Volume 4, Number 1

**Articles**

- The Ethnic Context and Attitudes toward 9th Grade Math – Sandra Graham & Jessica Morales-Chicas ................................................................. 1
- Some Contemporary Forms of the Funds of Knowledge Approach. Developing Culturally Responsive Pedagogy for Social Justice – David Subero, Ignasi Vila and Moisés Esteban-Guitart .................................................. 33
- NNESTs' Professional Identity in the Linguistically and Culturally Diverse Classrooms – Kim Hyunsook Song and Alla Gonzalez Del Castillo .................................................................................................................. 54
- Teacher-Student Relationships, Social and Emotional Skills, and Emotional and Behavioural Difficulties – Maria Poulou ......................... 84

**Reviews**

- The Autistic Brain: Exploring the Strength of a Different Kind of Mind – Carmen Agustín-Pavón ........................................................................ 109
The Ethnic Context and Attitudes toward 9th Grade Math

Sandra Graham & Jessica Morales-Chicas

1) University of California, United States

Date of publication: February 24th, 2015


To link this article: http://dx.doi.org/10.4471/ijep.2015.01

PLEASE SCROLL DOWN FOR ARTICLE
the terms and conditions of use are related to the Open Journal System and to Creative Commons Attribution License (CC-BY).
Attitudes toward 9th Grade Math

Sandra Graham  
University of California

Jessica Morales-Chicas  
University of California

Abstract

The present study examined the relations between ethnic context and attitudes about 9th grade math in youth from different ethnic groups who had recently transitioned to high school. The large sample comprised African American, Latino, White, and Asian youth ($n = 2265$, $55\%$ girls, $M_{\text{age}} = 14.6$ yrs.) A new questionnaire was developed assessing four math attitudes (perceived competence, feelings of belonging, perceive importance and anxiety in math) and two ethnic context variables (perceived same-ethnic peers in one’s math class and perceptions of the school ethnic climate). Participants listed the math course they were taking in 9th grade and then completed the questionnaire based on that class. Perceiving more same-ethnic classmates in math was related to more positive attitudes about perceived competence and feelings of belonging in math. Significant interactions between the two ethnic context variables were documented suggesting that a positive ethnic climate buffered some of the negative effects of few same-ethnic peers on perceived competence and belonging. Implications of the findings for understanding the social-motivational underpinnings of high school course-taking among multiethnic youth were discussed.

Keywords: math attitudes, 9th course taking, ethnic context
Contexto étnico y actitudes hacia las matemáticas en 9º grado

Sandra Graham  Jessica Morales-Chicas
University of California  University of California

Resumen

El presente estudio examinó las relaciones entre el contexto étnico y las actitudes hacia las matemáticas de los jóvenes de 9º curso de diferentes grupos étnicos, quienes habían pasado recientemente a secundaria. La amplia muestra incluyó jóvenes afroamericanos, latinos, blancos, y asiáticos (n = 2265, 55% niñas, $M_{edad}$=14,6 años). Se desarrolló un nuevo cuestionario para evaluar cuatro actitudes hacia las matemáticas (competencia percibida, sentimientos de pertenencia, importancia percibida, ansiedad en matemáticas) y dos variables del contexto étnico (percepción de los compañeros de la misma etnia en la clase de matemáticas y percepciones del clima étnico escuela). Los participantes cursaron matemáticas en 9º y después respondieron al cuestionario basándose en esa clase. Percibir a más compañeros del mismo grupo étnico en matemáticas estuvo relacionado con actitudes más positivas sobre la competencia percibida y sentimiento de pertenencia en matemáticas. Se recogieron interacciones significativas entre las dos variables de contexto étnico que sugieren que un clima étnico positivo atenua algunos de los efectos negativos de algunos compañeros de su misma etnia en competencia percibida y pertenencia. Se discuten las implicaciones de los resultados para la comprensión de los fundamentos socio-motivacionales en la elección de cursos de la escuela secundaria entre la juventud multiétnica.

Palabras clave: actitudes hacia las matemáticas, 9º curso, contexto étnico
he transition to high school can be a stressful experience for just about anyone (see Benner, 2011). For most students, 9th grade is their first exposure to a fully departmentalized curriculum, near universal academic tracking, the accumulation of credits, and other constant reminders of graduation requirements. The size and bureaucratic structure of most urban high schools also undermine a sense of belonging and connection at a time when adolescents are particularly concerned with finding their niche and fitting in (Crosnoe, 2011). In light of such challenges, it is not surprising that researchers have found a general decline in motivation and achievement during the transition to high school from which some students never fully recover (e.g., Reyes, Gillock, Kobus, & Sanchez, 2000).

Relatively little is known about the high school transition of adolescents of color despite the fact that they face particular kinds of vulnerabilities beyond the normative challenges described above. For example, Black and Latino youth do more poorly in high school on virtually every academic indicator (NCES, 2014); they are also at greater risk of dropping out (Rumberger, 2011) or being "pushed out," given racial disparities in school discipline leading to suspension (Skiba et al., 2011). Failure to successfully navigate the high school transition has high stakes and the waters can be especially turbulent for ethnic minority youth.

In this article we capitalize on a large and predominantly ethnic minority sample to examine the high school transition experience of students from different racial/ethnic groups. The context for our study is students’ experience in ninth grade math (e.g., Algebra I). It is well-documented that 9th grade achievement is critical in predicting whether youth stay in or drop out of high school and that 9th grade math is often the critical gatekeeper course (e.g., Neild, 2009). Students in American public high schools who do not pass basic Algebra by the end of 9th grade have restricted opportunities to take advanced mathematics courses in high school, which may ultimately limit their options to pursue careers in science, technology, engineering, and math (the STEM fields) (e.g., Long, Conger, & Iatorola, 2012). These restricted opportunities could mostly befall African American and Latino youth. It is known that Black and Latino high school students are less likely than their White and Asian peers to pass Algebra I as 9th graders, less likely to subsequently take more advanced math courses that
make them college-ready, or to even enjoy the same payoffs when they do reach the higher levels (Riegle-Crumb & Grodky, 2010). We investigate African American, Latino, White, and Asian students’ 9th grade math course taking, their attitudes about the math course in which they are enrolled, and whether those attitudes are shaped by the ethnic context, defined as students’ perceived representation of their own ethnic group in their math class and the perceived ethnic climate of the school as a whole.

