (.00)	-0.46 (84)	0.65
Model for Feedback on Learner Progress slope (β_1)			
Intercept (γ_{10})	0.12 (0.02)	7.83 (455)	<.001

Random Effects (Variance Components)	Variance	χ^2 (df)	p-value
Var. in school means, (τ_{oo})	0.69	3048.62 (84)	<.001
Var. within schools, (σ^2)	0.11		

Intercepts and Slopes as Outcomes Model in Equation Format:

Level 1 (Classroom Level):
Learner Engagement$_{ij}$ = β_{0j} + β_{1j}(Critical Feedback)$_{ij}$ + r_{ij}

Level 2 (School Level):
β_{0j} = γ_{00} + γ_{01}(SES)$_j$ + γ_{02}(School Size)$_j$ + u_{0j}
β_{1j} = γ_{10}

Discussion

In the results presented above, the unconditional model was designed to address the question – is there a difference in the level of learner engagement between classrooms? Or in other words, are students more likely to be engaged with one teacher than another?

The results of this analysis, known as the intra-class correlation, or ICC, indicate that yes, in fact, students are more often observed to be engaged in some classes than they are in others. While this may seem intuitive, it is a necessary precondition before examining why that difference may occur.

The second analysis (the random coefficients model) sought to explore whether critical feedback plays a role in determining the level of learner engagement. The results again provided data in the affirmative.

When teachers take time to provide feedback to students, they are more likely to be engaged in their class work. This is particularly relevant in mathematics classrooms where concepts build on one another.

If whole group instruction is the default method of knowledge dissemination and a student misses one concept, this will make the next mathematical concept significantly more difficult to understand (Oikkonen, 2009).

However, when teachers take the time to work with students one on one, they appear to be better able to communicate concepts that may have otherwise been missed. Thus teacher feedback appears to play a significant role in the level of learner engagement in mathematics classrooms.

Not all of the variability in learner engagement lies between classrooms. There may also be school level factors at play. Historically, two of the most common factors

associated with campus level achievement are school size and wealth or socioeconomic status (SES). Given that prior literature has indicated the important role these factors play, it was necessary to examine their role in this study.

School size

Within this study, school size did not make a significant independent contribution to the level of learner engagement. It should be noted that all schools in this study had small (N = 92) to medium sized (N = 777) student populations. For the schools that participated in this study, critical feedback demonstrated its usefulness in keeping students engaged in their learning, regardless of school size.

Thus, an increased focus on the provision of critical feedback to individual students may well help mitigate some of the challenges associated with large schools. This hypothesis merits further analysis, and would require duplication of this (or another similar) study in schools with larger student populations.

Socioeconomic status

Traditionally, one of the best predictors of student success on achievement tests is wealth or SES (Books, 2007; Riegle-Crumb & Grodsky, 2010). This uncomfortable truth leaves the reader with two choices: either throw up one's hands and resign one's self to economic pre-determinism or search for factors that influence learner engagement in all classrooms, regardless of wealth.

Within this study, administrators observed higher levels of learner engagement when their teachers spent time giving each student feedback. This was just as true in wealthy classrooms as it was in classrooms of poverty. Thus the delivery of critical feedback is one vehicle that teachers can use to promote learner engagement and help reduce the socioeconomic achievement gap.

Implications

One limitation of this study is that it examined only secondary math classrooms in small to medium-sized public schools in Texas, which limits the generalizability of this study. It may be of value to the field for future research to be conducted in a wider array of classrooms.

For example, the authors intend to conduct future research to determine if similar results will be found in large high schools in Texas.

It may also be useful to examine whether similar results would be found in different regions of the United States or internationally. The method of data collection is also a significant limitation of this study.

This study utilized data from administrative walkthroughs which were conducted at the classroom level. Thus aggregation bias was introduced by not specifically reporting scores for each student within the classroom.

One possible refinement for future research may be to collect a student self-report instrument in which students themselves report their own level of engagement along with their own perceptions of the level of critical feedback they have received.

Modeling critical feedback is an important point for administrators to consider. There may well be a measurable link between teachers providing feedback to their students and administrators providing feedback to their teachers.

While no data was collected on administrators, it is interesting to note anecdotally that as the researchers were collecting the data for this study, they noticed that there were a number of instances in which administrators ignored feedback and focused on instruction.

For example, during one observation, the principal left the room while students were engaged in individual practice and the teacher was providing specific feedback to an individual student. When asked why the administrator chose to end the walkthrough observation, she replied that nothing was happening.

This action (walking out of a classroom while a teacher is providing learner feedback) devalues the importance of feedback. This may be a big missed opportunity for administrators—if the teacher is providing feedback to students, this is an activity that is worth observing.

If the administrator remained in the classroom in these situations, they could afford themselves the opportunity to supervise, observe, and later give feedback to teachers about the way in which they provided critical feedback to their students.

Conclusion

In an age of increased accountability, educational policy makers often focus on the end goal while losing sight of the important factors that help lead to success.

In this modest research paper, the authors have attempted to shine light on one factor that appears to contribute to increased levels of learner engagement. Hierarchical Linear Modeling was utilized to examine the relationship between critical feedback and learner engagement in secondary mathematics classrooms.

The results of the multi-level analyses indicate that regardless of school size or socioeconomic status, secondary level

classrooms in which teachers are observed providing students with critical feedback on their mathematics assignments are more likely to have higher levels of engagement than do classrooms with lower levels of critical feedback.

Author Biographies

W. Sean Kearney is a tenured-track assistant professor of educational leadership at Texas A&M University in San Antonio. He has research interests in principal influence, change orientations, school culture and climate, and the confluence of administration, ethics, and emotionally intelligent leadership. E-mail: wowek.kearney@tamusa.tamus.edu

Michael Webb is a former high school principal who currently serves as an administrative specialist and 360 Walkthrough program coordinator at the Education Service Center, Region 20 in San Antonio. E-mail: michael.webb@esc20.net

Jeff Goldhorn is component director for leadership and instructional services for Education Service Center, Region 20 in San Antonio. He leads teams in the areas of leadership development, principal and teacher certification, mathematics, science, ELA, social studies, and advanced academic services. E-mail: jeff.goldhorn@esc20.net

Michelle Peters is a tenured-track assistant professor of research and applied statistics at the University of Houston in Clear Lake. Her research focuses on STEM education, psychosocial elements of learning environments, and studies involving the impact of motivational factors on mathematics. E-mail: petersm@uhcl.edu

References

Argyris C., & Schön D. A. (1996). *Organizational learning II - Theory, method and practice.* Reading, MA: Addison Wesley.

Bert, C. (2011). *Maximizing student engagement in the classroom.* Milwaukee, WI: Moose Moss Press.

Balfanz. R., Fox.J., Bridgeland, J., & McNaught. M. (2012). *Grad nation: A guidebook to help communities' tackle the dropout crisis.* Retrieved from http://new.every1graduates.org/wp-content/uploads/2012/03/GradNation_All_Tools.pdf

Bodovski, K., & Farkas, G. (2007). Mathematics growth in early elementary school: The roles of beginning knowledge, student engagement, and instruction. *Elementary School Journal, 108*(2), 115-130.

Books, S. (2007). What are we talking about when we talk about "closing the achievement gap"? *International Journal of Learning, 14*(2), 11-17.

Burrows, S., & Shortis, M. (2011). An evaluation of semi-automated, collaborative marking and feedback systems: Academic staff perspectives. *Australasian Journal of Educational Technology, 27*(7), 1135-1154.

Christenson, S. L., & Thurlow, M. L. (2004). School dropouts: Prevention considerations, interventions, and challenges. *Current Directions in Psychological Science, 13,* 36 –39.

Covey, S. (2009). *The leader in me: How schools and parents around the world are inspiring greatness, one child at a time.* Florence, MA: Free Press.

Docheff, D. (2010). Theory into practice. *Strategies, 23*(6), 34-35.

Duchaine, E. L., Jolivete, K., & Fredrick, L. D. (2011). The effect of teacher coaching with performance feedback on behavior-specific praise in inclusion classrooms. *Education & Treatment Of Children*, *34*(2), 209-227.

Education Service Center Region 13 (2012). *Professional development appraisal system.* Retrieved from http://www4.esc13.net/pdas/

Finn, J. D., & Zimmer, K. S. (2012). Student engagement: What is it? Why does it matter? In S. L. Christenson, A. L. Reschly, & C. Wylie (Eds.), *The handbook of research on student engagement* (pp. 97–130). New York, NY: Springer.

Frank, K. (1999). Quantitative methods for studying social context in multilevels and through interpersonal relations. *Review of Research in Education, 23,* 171-216.

Fredricks.J. A.. Blumenfeld. P G., & Paris.A. H. (2004). School engagement: Potential of the concept, state of the evidence. *Review of Educational Research, 14,* 59-109.

Glen, T., Heath, N., Karagiannakis, A., & Hoida, D. (2004). Feedback practices in a sample of children with emotional and/or behavioral difficulties: The relationship between teacher and child perceptions of feedback frequency and the role of child sensitivity. *Emotional & Behavioral Difficulties, 9*(1), 54-69.

Glickman, C., Gordon, S., & Ross-Gordon, J. (2012). *The basic guide to supervision and instructional leadership* (3rd edition). Boston: Allyn & Bacon.

Goldhorn, J., Kearney, W.S., & Webb, M. (2012). Classroom walkthrough practices: Lessons learned from 10,000 observations. *National Forum of Educational Administration and Supervision, 30*(2), 4-12.

Kaplan, D. S., Peck, B., & Kaplan, H. (1997). Decomposing the academic failure-dropout relationship: A longitudinal analysis. *Journal Of Educational Research*, *90*(6), 331.

Kidwell, C. L. (2010). The impact of student engagement on learning. *Leadership, 39*(4), 28-31.

Lowder, J. (2009). More than events: Focusing on student engagement and development. *Campus Activities Programming, 41*(7), 18-20.

Marks, H. M. (2000). Student engagement in instructional activity: patterns in the elementary, middle, and high school years. *American Education Research Journal, 37*(1), 153-184.

McMahon, B., & Portelli, J. P. (2004). Engagement for what? Beyond popular discourses of student engagement. *Leadership & Policy in Schools, 3*(1), 59-76.

Oikkonen, J. (2009). Ideas and results in teaching beginning math students. *International Journal of Mathematical Education In Science & Technology, 40*(1), 127-138.

Orthner, D. K., Akos, P., Rose, R., Jones-Sanpei, H., Mercado, M., & Woolley, M. E. (2010). CareerStart: A middle school student engagement and academic achievement program. *Children & Schools, 32*(4), 223-234.

Perry, J. C. (2008). School engagement among urban youth of color: Criterion pattern effects of vocational exploration and racial identity. *Journal of Career Development, 34,* 397-422.

Peterson, K., & Davis, B. (2008). A novice teacher improves student engagement through goal setting and literacy work stations. *Ohio Journal of English Language Arts, 48*(1), 17-23.

Portelli, J. P., & Vibert, A.B. (2002). A curriculum of life. *Education Canada, 42,* 36–39.

Raudenbush, S., & Bryk, A. (2002). *Hierarchical linear models: Applications and data analysis methods.* Thousand Oaks, CA: Sage Publications.

Reyes, M. R., Brackett, M. A., Rivers, S. E., White, M., & Salovey, P. (2012). Classroom emotional climate, student engagement, and academic achievement. *Journal of Educational Psychology*, *104*(3), 700-712.

Riegle-Crumb, C., & Grodsky, E. (2010). Racial-ethnic differences at the intersection of math course-taking and achievement. *Sociology of Education, 83*(3), 248-270.