**Attitudes toward Math**

We draw on our expertise as motivation researchers to study attitudes toward 9th grade math in relation to three of the most important constructs in the field: *Can I do it?* which taps perceived competence and expectations for the future; *Do I want it?* which assesses perceived value or importance; and *Am I worried about my whether I can do it?* which captures achievement anxiety (see review in Graham & Weiner, 2011). Perceived ability and importance have emerged as important motivation constructs in the expectancy X value model of Eccles, Wigfield and colleagues (e.g., Eccles, 2005; Wigfield, Tonks, & Klauda, 2009). In the course-taking literature based on this model, it has been documented that high school students persist more, select more advanced courses, and actually do better in math when they believe that they have the ability to do well and that doing well is important for their future (Simpkins, Davis-Keane, & Eccles, 2006; Simpkins, Fredericks, & Eccles, 2012). Similarly, research on achievement anxiety, including math anxiety, has shown that students who worry too much about how they will perform actually do more poorly (see Zeidner, 2014). Anxiety has both an emotional component (e.g., sweaty palms, racing heartbeat) and a cognitive component (inefficient attention deployment) that together can deplete the resources that individuals need to successfully master the task at hand.

We introduce a new construct relevant to attitudes about math that we define as math belonging. As a social contextual variable, belonging is part of a larger school climate construct that assesses the extent to which students feel connected to their environment – that they are able to find their niche, feel accepted and respected, and generally “fit in” (Gottfredson, 1984). This
variable has mainly been studied by asking students about how much they feel like they belong at school with such questions as “I feel like I am a part of this school” and “I feel respected and valued at this school” (e.g., Benner & Graham, 2009). Employing similar measures, a growing literature has documented the positive consequences of perceived belonging for school adjustment (e.g., Crosnoe, Johnson, & Elder, 2004; Gillen-O’Neel & Fuligni, 2013).

We adapted the school level measure to assess students’ feelings of belonging in their 9th grade math class. In high school, students move from class to class throughout the school day and are exposed to different sets of peers and teachers, suggesting that a more course-specific measure of belonging might be important. In research assessing domain-specific belonging of men and women enrolled in calculus at an elite university, Good, Rattan, and Dweck (2012) developed a multi-dimensional measure in which the college students who reported high belonging in a “math setting” expressed a commitment to take more advanced college math. Math belonging, therefore, may have motivational significance. Our measure, emerging from the school climate literature, is the first to our knowledge to focus on a specific high school math course as opposed to a more general math community and to include an ethnically diverse sample drawn from multiple high schools with varying levels of academic achievement.

The Ethnic Context

What characteristics of the ethnic context are related to attitudes about 9th grade math in a primarily ethnic minority sample? One important characteristic might be the perceived representation of one’s ethnic group in math class. For example, when I look around my 9th grade math class, do I see few or many students of my ethnic group? In studies of perceptions of school-level feelings of belonging, it has been documented that students feel more like they belong as the number of same-ethnicity peers increases (Benner & Graham, 2009; Fuller & Doan, 2010). More same-ethnic peers is also related to less perceived discrimination at school, suggesting that a critical mass of schoolmates “like me” serves an important protective function (Bellmore, Nishina, You & Ma, 2012; Benner & Graham, 2013; Seaton & Yip, 2009). We therefore hypothesized that attitudes about 9th
grade math belonging would be greater as the perceived representation of one’s ethnic group in math increased. It is not known whether this ethnic context variable is related to perceived competence, importance, or anxiety.

A second ethnic context variable examined in this research was school ethnic climate, a measure of the extent to which a school is perceived by students to promote a culture of status equality and positive interactions between students from different ethnic groups (Green, Adams, & Turner, 1988). For example, do students believe that the adults in their school treat all students fairly? Are the norms of different ethnic groups supportive of crossing racial boundaries in the formation of friendships? While limited, the empirical literature on racial/ethnic climate in secondary schools (as opposed to college) indicates that a positive climate is related to more engagement and better achievement among multiple ethnic groups (e.g., Green, Adams, & Turner, 1988; Mattison & Aber, 2007). Given our interest in the peer ethnic context, we focused on a measure of ethnic climate that probed the extent to which peers in the school were perceived as supporting positive intergroup interaction. It was unclear whether any positive effects of peer ethnic climate would generalize to course-specific contexts such as attitudes about math. Such studies do not exist. Thus, for all of our attitude measures, we examined the independent effects of ethnic climate and perceived ethnic representation as well as their interaction. We tested the hypothesis that a positive ethnic climate might buffer any negative effects on students’ math attitudes of perceiving few same-ethnicity peers in their 9th grade math class.

**Overview of the Study**

Capitalizing on a large multiethnic sample that had recently transitioned to high school, we examined attitudes toward 9th grade math of African American, Latino, White, and Asian youth. We drew on the motivation literature to examine perceived competence, importance, and anxiety about math. A new measure of perceived math belonging was also examined. We identified the level of math in which each student was enrolled (i.e., Algebra I or advanced) and assessed attitudes about that math course as a function of perceived same-ethnic representation and school ethnic climate. We expected that perceiving more same-ethnic classmates in math would be related to more positive attitudes about math, especially math belonging.
We did not have specific predictions about the main effects of general school ethnic climate. Rather, we tested for interactions between the two ethnic context predictors suggesting that better attitudes might be maintained even in the face of few classmates “like me” if peers at school were perceived as supporting a positive ethnic climate.

Method

Participants

Participants were 3,245 9th grade students \((M_{age} = 14.6 \text{ yrs.}, SD = 0.54)\) taking part in a larger longitudinal study. Students represented the first two cohorts of a 3-cohort study recruited over three consecutive years. They were initially recruited at 6th grade in 2009 (C1) or 2010 (C2) from 20 middle schools in southern and northern California that varied in ethnic diversity. Ten schools had one majority ethnic group (i.e., Latino, African American, White, or Asian), 10 schools had two groups that were relatively equally balanced (e.g., White and Asian), and 6 schools were very ethnically diverse. We targeted only 6th grade classrooms in these schools and we successfully recruited about 78% of eligible 6th graders in each school. In 2012 or 2013 the students finished middle school and transitioned to about 190 high schools in those same regions. We then re-recruited the participants in their new high school All participants had both written parental consent and student assent; consent and assent were originally obtained when students were in middle school, and then re-obtained when students transitioned to high school, with a re-consent rate greater than 80%. Based on student self-report, the ethnic breakdown of the sample was 33% Latino, 19% White, 14% Asian, and 11% African American, with the remaining 23% comprised of small groups who identified as American Indian, Middle Eastern, Pacific Islander, Filipino, South Asian (e.g., Indian or Pakistani), multi-ethnic/biracial, or Other. The sample for this research included only youth in the 4 major pan-ethnic groups (Latino, White, Asian, and African American) with complete data \((N = 2,265, 55\% \text{ girls})\). This analytic sample was 44% Latino \((n = 998)\), 27% White \((n = 583)\), 18% Asian \((n = 399)\), and 13% African American \((n = 285)\). Our Latino and Asian subsamples can be further distinguished by generational status and country of origin. The great majority (72%) were second generation (at least one parent born outside of
the U.S.). Latinos were primarily of Mexican origin; Asians were about 70% East Asian (mainly Korean and Chinese) and 30% Southeast Asian, primarily Vietnamese.

The 190 high schools that these students attended represented a full range of ethnic diversity (see below), socioeconomic backgrounds (SES), and academic achievement levels. The proxy for school SES was the percent of students eligible for free or reduced lunch prices ($M = 47\%, \ SD = .22$, range $= 2\%-99\%$). The indicator of school level achievement was the California Academic Performance Index (API), which ranges from 200 to 1000, with a score 800 designated as proficient. For our sample’s API, $M = 795$, $SD =71$, range = 590-948.

**Procedure**

Participants were surveyed in non-academic classes during the Spring semester of their 9th grade year. The measures used in this study were part of a larger questionnaire that was programmed into individual iPads on which students directly responded. Instructions for completing the survey were audiotaped and all students worked at their own pace. Two graduate students circulated around the room to assist individual students as needed. The entire survey took about 45 minutes to complete. Students received a $20 honorarium.

**Measures**

**Math level.** Students were asked to report their 9th grade math class. Of the student responses, 36% listed Algebra I, 34% listed Geometry, 20% listed Algebra II, and the remaining 10% listed a math class in another category (e.g., pre-algebra, calculus, integrated math). From these responses, we generated 2 levels: *Algebra I* ($n = 956$) for those listing that core course and *Advanced Math* if the student listed Algebra II or Geometry ($n = 1,434$). The courses of the 10% of students reporting other math classes were considered to be too heterogeneous or school specific to be reliably classified; these students were not included in the analyses. The fact that more students overall were in advanced math is consistent with a recent trend in some states, including California, for students to take introductory Algebra in 8th grade (Domina & Saldana, 2012; Stein, Kaufman, Sherman,
Hillen, 2011). However, there were ethnic differences in the distribution of students across these two math levels. African American and Latino students were almost equally likely to be in Algebra I or Advanced Math: for African Americans, 56% in Algebra I and 44% in Advanced Math; for Latinos, 52% vs. 48%. White and Asian students, in contrast, were much more likely to be in Advanced Math: for White students, 29% in Algebra I and 71% in Advanced Math; for Asian students, 15% in Algebra I and 85% in Advanced Math.

**Attitudes toward math.** A new questionnaire was developed for this study to examine students’ attitudes toward 9th grade math. After listing their math class, students indicated how much they agreed with 18 statements about their experiences in that class. The items were designed in part to capture the four attitudes we wished to examine in this research: perceived competence (e.g., “I solve math problems without too much difficulty”), importance (e.g., “Math is one of the most important subjects a person can study”), anxiety (e.g., “I feel stressed out during math class”), and belonging (e.g., “I feel like I fit in with the other students in my math class”). Each item was rated on a 5-point scale (1 = *no way!* to 5 = *for sure yes!*). The 18 statements were subjected to a factor analysis, described in the Results section, which examined the underlying structure of this new math attitudes measure.

**Same-ethnic representation in math.** To measure perceived representation of same-ethnic peers in math class, participants were asked “How many students from your ethnic group are in your math class?” Using a 7-point scale, response options were 1 = “none or hardly any (less than 10%),” 2 = “a few (10-20%)”, 3 = “some (20-40%)”, 4 = “about half (40-60%)”, 5 = “more than half (60-80%)”, 6 = “most (80-90%)”, or 7 = “all or almost all (90-100%).” Responses were then converted to a 5-point scale in order to achieve equal 20% intervals between categories. That is, a response of 1 or 2 was aggregated into the lowest representation level (less than 20%) and a response of 6 or 7 was aggregated into the highest representation level (more than 80%). Responses therefore ranged from 1 to 5 (M = 2.4, *SD* =1.32).