Schlechty, P. (2011). *Engaging students: The next level of working on the work.* San Francisco: Jossey-Bass.

Schuster, S. (2011). Learner autonomy: A theoretical phantasm? *International Journal of Learning, 18*(4), 159-180.

Texas Education Agency (2004). Scoring Criteria Guide. Retrieved from: www4.esc13.net/uploads/pdas/docs/ScoringCriteriaGuide.pdf

Texas Education Agency (2012a). *Texas education code*. Retrieved from http://www.statutes.legis.state.tx.us/Index.aspx

Texas Education Agency (2012b). *Academic excellence indicator system*. Retrieved from http://ritter.tea.state.tx.us/perfreport/aeis/

Van Petegem, P., Deneire, A., & De Maeyer, S. (2008). Evaluation and participation in secondary education: Designing and validating a self-evaluation instrument for teachers to solicit feedback from pupils. *Studies In Educational Evaluation, 34(*3), 136-144.

Vital, F. (2012). Creating a positive learning environment with the use of clickers in a high school chemistry classroom. *Journal of Chemical Education*, *89*(4), 470-473.

Implicit Theories of Intelligence and Personality, Self-efficacy in Problem Solving, and the Perception of Skills and Competences in High School Students in Sicily, Italy

Concetta Pirrone, PhD
Department of Educational Processes
University of Catania
Catania, IT

Elena Commodari, PhD
Department of Educational Processes
University of Catania
Catania, IT

Abstract

Various theories of intelligence and personality (TIP) help explain the implicit beliefs that an individual develops about the functioning of his intelligence and personality. Such beliefs are defined "implicit" because the individual might not be fully aware of his or her belief system. The results from scientific research on the TIP suggest that the implicit beliefs on intelligence and personality have implications on self-efficacy, motivation, and learning behavior. This study included 120 high school students in their last two years of schooling in Sicily, Italy. We used three surveys to assess the relationships among (a) individual beliefs about intelligence and personality (entity/incremental beliefs; confidence), (b) self-efficacy in the area problem solving, (c) personal learning goals, and (d) individual beliefs about one's own academic competences and abilities. We calculated descriptive statistics related to the gender, used several ANOVA statistics, and conducted correlation and regression analyses. Results showed that the variable "confidence on intelligence and personality" was linked to the "self-efficacy in the problem solving."

Keywords

self-efficacy, problem-solving, high school achievement

The various theories of intelligence and personality (TIP) help explain the implicit beliefs that an individual develops about the nature and the functioning of intelligence and personality. Such beliefs are defined "implicit" because the individual might not be fully aware of his or her belief system. However, these beliefs about intelligence and personality influence information processing and the interpretation of one's academic progress (Cain & Dweck, 1989; Dweck, 1986; Plaks, 2002), which in turn influences learning. As Dweck and Bempechat (1983) suggested, TIP can be subdivided in "entity" and "incremental" theories.

Entity theories are based on the beliefs that intelligence is a fixed and relatively unchangeable entity; either you've got it or you don't. Conversely, incremental theories are based on the idea that intelligence is modifiable, and constituted from knowledge and abilities that can be increased through the practical use of knowledge and skills (Bråten, & Strømsø, 2004; Jacobson, 1999, Leondari and Giallamas, 2002). Incremental theories align with Piagetian developmental theories of cognitive development and progressive philosophies of learning.

Purpose
Our purpose for this study was to explain the relationship among (a) individual beliefs about intelligence and personality (entity/ incremental beliefs; confidence), (b) self-efficacy in the area problem solving, (c) personal learning goals, and (d) individual beliefs about one's own academic competences and abilities.

Many of the previous studies on these topics have been conducted by using a more global definition of self-efficacy, and not focused in any one category. Thus, many of the previous studies did not produce clear implications for learning in any one area. For this study we investigated self-efficacy in the

area of problem solving. Self-efficacy in problem solving plays a pivotal role in learning contexts that transcend different subjects.

Literature
Theories of intelligence and personality
Individual beliefs on intelligence and personality are related to the level of "confidence" that each person develops about his mental abilities. Some children are very confident in their academic abilities whereas others are not so confident. Moreover, "implicit theories" and level of "confidence" are linked to self-efficacy, motivation, persistence, and learning behaviors. If a student "thinks he can" he is more apt to persist.

In particular, implicit beliefs influence goal planning and the use of meta-cognitive and other learning strategies (VandeWalle, et al., 1997). Molden and Dweck (2006) found those who have an "entity" outlook are oriented toward extrinsic goals (e.g. carrots and sticks) in learning, whereas children with an "incremental" outlook tend to be oriented to "intrinsic" goals (personal goal setting).

Children that hold an "entity theory" engage in learning for the sake of demonstrating their abilities in relation to other students or because the "teacher said so." They aim at obtaining a grade or avoiding punishment (Abdullah, 2008): learning for external reasons. Children who hold "incremental" beliefs aim at increasing their abilities and competences because they have a personal goal to improve or grow as a person.

Results from some studies suggest that students with incremental beliefs demonstrate better performance in school on traditional measures compared to the students who adhere to an entity theory (Molden and Dweck, 2006). However, some researchers found that students with entity beliefs do not always trail their peers who hold incremental beliefs. Ziegler and

Stoeger (2010) found that entity beliefs could carry inadequate cognitive, scholastic, and/or social adjustment characteristics only in particular circumstances; for example if a child presents some psychological or cognitive impairment.

Self-efficacy

Self-efficacy consists of the beliefs that the individual develops in regards to the personal ability to dominate specific activities and situations.

Self-efficacy is related to the ability to operate with self-awareness, with the aim to obtain specific goals according to personal standards of excellence. Some researchers suggest that an individual's self-efficacy in various areas helps to account for the level of success in those areas.

Self-efficacy can influence the degree to which a student considers himself capable of carrying out an academic activity. Allison and Urdan (1993) suggested that self-efficacy influences learning goal planning, and several studies evidenced that the students with high self-efficacy engage themselves in difficult tasks, using better solution strategies than those with low self-efficacy regardless of their implicit belief system (Schunk & Pajares, 2001).