**Ethnic climate.** Students completed a 4-item measure of racial/ethnic climate at school adapted from the larger School Interracial Climate Scale (Green et al., 1988). The items assessed the degree to which the school
culture promoted interactions between students of different ethnic groups (e.g., “Students are able to make friends with kids from different racial groups”). Ratings were made on a 5-point scale that ranged from 1 (no way) to 5 (for sure yes), with higher scores denoting more positive interethnic climate ($\alpha = .69$).

High school ethnic diversity. Using student enrollment data from the California Department of Education website (retrieved December 1, 2014, from http://data1.cde.ca.gov/dataquest/), each high school’s ethnic diversity was computed using Simpson’s Index (1949):

$$D_c = 1 - \sum_{i=1}^{g} p_i^2,$$

where $p$ is the proportion of students in a school who belong to ethnic group $i$. $P^2_i$ is summed across groups in a school and then subtracted from 1. The index ranges from 0 to 1, with higher scores indicating more ethnic diversity (i.e., greater probability that any two randomly selected students will be from a different ethnic group). Simpson’s index of the high schools in our sample ranged from .00 to .78 ($M = .61, SD = .12$), indicating a full range of diversity.

Results

Factor Analysis of Attitudes toward Math

The 18 items in the Attitudes Toward Math questionnaire were subjected to an exploratory factor analysis, using principal component analysis as the extraction method, with varimax rotation. Four conceptually meaningful factors were extracted, accounting for 61% of the variance in students’ ratings. Table 1 shows the items comprising each factor and their factor loadings. For items that loaded on more than one factor, we chose the factor loading that was conceptually more meaningful.
The first factor accounted for 35% of the variance (eigenvalue = 6.30) and included agreement with four statements (e.g., “I’m good at math” and “I solve math problems without too much difficulty”). We labeled this factor *Perceived Math Competence*. The second factor accounted for 10% of the variance (eigenvalue = 1.78) and included six items (e.g., “I have good friends in my math class” and “I feel comfortable in math class”). We labeled this factor *Math Belonging*. The third factor, labeled *Perceived Importance*, accounted for 9% of the variance (eigenvalue = 1.60) and was comprised of five items (e.g., “High school math is helpful no matter what job I have”). The final factor accounted for 7% of the variance (eigenvalue = 1.18) and included three items (e.g., “Studying math makes me feel nervous”). We labeled this factor *Math Anxiety*. The remaining analyses treat these factors as separate math attitude measures: perceived competence ($\alpha = .75$), belonging ($\alpha = .80$), importance ($\alpha = .80$), and anxiety ($\alpha = .70$).
Table 1

Rotated Component Matrix showing factor loadings for Attitudes toward Math questionnaire

<table>
<thead>
<tr>
<th>Items</th>
<th>Factor Loadings</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Factor 1: Math Competence</td>
</tr>
<tr>
<td>My math teacher thinks I understand math well.</td>
<td>.754</td>
</tr>
<tr>
<td>I solve math problems without too much difficulty.</td>
<td>.707</td>
</tr>
<tr>
<td>I'm good at math.</td>
<td>.700</td>
</tr>
<tr>
<td>I feel stressed out during math class.</td>
<td>-.621</td>
</tr>
<tr>
<td>My math teacher helps me when I have difficulty in math class. *</td>
<td>.504</td>
</tr>
<tr>
<td>I feel respected in math class.</td>
<td>.282</td>
</tr>
<tr>
<td>I have good friends in my math class.</td>
<td>-.036</td>
</tr>
<tr>
<td>I feel like I fit in with other students in my math class.</td>
<td>.155</td>
</tr>
<tr>
<td>I feel like nobody pays attention to me in my math class. *</td>
<td>.031</td>
</tr>
<tr>
<td>I often feel left out in math class. *</td>
<td>.267</td>
</tr>
<tr>
<td>I feel comfortable in math class.</td>
<td>.454</td>
</tr>
<tr>
<td>Math is one of the most important subjects a person can study.</td>
<td>.127</td>
</tr>
<tr>
<td>High school math is helpful no matter what job I have.</td>
<td>.154</td>
</tr>
<tr>
<td>I want to take as much math as I can when I'm in school.</td>
<td>.195</td>
</tr>
<tr>
<td>I try to say as little as possible in my math class.</td>
<td>-.035</td>
</tr>
<tr>
<td>Studying math makes me feel nervous.</td>
<td>-.490</td>
</tr>
<tr>
<td>Math is boring *</td>
<td>.197</td>
</tr>
<tr>
<td>I only take math because I have to. *</td>
<td>.143</td>
</tr>
</tbody>
</table>

Note. An asterisk indicates the item was reverse coded. Bolded values represent the *reverse-coded item
Descriptive Analysis

A 4 (ethnicity) x 2 (gender) x 2 (math level) factorial ANOVA was conducted on each math attitude. Means and standard deviations for each attitude as a function of ethnicity, gender, and math level are shown in Table 2. Because of the large number of tests involving main effects and interactions, only findings significant at p < .01 are reported. There were main effects of gender for all four attitudes. Girls reported lower perceived competence, less importance, less belonging, and more anxiety than boys: $F(1, 2248) = 13.81, 13.27, 14.65, \text{ and } 20.28$ respectively for competence, belonging, importance, and anxiety (all ps < .001). There were also main effects of math level for belonging: $F(1, 2248) = 6.80$ and importance: $F(1, 2248) = 30.11$ (both ps < .01). Students in advanced math felt more like they belonged and perceived the course as more important than did their peers in Algebra I. There was only one significant ethnicity main effect and that was for importance: $F(3, 2248) = 18.55, p < .001$. White students ($M = 3.1$) perceived math as less important than did African American ($M = 3.3$), Latino ($M = 3.4$), and Asian students ($M = 3.3$) (all ps < .01). These latter three groups did not differ from one another. There were no significant 2-way or 3-way interactions involving gender, math level, and ethnicity for any of the attitude measures.