Numerous researchers have analyzed the relationships between implicit theories and other psychological variables. Moreover, many researchers have investigated the relationships between implicit beliefs and personal learning goals.

The results of these studies were mixed and the results were difficult to generalize. For these reasons the previous findings are not easy to apply in school settings across the board.

Procedures and Methods
Participants

The participants were 120 students who attended a public high school in the city of Catania, on the island of Sicily, Italy. The students were in their final two years of high school. They were enrolled in various academic tracks and represented a cross-section of the academic levels in the school. The mean age of the students in the sample was 17.39 with a standard deviation: .96 years. There were 50 males and 70 females in the sample. We used convenience sampling with intact groups.

Measures

The research was conducted using three different measures. The first measure, *Questionnaire on Beliefs*, was drawn from the *Ability and Motivation* battery of instruments (AMOS, De Beni, Moè, & Cornoldi; 2003). This measure comprised six parts.

The first and the second parts measured the inclination to adopt "incremental" or "entity" beliefs on intelligence and personality. The scale for responses ranged from 1 to 6 with 1 being least desirable.

The third and the fourth parts measured the "confidence" that the participant put in his intelligence and personality. The scale for responses ranged from 1 to 3 with 1 being least desirable. The fifth part measured the perception of scholastic competence. The scale for responses ranged from 1 to 5 with 1 being least desirable. The sixth part evaluated academic goal setting, and the preference for different types of task (new and difficult tasks or routine and easy tasks). The questionnaire achieved acceptable psychometric characteristics. The Cronbach alphas ranged from .58 to .86, and the test-retest coefficients ranged from .56 to .82.

The second measure was the *Self-Efficacy in Problem Solving* questionnaire (Barbaranelli and Steca, 2001). The questionnaire claims to measure the individual beliefs on ability to solve problems in creative, critical, and innovative ways. The scale is constituted from 14 items. The questionnaire achieved acceptable psychometric characteristics. The Cronbach alpha was observed at .87.

The third measure was the *Competences and Abilities* scale (Di Nuovo, 2003). The scale is part of a questionnaire on scholastic guidance. It evaluated 13 working values. The test-retest reliability of the instrument was .70 and the validity was confirmed from a factorial analysis.

Results

First, we calculated descriptive statistics with respect to the variable "gender," and then conducted a *t*-test analysis. The variable "age" was not taken in consideration in the study because the range of age was very limited. Second, several factorial ANOVA, correlation and regression analyses were calculated to explain the various relationships.

t-test analysis respect to the variable gender

The *t*-test analysis demonstrated no statistically significant differences in the scores with respect to gender on any of the measures.

Factorial ANOVA

Participants were divided into four groups based on the scores obtained in the *Questionnaire on Beliefs* (entity/incrementality" and "confidence"

scores). The first group included the students who obtained a score less than or equal to 43.9 (1st-24th percentile); the second group comprised the students who obtained a score more than 43.9 but less than or equal to 51.9 (25th-49th percentile); the third group comprised the students who obtained a score greater than 51.9, but less than or equal to 58.75 (50th-74th percentile); the fourth group included the subjects that obtained a score greater than 58.75 ($>.75^{th}$ percentile).

To examine the variable "confidence," we divided the students into four groups based on their scores from the questionnaire. The first group included the students who obtained a score less than or equal to 18.25 ($<. 24^{th}$ percentile); the second group included the students who obtained a score more than 18.25 but less than or equal to 23.09 (25th - 49th percentiles); the third group included the students who obtained a score more than 23.09 but less than or equal to 26 (50th -74th percentiles); the fourth group included the subjects who obtained a score greater than 26.01 ($> 75^{th}$ percentile).

We conducted several factorial ANOVAs using the variables "entity/incrementality" and "confidence" as independent variables, and "self-efficacy in problem solving," "goal-learning," and "self-evaluation of skills and competences" as the dependent variables. In Table 1 we present the mean scores and the standard deviations from the "*Self-Efficacy in Problem Solving*" questionnaire, differentiated with respect to the variable "entity/incrementality".

Table 1

Mean Scores and the Standard Deviation in the "Self-Efficacy in Problem Solving" Differentiated Based on the Variables "entity/incrementality" and "confidences"

entity/incrementality	confidence	*M*	*SD*
1	1	70.30	7.74
	2	70.25	5.56
	3	76.50	5.12
	4	74.25	7.88
	Total	72.75	7.16
2	1	70.50	6.54
	2	74.33	4.45
	3	75.56	6.34
	4	80.00	10.32
	Total	75.00	7.66
3	1	76.12	4.94
	2	76.50	6.86
	3	71.00	8.54
	4	79.67	8.30
	Total	76.78	7.11
4	1	72.50	3.10
	2	76.67	8.16
	3	76.00	11.31
	4	82.43	6.66
	Total	78.67	8.29
Total	1	72.20	6.49
	2	75.18	6.61
	3	75.33	7.53
	4	79.61	8.29
	Total	75.87	7.78

In Table 2 we present the results from the factorial ANOVA using "entity/ incrementality" and "confidence" as the factors, and the "self-efficacy in problem solving" as the dependent variable. Levene's test demonstrated that homogeneity of variance was within limits.

Table 2

Factorial ANOVA (Factors: entity/incrementality; confidence)

Sorgente	Type III sum of squares	Df	Mean Squares	F	Sig.
Correct model	1682.82 (b)	15	112.18	2.11	.01
Intercept	579671.56	1	579671.56	10903.48	.00
entity/incrementality	220.70	3	73.56	1.38	.25
Confidence	758.61	3	252.87	4.75	.00
entity/increm.*confidence	373.48	9	41.49	.78	.63
Error	5529.04	104	53.16		
Total	697902.0	120			
Correct total	7211.86	119			

The different factorial ANOVAs, using "learning goals" and "self-evaluation of skills and competences" as dependent variables did not produced statistically significant results.