Table 3 shows correlations between the four attitude measures and the two context variables, combined across gender and ethnicity. Competence, importance, and belonging were all positively related and each was negatively correlated with anxiety (e.g., the more students felt liked they belonged in their math class, the less anxious they felt). Of the ethnic context measures, perceived same-ethnic classmates correlated with belonging whereas a more positive ethnic climate correlated positively with competence, belonging, and importance and negatively with anxiety. The two contexts variables were not significantly related to one another.
Table 2
Means and standard deviations of each math attitude as a function of ethnicity, gender and math level

<table>
<thead>
<tr>
<th>Measure</th>
<th>Math Competence</th>
<th>Math Belonging</th>
<th>Math Importance</th>
<th>Math Anxiety</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$M$ (SD)</td>
<td>$M$ (SD)</td>
<td>$M$ (SD)</td>
<td>$M$ (SD)</td>
</tr>
<tr>
<td>African-American M</td>
<td>3.60 ( .76)</td>
<td>3.75 ( .74)</td>
<td>3.80 ( .81)</td>
<td>3.25 ( .81)</td>
</tr>
<tr>
<td>F</td>
<td>3.56 ( .82)</td>
<td>3.71 ( .76)</td>
<td>3.61 ( .79)</td>
<td>3.11 ( .90)</td>
</tr>
<tr>
<td>Asian M</td>
<td>3.56 ( .73)</td>
<td>3.63 ( .47)</td>
<td>3.63 ( .62)</td>
<td>3.22 ( .74)</td>
</tr>
<tr>
<td>F</td>
<td>3.46 ( .75)</td>
<td>3.58 ( .70)</td>
<td>3.64 ( .63)</td>
<td>3.23 ( .75)</td>
</tr>
<tr>
<td>Latino M</td>
<td>3.50 ( .72)</td>
<td>3.69 ( .63)</td>
<td>3.84 ( .63)</td>
<td>3.33 ( .78)</td>
</tr>
<tr>
<td>F</td>
<td>3.32 ( .85)</td>
<td>3.51 ( .76)</td>
<td>3.68 ( .72)</td>
<td>3.15 ( .84)</td>
</tr>
<tr>
<td>White M</td>
<td>3.61 ( .88)</td>
<td>3.60 ( .76)</td>
<td>3.84 ( .54)</td>
<td>2.92 ( .79)</td>
</tr>
<tr>
<td>F</td>
<td>3.42 ( .73)</td>
<td>3.38 ( .78)</td>
<td>3.58 ( .74)</td>
<td>2.69 ( .96)</td>
</tr>
</tbody>
</table>

Note. Alg. I = Algebra I, Adv. = Advanced Level Math; M = Male, F = Female

Table 3
Correlations between variables
Hierarchical Linear Regression Analysis

Mixed-Effects Hierarchical Linear Modeling REML (Restricted Maximum Likelihood) was used to examine if attitudes toward math varied as a function of math level, perceived same ethnic peers in math class, and ethnic climate. Since the residuals were normally distributed and there was no evidence of heteroscedasticity, all assumptions for hierarchical regression were met. Our analysis also allowed for the handling of complex error structures that could result from the nesting of high schools in our study (Stata, 2005). Intercepts were treated as random and slopes were treated as fixed. At Level 1 we included gender (boys as the reference group) and ethnicity (Whites as the reference group) as covariates and at Level 2 we added high school ethnic diversity as a third covariate. Thus, the main analyses reported controlled for gender, ethnicity, and school level diversity.

<table>
<thead>
<tr>
<th>Measure</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.Math Competence</td>
<td>-</td>
<td>.540**</td>
<td>.487**</td>
<td>-.533**</td>
<td>.025</td>
<td>.165**</td>
</tr>
<tr>
<td>2.Math Belonging</td>
<td>-</td>
<td></td>
<td>.476**</td>
<td>-.506**</td>
<td>.075**</td>
<td>.210**</td>
</tr>
<tr>
<td>3.Math Importance</td>
<td>-</td>
<td></td>
<td></td>
<td>-.387**</td>
<td>.023</td>
<td>.075**</td>
</tr>
<tr>
<td>4.Math Anxiety</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td>.018</td>
<td>-.084**</td>
</tr>
<tr>
<td>5.Math Same- Ethnic</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-</td>
<td>-.041</td>
</tr>
<tr>
<td>representation</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Ethnic Climate</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: * = p < .05, ** = p < .01, *** = p < .001
Three models were tested for each math attitude measure. Model 1 tested if there were significant main effects of the two ethnic context predictors (perceived same-ethnic peers in math class and ethnic climate) on attitudes toward math. Model 2 tested for significant 2-way interactions and Model 3 examined the 3-way interaction between math level (Algebra I as the reference group), perceived same-ethnic peers, and ethnic climate.

The findings for perceived math competence and math belonging are displayed in Table 4. Coefficients are unstandardized values. We begin with Model 3 because lower order effects are always conditional on higher order effects. For perceived competence, Model 3 shows a significant three-way interaction between ethnic climate, math level, math same-ethnic representation ($\beta = .09, p < .05$). This interaction is depicted in Figure 1. The left panel shows the results for Algebra I and the right panel displays results for Advanced Math.