This is an intriguing result to us. It shows that confidence on the intelligence and personality scales and the adoption of an incremental or entity theory did not influence learning goal planning and self-evaluation of academic skills and competences.

These results demonstrate the complex relationship that exists between the variables involved in school learning and achievement. The results further suggest that simplistic education policies created from the assumption of a linear relationship between these variables might not yield their desired results.

Pearson correlation matrix

In Table 3 we present the Pearson correlation matrix corrected for multiple comparisons. The "entity/incrementality" scores correlate positively with (1) "confidence" and (2) self-efficacy in the problem solving" scores; the "confidence" scores correlate positively with (1) self-efficacy in problem solving" and (2) "self-evaluation of skills and competences" scores; the "self-efficacy in problem solving" correlates positively with "self-evaluation of skills and competences" scores.

Table 3

Pearson Correlation Matrix

	1	2	3	4	5
1.Entity/incrementality					
2. Confidence	.19*				
3. self-efficacy in the problem solving	.26**	.35**			
4. learning goal	-.04	.04	.13		
5. Self-evaluation of skills and competences	.16	.20*	.27**	.05	

Sig: $p < .05$

Regression analyses

We calculated multiple linear regressions using the "entity/ incrementality" and "confidence" as independent variables and the "self-efficacy in problem solving," the "self-evaluation of skills and competences" and the "learning goal" scores as the dependents variables.

The results from the regression analyses suggested that "entity/ incrementality" and "confidence" scores influence "self-efficacy in the problem solving" scores (F: 11.35, sig. p <.001, R= .40, R square .16). The independent variables did a good job explaining the variation in the dependent variable. The t statistic, that permits us to determine the relative importance of each variable in the model, showed two useful predictors: "confidence" (t: 3.60, p < .001, CI 95% LL.20, UL: .69) and "incrementality" (t: 2.35, p= .02, CI LL: .02, US: .27).

Conclusion

The scientific literature highlighted that students can adhere to different "theories" on the nature of intelligence and personality. Beliefs on the fixity or malleability of psychological characteristics influence behavior, information processing, and learning.

Gender

Our findings on adolescent students did not show a statistically significant difference between the males and females with respect to the analyzed variables (adherence to implicit theory of intelligence and personality, confidence in intelligence and personality, learning-goal, and self-evaluation of skills and competences).

Similar to our results, some studies did not find any gender differences in the adoption of implicit theories (Di Nuovo, Pirrone &

Guarnera, 2008). In contrast, results from others studies (e.g., Ziegler & Stoeger, 2010) suggest that males adhere to an incremental theory more than females.

Of course the small sample size in our study should act as a caution to readers; do not overgeneralize these findings related to gender to all high schools in Sicily or another country. We hope our results prompt the reader to investigate the issue further at his or her school.

Confidence and self-efficacy in problem solving

Interestingly, students with different levels of "confidence" in intelligence and personality differ in the "self-efficacy in problem solving." Moreover, the level of "confidence" and "entity" or "incremental" beliefs did not influence the planning of the learning goals and the self-evaluation of academic skills and competences.

Although Molden and Dweck (2006) affirmed that individual beliefs on malleability of intelligence influenced the formation of one's learning goals and oriented the students towards intrinsic or extrinsic goals, our findings suggest that the implicit theories did not influence the formation of learning goals. Our results were similar to those obtained by Allison and Urban (2003).

The results from this study demonstrated statistically significant correlations among an individual's "implicit theory," "self-efficacy in problem solving" and "learning goals." Students in the sample who adopted an "incremental theory" indicated they had higher "confidence" in personality and intelligence, and higher "self-efficacy in problem solving" than children who adopted an "entity theory." We found these results intriguing, considering that Bandura (2000) suggested the necessity to consider the self-

efficacy as a separate set of convictions related to the different aspects of psychological functioning.

Finally, the results from the regression analyses showed that the variables "confidence" and "entity/ incremental" were related to the "self-efficacy in problem solving." However, "confidence" was the more statistically significant predictor. Therefore, the degree of "confidence" in intelligence and personality influence the "self-efficacy in problem solving" more than the individual beliefs on intelligence and personality.

The finding could have interesting applications in the education field. First, our results contribute to deepen the discussion on the role that the implicit theories of intelligence have on the planning of goals in the scholastic context. The Dwek and Legget (1988) model is object of a deep revision.

According to this model, "incremental theory" oriented the individual towards intrinsic goal, which were considered more "functional" than extrinsic goals (Dwek and Leggett 1988, Dwek, 2006, Heller, Finsterwald and Ziegler, 2001). In contrast, Ziegler and Stoeger (2010) suggested that high levels of "entity theory" produced negative academic consequences.

The results from our study suggested that associating oneself to a specific "implicit theory" did not influence the planning of learning goals in the scholastic context. The individual beliefs did statistically significantly influence the ways in which the students engaged scholastic situations with confidence and self-efficacy. School administrators might seek ways to help students connect to implicit theories as methods to increase overall confidence and self-efficacy.

Author Biographies

Concetta Pirrone is a researcher in general psychology in the department of educational processes at the University of Catania in Sicily, Italy where she teaches several courses in the area of psychology. E-mail: pirroneconcetta3@gmail.com

Elena Commodari is a researcher of general psychology in the department of educational processes, University of Catania, Sicily, Italy. She teaches foundations of psychology and psychology of scholastic learning and is author of numerous articles in national and international journals. E-mail: brucomm@tiscali.it

References

Allison, J. A., & Urdan, T. C. (1993). The influence of perceived classroom goals and prior beliefs on aspects of students' motivation. Paper presented at the annual meeting of the American Educational Research Association, Atlanta, GA, April 12-16, 1993. Retrieved October 8, 2005, from *EBSCO Host* (TM020995).

Bandura, A. (1997). *Self efficacy: exercise of control.* New York: Freeman.

Bandura, A. (2000). *Autoefficacia: teoria e applicazioni.* Trento: Erickson.

Barbaranelli, C., & Steca, P. (2001). Autoefficacia nelle scelte di carriera [Self-efficacy in career choice] in G. V. Caprara (a cura di) *La valutazione dell'autoefficacia* [*The evaluation of self-efficacy*], 121-136. Trento: Erickson.

Bråten, I., & Strømsø, H. I. (2004). Epistemological beliefs and implicit theories of intelligence as predictors of achievement goals. *Contemporary Educational Psychology, 29,* 371-388.

Cain, K., & Dweck, C. S. (1989). Children's theories of intelligence: A developmental model. In R. Sternberg (Ed.) *Advances in the study of intelligence*. Hillsdale, NJ: Erlbaum.

De Beni, R., Moè, A., & Cornoldi, C. (2003). [AMOS, Skills and Motivation Study: evaluation tests and orientation]. Trento: Erickson.

Di Nuovo, S. (Ed.) (2003). *Orientamento e* Formazione [Orientation and Formation]. Firenze: OS-ITER.

Di Nuovo, S., Pirrone, C., & Guarnera, M. (2008). Career counseling, credenze e valori: alcuni dati Empirici [Career counseling: beliefs and values: some empirical data]. *Counseling*, *1*(2), 155-171.

Dweck, C.S. (1986). Motivational processes affecting learning. *American Psychologist*, *41*, 1040-1048.

Dweck, C. S. (2006). *Mindset: The new psychology of success*. New York: Random House.

Dweck, C. S., & Bempechat, J. (1983). Children's theories of intelligence: Implications for learning. In S. Paris, G. Olson, and H. Stevenson (Eds.) *Learning and motivation in children*. Hillsdale, NJ: Erlbaum.

Dweck, C. S., & Leggett, E. L. (1988). A Social-cognitive approach to motivation and personality. *Psychological Rewiev*, *95*, 256-273.

Giedd, J. N., Blumenthal, J., Jeffries, N. O., Castellanos, F. X., Liu, H., Zijdenbos, A., Paus, T., Evans, A. C., & Rapoport, J. L. (1999). Brain development during childhood and adolescence: A longitudinal MRI study. *Nature America Inc*. http://neurosci.nature.com

Hong, Y. Y., Chiu, C.Y., Derrick, M. S., Wan, L. W., Dweck, C. S. (1999). Implicit theories, attribution and coping: A meaning system approach. *Journal of Personality and Social psychology*, *77*(3), 588-599.

Jacobson, M. D. (1999). I feel like I'm the dumbest in the class: Effort persistence, and achievement motivation in the classroom. Paper presented at the annual meeting the American educational Research Association, Montreal, Quebec, April 19-23, 1999. Retrieved October 11, 2005, from *ERIC Documented Reproduction service* (ED437415).

Heller, K. A., Finsterwald, M., & Zielger, A. (2001). Implicit theories of german mathematics and physics teachers on gender specific giftdness and motivation. *Psychologiste Beitrage, 43*, 172-189.

Lee, M. (2002). Education in crisis. Retrieved June 12, 2006, from http://www.malaysia.net/alrian /monthly/2002/5b.htlm

Ng Lee yen Abdullah, M. (2008). Children's Theories of intelligence: Its relationships with self-efficacy, goal orientation, and self- regulated learning. *The International Journal of Learning*, *15*(2) 47-56.

Leonardi, A. & Gialamas, V. (2002). Implicit theories, goal orientations, and perceived competence: impact on students' achievement behavior. *Psychology in the School*, 39 (3), 279-291.

Molden, D. C., & Dweck, C. S. (2006). Finding "meaning" in psychology: A lay theories approach to Self-regulation, social perception, and social development. *American Psychologist*, *61*, 192-203.

Plaks, J., Levy, S., & Dweck, C. S., & Stroessner. S. J. (2002). In the eye of the beholder: Implicit theories and the perception of groups. In V. Yzerbyt, O. Corneille, & C. Judd (Eds.), *The psychology of group perception*. New York: Psychology Press.

Schunk, D. H. & Pajares, E. (2001). The development of academic self- efficacy. In A. Wiggield & J. Eccles (Eds), *Development of achievement motivation*. San Diego: Academic Press.

VandeWalle, D. & Cummings, L. (1997). A test of the influence of goal orientation on the feedback-seeking process. *Journal of Applied Psychology, 82*(3), 390-400.

Ziegler, A. & Stoeger H. (2010). Research on a modified framework of implicit personality theories. *Learning and individual Differences*, *20*, 318-326.

The School Reform Landscape: Fraud, Myth, and Lies
by Christopher H. Tienken and Donald C. Orlich

Reviewed by:
Michael Ian Cohen, EdD
Vice Principal
Curriculum, Data Analysis, and Professional Development
Tenafly High School
Tenafly, NJ

If anything maintains bi-partisan support in today's polarized political environment, it might be the neoliberal orientation to education reform.

Calling for standardization of curriculum and assessments, performance accountability for schools and teachers, and a culture of competition among education providers, the reform movement deifies the invisible hand of the market at the altar of corporatization.

Dissenting voices being either few in number or relatively silent in these times, Tienken and Orlich risk professional marginalization in writing *The School Reform Landscape*: *Fraud, Myth, and Lies*. But yet they demonstrate convincingly that our public education discourse is steeped in unsubstantiated and unquestioned claims that higher standards and tougher tests will solve all economic woes and social inequities.

The authors could be labeled conspiracy theorists if they were judged by their allegations alone—for example, that recent federal education laws such as *No Child Left Behind* and *Race to the Top* were really designed to dismantle the public system—but they bring the data to prove it.

When all the evidence is adduced, the authors build a frighteningly solid case. Readers should be enraged by this book and the frauds, myths, and lies put forth by the current reform spinsters.