For Algebra I, there was a significant simple slope of same-ethnic representation on perceived competence when ethnic climate was held at 1 SD below the mean. In other words, every 1-unit increase in perceived math same-ethnic representation was associated with a ($b = .07, z = 2.84, p < .01$) increase in students’ perceived math competence when they thought the ethnic climate in their school was especially negative. Just focusing on the intercepts when there were few same-ethnic peers (i.e., 1 SD below the mean on same-ethnic representation), it is evident that a positive ethnic climate functioned as a buffer; students perceived themselves as more competent in math even when there were few same-ethnic classmates if the overall school ethnic climate was judged as favorable. These intercepts are all significantly different from one another (all $ps < .001$). For students in advanced math (right panel of Figure 1) none of the slopes were significant. As the ethnic climate was rated more positively, perceived math competence increased regardless of the number of perceived same-ethnic peers.
Table 4
Hierarchical linear model results for perceived math competence and math belonging
Table 4 (Continued)
Hierarchical linear model results for perceived math competence and math belonging

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Perceived Math Competence</th>
<th>Math Belonging</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Model 1</td>
<td>Model 2</td>
</tr>
<tr>
<td>Constant</td>
<td>2.64***</td>
<td>2.11***</td>
</tr>
<tr>
<td></td>
<td>(.18)</td>
<td>(.32)</td>
</tr>
<tr>
<td>Female</td>
<td>-</td>
<td>-.20***</td>
</tr>
<tr>
<td></td>
<td>.20***</td>
<td>(.03)</td>
</tr>
<tr>
<td></td>
<td>(.03)</td>
<td></td>
</tr>
<tr>
<td>African American</td>
<td>.08</td>
<td>.08</td>
</tr>
<tr>
<td></td>
<td>(.06)</td>
<td>(.06)</td>
</tr>
<tr>
<td>Asian</td>
<td>-.03</td>
<td>-.03</td>
</tr>
<tr>
<td></td>
<td>(.05)</td>
<td>(.05)</td>
</tr>
<tr>
<td>Latino</td>
<td>-.06</td>
<td>-.06</td>
</tr>
<tr>
<td></td>
<td>(.04)</td>
<td>(.05)</td>
</tr>
<tr>
<td>Advanced Math</td>
<td>.09*</td>
<td>.10</td>
</tr>
<tr>
<td>Level</td>
<td>(.04)</td>
<td>(.26)</td>
</tr>
<tr>
<td>Math Same-Ethnic Representation</td>
<td>.02</td>
<td>.24*</td>
</tr>
<tr>
<td></td>
<td>(.01)</td>
<td>(.09)</td>
</tr>
<tr>
<td>Ethnic Climate</td>
<td>.24***</td>
<td>.36***</td>
</tr>
<tr>
<td></td>
<td>(.03)</td>
<td>(.06)</td>
</tr>
<tr>
<td>Ethnic Climate x Same-Ethnic</td>
<td>-.05*</td>
<td>-.10**</td>
</tr>
<tr>
<td>Representation</td>
<td>(.02)</td>
<td>(.03)</td>
</tr>
<tr>
<td>Advanced Math x Same-Ethnic</td>
<td>.01</td>
<td>-.40*</td>
</tr>
<tr>
<td>Representation</td>
<td>(.03)</td>
<td>(.19)</td>
</tr>
<tr>
<td>Advanced Math x Ethnic Climate</td>
<td>-.01</td>
<td>-.23*</td>
</tr>
<tr>
<td>Representation</td>
<td>(.06)</td>
<td>(.12)</td>
</tr>
<tr>
<td>Ethnic Climate x Advanced Math x</td>
<td>.09*</td>
<td>.00</td>
</tr>
<tr>
<td>Same-Ethnic Representation</td>
<td>(0.4)</td>
<td></td>
</tr>
</tbody>
</table>
### Model 1

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Model 1</th>
<th>Model 2</th>
<th>Model 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>High School Ethnic Diversity</td>
<td>-.21</td>
<td>-.20</td>
<td>-.19</td>
</tr>
<tr>
<td></td>
<td>(.19)</td>
<td>(.19)</td>
<td>(.18)</td>
</tr>
<tr>
<td>Between-school Variance</td>
<td>.01</td>
<td>.01</td>
<td>.01</td>
</tr>
<tr>
<td></td>
<td>(.01)</td>
<td>(.01)</td>
<td>(.01)</td>
</tr>
<tr>
<td>Between-observation Variance</td>
<td>.57</td>
<td>.57</td>
<td>.57</td>
</tr>
<tr>
<td></td>
<td>(.02)</td>
<td>(.02)</td>
<td>(.02)</td>
</tr>
</tbody>
</table>

### Model 2

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Model 1</th>
<th>Model 2</th>
<th>Model 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>High School Ethnic Diversity</td>
<td>-.14</td>
<td>-.13</td>
<td>-.13</td>
</tr>
<tr>
<td></td>
<td>(.16)</td>
<td>(.16)</td>
<td>(.16)</td>
</tr>
<tr>
<td>Between-school Variance</td>
<td>.01</td>
<td>.01</td>
<td>.01</td>
</tr>
<tr>
<td></td>
<td>(.00)</td>
<td>(.00)</td>
<td>(.00)</td>
</tr>
<tr>
<td>Between-observation Variance</td>
<td>.40</td>
<td>.40</td>
<td>.40</td>
</tr>
<tr>
<td></td>
<td>(.01)</td>
<td>(.01)</td>
<td>(.01)</td>
</tr>
</tbody>
</table>

### Model 3

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Model 1</th>
<th>Model 2</th>
<th>Model 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>High School Ethnic Diversity</td>
<td>-.13</td>
<td>-.13</td>
<td>-.13</td>
</tr>
<tr>
<td></td>
<td>(.16)</td>
<td>(.16)</td>
<td>(.16)</td>
</tr>
<tr>
<td>Between-school Variance</td>
<td>.01</td>
<td>.01</td>
<td>.01</td>
</tr>
<tr>
<td></td>
<td>(.00)</td>
<td>(.00)</td>
<td>(.00)</td>
</tr>
<tr>
<td>Between-observation Variance</td>
<td>.40</td>
<td>.40</td>
<td>.40</td>
</tr>
<tr>
<td></td>
<td>(.01)</td>
<td>(.01)</td>
<td>(.01)</td>
</tr>
</tbody>
</table>

**Note:** * = p < .05, ** = p < .01, *** = p < .001; High School Ethnic Diversity is a Level 2 variable
Ethnic Climate

Figure 1. The three way interaction between ethnic climate, math level, and math same-ethnic representation on perceived math competence (left panel = Algebra I, right panel = advanced math)
For math belonging, there was no significant 3-way interaction between math level, representation, and ethnic climate. The 2-way interactions in Model 2 were therefore interpreted. A significant interaction between ethnic climate and same-ethnic representation was found ($\beta = -.04$, $p < .05$) (see Figure 2). We found a significant simple slope of math same-ethnic representation when ethnic climate was held at 1 $SD$ below the mean and at the mean. Every 1-unit increase in math same-ethnic representation was associated with a ($b = .07$, $z = 4.41$, $p < .001$) increase in math belonging when ethnic climate was 1 $SD$ below the mean and a ($b = .04$, $z = 3.89$, $p < .001$) increase in math belonging when ethnic climate was at the mean. Having more same-ethnic peers in class therefore mattered most for feelings of belonging when the school ethnic climate was perceived as low or average. As with perceived competence in Algebra I, a positive ethnic climate appeared to buffer the negative effects of having few classmates “like me” in both Algebra I and advanced math.

The results of the hierarchical modeling for math importance and anxiety are shown in Table 5. There were no 2- or 3-way interactions for either outcome. We therefore interpret the main effects in Model 1 of math level, ethnic representation, and ethnic climate, controlling for gender, ethnicity, and ethnic diversity. For both importance and anxiety, there were significant main effects of ethnic climate. A one-unit increase in ethnic climate was associated with a ($\beta = .16$, $p < .001$) increase in math importance and a ($\beta = -.14$, $p < .001$) decrease in math anxiety. There was also a main effect of math level for importance, such that being in advanced math compared to Algebra I was associated with a ($\beta = .24$, $p < .001$) increase in math importance.
Figure 2. Two-way interaction between ethnic climate and same-ethnicity representation for math belonging
22 Graham & Morales – Ethnic context and math attitudes

Table 5
Hierarchical linear model results for math importance and math anxiety

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Math Importance</th>
<th></th>
<th></th>
<th>Math Anxiety</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Model 1</td>
<td>Model 2</td>
<td>Model 3</td>
<td>Model 1</td>
<td>Model 2</td>
<td>Model 3</td>
</tr>
<tr>
<td>Constant</td>
<td>2.39*** (.19)</td>
<td>2.23*** (.34)</td>
<td>2.25*** (.42)</td>
<td>2.95*** (.21)</td>
<td>3.28*** (.36)</td>
<td>3.01 (.43)</td>
</tr>
<tr>
<td>Female</td>
<td>-.23*** (.04)</td>
<td>-.23*** (.04)</td>
<td>-.23*** (.04)</td>
<td>.27*** (.04)</td>
<td>.27*** (.04)</td>
<td>.27*** (.04)</td>
</tr>
<tr>
<td>African American</td>
<td>.28*** (.06)</td>
<td>.28*** (.06)</td>
<td>.28*** (.06)</td>
<td>-.06 (.07)</td>
<td>-.06 (.07)</td>
<td>-.06 (.07)</td>
</tr>
<tr>
<td>Asian</td>
<td>.25*** (.06)</td>
<td>.25*** (.06)</td>
<td>.25*** (.06)</td>
<td>.01 (.07)</td>
<td>.01 (.07)</td>
<td>.01 (.07)</td>
</tr>
<tr>
<td>Latino</td>
<td>.33*** (.05)</td>
<td>.32*** (.05)</td>
<td>.32*** (.05)</td>
<td>.08 (.05)</td>
<td>.08 (.05)</td>
<td>.08 (.05)</td>
</tr>
<tr>
<td>Advanced Math</td>
<td>.24*** (.04)</td>
<td>.01 (.29)</td>
<td>-.03 (.56)</td>
<td>-.01 (.04)</td>
<td>-.18 (.29)</td>
<td>.35 (.57)</td>
</tr>
<tr>
<td>Math Same-Ethnic Representation</td>
<td>.02 (.10)</td>
<td>.13 (.15)</td>
<td>.12 (.01)</td>
<td>-.00 (.01)</td>
<td>-.09 (.11)</td>
<td>.02 (.15)</td>
</tr>
<tr>
<td>Ethnic Climate</td>
<td>.16*** (.03)</td>
<td>.20** (.07)</td>
<td>.19* (.09)</td>
<td>-.14*** (.03)</td>
<td>-.22** (.07)</td>
<td>-.16 (.09)</td>
</tr>
<tr>
<td>Ethnic Climate x Same-Ethnic Representation</td>
<td>- .03 (.02)</td>
<td>- .03 (.03)</td>
<td>.02 (.02)</td>
<td>- .00 (.03)</td>
<td>.24 (.21)</td>
<td>- .24 (.21)</td>
</tr>
<tr>
<td>Advanced Math x Same-Ethnic Representation</td>
<td>.01 (.03)</td>
<td>.03 (.20)</td>
<td>-.02 (.03)</td>
<td>-.24 (.21)</td>
<td>.05 (.05)</td>
<td>-.07 (.13)</td>
</tr>
<tr>
<td>Ethnic Climate x Advanced Math x Same-Ethnic Representation</td>
<td>.05 (.06)</td>
<td>.06 (.13)</td>
<td>.05 (.06)</td>
<td>.13 (.13)</td>
<td>.05 (.05)</td>
<td>.24 (.22)</td>
</tr>
<tr>
<td>High School Ethnic Diversity</td>
<td>-.19 (.18)</td>
<td>-.18 (.18)</td>
<td>-.18 (.18)</td>
<td>.24 (.22)</td>
<td>.24 (.22)</td>
<td>.24 (.22)</td>
</tr>
</tbody>
</table>
Discussion

The results presented here offer new insights into how particular ethnic context variables can shape attitudes toward math during the critical 9th grade transition. We found that perceived competence and feelings of belonging in math varied as a function of both ethnic climate and perceived representation of same-ethnic classmates. In particular, a strong ethnic climate appeared to buffer the negative effects of perceiving few classmates of one’s own ethnicity in math. To our knowledge, there are no prior studies on how course-specific attitudes are systematically related to ethnic context variables.