Tienken and Orlich know their American education history, and without dragging the reader through every last detail of it, they put together a very readable account of the way recent reform efforts are only a "reincarnation" of past failures.

For example, they link the new Common Core State Standards (CCSS) and the American Diploma Project to what they call the "mechanistic" and "straight-jacketed" systems promoted by the Committees of Ten and Fifteen in the 1890s—systems that were "bankrupt" and "empirically destroyed over 85 years ago" by Thorndike's early research and Tyler et al.'s landmark *Eight-Year Study*.

Readers see that by the 1940s, non-standardized, problem-posing, learner-centered curricula had gained more evidence of effectiveness—as measured by standardized test scores, student success in college, and overall critical thinking skills—than the standards movement ever has, and probably ever will.

All of this matters because the Common Core, impending national assessments, and charter schools and other choice programs were sold to the American public in the name of closing achievement gaps between privileged and disadvantaged groups.

In reality, as Tienken and Orlich show, these on-going reforms—supported by spurious claims and political chicanery—have only moved us closer to a dual system of education: one tier of elite schools for the wealthy, and another tier of "stripped down" and under-resourced public schools for everyone else. The authors advocate the rebuilding of a unitary system of public education that promotes equity, egalitarianism, and the values of democratic participation.

According to Tienken and Orlich, efforts to centralize and homogenize American public schools have made our education system more totalitarian than democratic. And in true tyrannical form, the system has been promoted by lies—from manufactured crises to misleading and amateur interpretations of student performance on standardized exams.

Readers of this book will walk away with clear evidence of fraud, which the authors present through analyses of data from sources such as declassified government files and assessment and economics statistics.

We learn, for example, how the Russian launch of Sputnik in 1957, which caused little concern to U.S. government officials, was used by the Eisenhower administration to create a sense of inferiority in science and math education among the American public; how evaluators of the National Assessment of Educational Progress, the "Nation's Report Card," have made sweeping claims of educational decline founded on arbitrary and ideologically-based notions of "proficiency";

how international test scores and the use of national standards have no statistical relationship to economic competitiveness; how federal legislation for education reform has siphoned taxpayers' money into the coffers of textbook and test publishers—and the list goes on.

Crucially, Tienken and Orlich move beyond critique in this book. They gain credibility not by denying the need for accountability or by refusing the usefulness of standards altogether.

In fact, they call for a new kind of accountability, one that includes standards that are developmentally appropriate using evidence from cognitive psychology, challenging curriculum and assessments developed locally by teachers, and a repurposed federal education department that is concerned more with funding and equity than it is with designing classroom instruction and punishing schools. It is time to assess the inputs as well as the outputs of our education system.

An additional point we might take from this book: anyone who would engage in meaningful dialogue about education reform should know at least the basics of our nation's educational history.

Even those who claim progressive ideas today like problem-based learning, differentiation, socially-conscious curriculum—should recognize their debt to the educators who developed and rigorously tested these methods in the beginning of the previous century.

Ironically, those who call for a 21st-century public school system and hope to create such a system through standardization and assessing students with national measures are really peddling a 20th century reform: one that never proved its efficacy.

Those who call for a curriculum that is designed close to the child, not from a federal office and that values relevance to students' lives and local autonomy, are also advocating an early 20th century version of school reform.

There is a difference, though. The latter group has empirical evidence in its favor.

Reviewer Biography

Michael I. Cohen is vice principal of curriculum, data analysis, and professional development at Tenafly High School in Bergen County, New Jersey. He also teaches a graduate course in research methods as an adjunct instructor at Montclair State University. E-mail: michaeliancohen@gmail.com

The School Reform Landscape: Fraud, Myth, and Lies is written by Christopher H. Tienken and Donald C. Orlich and published by Rowman and Littlefield Publishers, Lanham, MD, 172 pages, softcover, $30.95

Mission and Scope, Copyright, Privacy, Ethics, Upcoming Themes, Author Guidelines & Publication Timeline

The *AASA Journal of Scholarship and Practice* is a refereed, blind-reviewed, quarterly journal with a focus on research and evidence-based practice that advance the profession of education administration.

Mission and Scope

The **mission** of the Journal is to provide peer-reviewed, user-friendly, and methodologically sound research that practicing school and district administrations can use to take action and that higher education faculty can use to prepare future school and district administrators. The Journal publishes accepted manuscripts in the following categories: (1) Evidence-based Practice, (2) Original Research, (3) Research-informed Commentary, and (4) Book Reviews.

The **scope** for submissions focus on the intersection of five factors of school and district administration: (a) administrators, (b) teachers, (c) students, (d) subject matter, and (e) settings. The Journal encourages submissions that focus on the intersection of factors a-e. The Journal discourages submissions that focus only on personal reflections and opinions.

Copyright

Authors please note: By submitting a manuscript the author/s acknowledge that the submitted manuscript is not under review by any other publisher or society, and the manuscript represents original work completed by the authors and not previously published as per professional ethics based on APA guidelines, most recent edition. By submitting a manuscript, authors agree to transfer without charge the following rights to AASA, its publications, and especially the *AASA Journal of Scholarship and Practice* upon acceptance of the manuscript. The *AASA Journal of Scholarship and Practice* is indexed by several services and is also a member of the Directory of Open Access Journals. This means there is worldwide access to all content. Authors must agree to first worldwide serial publication rights and the right for the *AASA Journal of Scholarship and Practice* and AASA to grant permissions for use of works as the editors judge appropriate for the redistribution, repackaging, and/or marketing of all works and any metadata associated with the works in professional indexing and reference services. Any revenues received by AASA and the *AASA Journal of Scholarship and Practice* from redistribution are used to support the continued marketing, publication, and distribution of articles.

Privacy

The names and e-mail addresses entered in this journal site will be used exclusively for the stated purposes of this journal and will not be made available for any other purpose or to any other party. Please note that the journal is available, via the Internet at no cost, to audiences around the world. Authors' names and e-mail addresses are posted for each article. Authors who agree to have their manuscripts published in the *AASA Journal of Scholarship and Practice* agree to have their names and e-mail addresses posted on their articles for public viewing.

Ethics

The *AASA Journal of Scholarship and Practice* uses a double-blind peer-review process to maintain scientific integrity of its published materials. Peer-reviewed articles are one hallmark of the scientific method and the *AASA Journal of Scholarship and Practice* believes in the importance of maintaining the integrity of the scientific process in order to bring high quality literature to the education leadership community. We expect our authors to follow the same ethical guidelines. We refer readers to the latest edition of the APA Style Guide to review the ethical expectations for publication in a scholarly journal.

Upcoming Themes and Topics of Interest

Below are themes and areas of interest for the 2012-2014 publication cycles.

1. Governance, Funding, and Control of Public Education
2. Federal Education Policy and the Future of Public Education
3. Federal, State, and Local Governmental Relationships
4. Teacher Quality (e.g., hiring, assessment, evaluation, development, and compensation of teachers)
5. School Administrator Quality (e.g., hiring, preparation, assessment, evaluation, development, and compensation of principals and other school administrators)
6. Data and Information Systems (for both summative and formative evaluative purposes)
7. Charter Schools and Other Alternatives to Public Schools
8. Turning Around Low-Performing Schools and Districts
9. Large scale assessment policy and programs
10. Curriculum and instruction
11. School reform policies
12. Financial Issues

Submissions

Length of manuscripts should be as follows: Research and evidence-based practice articles between 2,800 and 4,800 words; commentaries between 1,600 and 3,800 words; book and media reviews between 400 and 800 words. Articles, commentaries, book and media reviews, citations and references are to follow the *Publication Manual of the American Psychological Association*, latest edition. Permission to use previously copyrighted materials is the responsibility of the author, not the *AASA Journal of Scholarship and Practice*.

Potential contributors should include in a cover sheet that contains (a) the title of the article, (b) contributor's name, (c) terminal degree, (d) academic rank, (e) department and affiliation (for inclusion on the title page and in the author note), (f) address, (g) telephone and fax numbers, and (h) e-mail

address. Authors must also provide a 120-word abstract that conforms to APA style and a 40-word biographical sketch. The contributor must indicate whether the submission is to be considered original research, evidence-based practice article, commentary, or book or media review. The type of submission must be indicated on the cover sheet in order to be considered. Articles are to be submitted to the editor by e-mail as an electronic attachment in Microsoft Word 2003 or 2007.

Book Review Guidelines
Book review guidelines should adhere to the author guidelines as found above. The format of the book review is to include the following:
- Full title of book
- Author
- City, state: publisher, year; page; price
- Name and affiliation of reviewer
- Contact information for reviewer: address, country, zip or postal code, e-mail address, telephone and fax
- Date of submission

Additional Information and Publication Timeline
Contributors will be notified of editorial board decisions within eight weeks of receipt of papers at the editorial office. Articles to be returned must be accompanied by a postage-paid, self-addressed envelope.

The *AASA Journal of Scholarship and Practice* reserves the right to make minor editorial changes without seeking approval from contributors.

Materials published in the *AASA Journal of Scholarship and Practice* do not constitute endorsement of the content or conclusions presented.

The Journal is listed in the Directory of Open Access Journals, and Cabell's Directory of Publishing Opportunities. Articles are also archived in the ERIC collection.

Publication Schedule:

Issue	Deadline to Submit Articles	Notification to Authors of Editorial Review Board Decisions	To AASA for Formatting and Editing	Issue Available on AASA website
Spring	October 1	January 1	February 15	April 1
Summer	February 1	April 1	May 15	July1
Fall	May 1	July 1	August 15	October 1
Winter	August 1	October 1	November 15	January 15

AASA Resources

❖ *The American School Superintendent: 2010 Decennial Study* was released December 8, 2010 by the American Association of School Administrators. The work is one in a series of similar studies conducted every 10 years since 1923 and provides a national perspective about the roles and responsibilities of contemporary district superintendents. "A must-read study for every superintendent and aspiring system leader ..." — Dan Domenech, AASA executive director. See www.rowmaneducation.com/Catalog/MultiAASA.shtml

❖ *A School District Budget Toolkit.* In an AASA survey, members asked for budget help in these tough economic times. *A School District Budget Toolkit* provides examples of best practices in reducing expenditures, ideas for creating a transparent budget process, wisdom on budget presentation, and suggestions for garnering and maintaining public support for the district's budget. It contains real-life examples of how districts large and small have managed to navigate rough financial waters and offers encouragement to anyone currently stuck in the rapids. See www.aasa.org/BudgetToolkit-2010.aspx. [Note: This toolkit is available to AASA members only.]

❖ Learn about **AASA's books program** where new titles and special discounts are available to AASA members. The AASA publications catalog may be downloaded at www.aasa.org/books.aspx.

❖ **Join AASA** and discover a number of resources reserved exclusively for members. Visit www.aasa.org/Join.aspx. Questions? Contact C.J. Reid at creid@aasa.org.

❖ **Upcoming AASA Events**
Visit www.aasa.org/conferences.aspx for information.

➢ **2013 Summer Leadership Institute, June 26 - 28, 2013, Westin, Savannah Harbor, Savannah, GA**

➢ **2013 Legislative Advocacy Conference, July 9 - 11, 2013, Crystal Gateway Marriott, Arlington, VA**

➢ **2013 AASA & ACSA Women in School Leadership Conference, October 17 - 28, 2013, Coronado Island Marriott Resort & Spa, Coronado, CA**

➢ **2013 AASA & WELV Women's Leadership Conference, October 25 – 26, 2013, Hilton Alexandria Old Town, Alexandria, VA**

➢ **2014 National Conference, February 13 – 15, 2014, The Nashville Music City Convention Center, Nashville, TN**