How the Ethnic Context Matters

Why might it matter for perceived math competence and belonging if there are few versus many classmates “like me” in math? We suggest that the answer to this question may relate to the role of friendships. Other research documents that having friends in one’s courses affects course-taking decisions (Riegle-Crumb, Farkas, & Muller, 2006; Tyson, 2011). Using longitudinal data from the nationally representative Add Health sample,
Riegle-Crumb et al. (2006) found that when girls’ 9th grade friendship groups were predominantly other girls doing well academically, girls were more likely to enroll in pre-calculus or calculus by 11th or 12th grade. In an ethnography of students attending ethnically diverse high schools in North Carolina, Tyson (2011) found that for Black students in particular, having friends in their classes was an important component of perceived fit and confidence that they could do well in advanced courses. As one African American 11th grader in advanced math disclosed about the importance of friends:

If you don’t understand, like me and my friends, we’ll discuss even if on the phone three-way or something, we all talking about something and then somebody will be like ‘I didn’t understand such and such today.’ You have two people or two friends that can say, ‘Well, this is what I got out of it.’ So then you’re going to have your friends as your backbone (p. 154).

Both of these studies, then, highlight the importance of friends in course-taking decisions and satisfaction. We know that most close friends tend to be of the same race/ethnicity; this is a basic principle of friendship formation known as homophily (McPherson, Smith-Lovin, & Cook, 2001). Same-ethnicity preference is particularly strong during adolescence when race and ethnicity take on heightened significance (see review in Graham, Taylor, & Ho, 2009). We suggest that the positive effect of having more same-ethnic peers in math on perceived competence and belonging occurs in part because these peers are also more likely to be close friends. Having same-ethnicity (and same-gender) friends in one’s courses provides both academic and social support.

Perceived ethnic climate and the perceived number of same-ethnic peers interacted in intriguing ways to predict competence and belonging in math. For both attitude measures, believing that peers in the school supported cross-ethnic interactions buffered the negative effects of having few same-ethnic peers (friends) in math. Thus, even though same-ethnic friendship opportunities in math class were rare, cross-ethnic friendships might be especially encouraged when the ethnic climate is positive. In the context of course-taking decisions in high school, cross-ethnic friends may also be
important sources of social capital, defined as the resources that flow through relationship ties (e.g. Coleman, 1988). These resources might include information about what courses to take as well as the norms about what courses other students are taking (Crosnoe, Cavanaugh, & Elder, 2003; Stanton-Salazar & Dornbusch, 1995). At present, we know almost nothing about the differences between same-ethnic and cross-ethnic friends as sources of information about academic course-taking. Nor do we know very much about how the overall ethnic climate at school supports or discourages cross-ethnic interactions. These are fruitful topics for future research.

Our ethnic context variables had fewer effects on math importance and math anxiety. This suggests that other ethnicity-related constructs might be more central for understanding the predictors of math importance and anxiety in our predominantly ethnic minority sample. One likely construct is stereotype threat (Steele, 1997). Stereotype threat is the awareness that individuals have about negative stereotypes associated with their group – such as the stereotype associating being Black with intellectual inferiority. Stereotype threatened students often are dividing their attention between the task itself and ruminating about the meaning of their performance (e.g., what does this say about me or about members of my ethnic group?). Such ruminations have been shown to both arouse anxiety (Schmader, Johns, & Forbes, 2008) and cause students to downplay the importance of doing well in school, a phenomenon known as disidentification (Osborne, 1997). Examining stereotype threat in relation to math anxiety and importance would require different measures and methods than those utilized in this research. But what that literature tells us is that there may be particular ethnic context variables that map onto specific motivational processes, including different attitudes about high stakes courses such as 9th grade math.

9th Grade Math Level

There were few differences in our results as a function of 9th grade math course level. Only for perceived competence were there differences based on whether students were enrolled in Algebra I or the more advanced Geometry and Algebra II (the significant effects were for Algebra I). More than half of our participants were enrolled in the advanced course, including
close to half of African American and Latino youth. The fact that they were enrolled in the advanced course means that they took Algebra I in 8\textsuperscript{th} grade, a trend consistent with course intensification in California public schools (Stein et al., 2011). On the one hand, this is encouraging since prior research indicates that African American and Latino youth are less likely to be enrolled in advanced math courses in 9\textsuperscript{th} grade (Riegle-Crumb, 2006). Enrollment in more advanced math in 9\textsuperscript{th} grade is also the strongest predictor of taking the most advanced courses such as pre-calculus and trigonometry later on (Domina & Saldana, 2012). On the other hand, policy analyses have also documented that course intensification, specifically the earlier completion of Algebra I, is not uniformly beneficial to all students, especially Black and Latino youth (e.g., Liang, Heckman, & Abedi, 2012). The main argument for the low pay-off of course-taking intensification is poor student preparation. The students simply do not have the requisite skills to master the content of the more challenging math courses. We propose that greater attention to the social contextual factors, especially the ethnic context, is also needed. There might be important factors other than academic preparation that help explain why students of color sometimes do not choose to enroll in the most advanced math courses even when they have the opportunity to do so.

**Limitations of the Research**

Although we believe that our findings offer new insights into the motivational and contextual underpinnings of 9\textsuperscript{th} grade math, we also acknowledge the limitations of the study. First, we studied attitudes about math exclusive of math performance per se. Our reasons were both practical (students’ grades were not yet available to us in some schools) and conceptual. Our study was exploratory with a focus on novel measures of the ethnic context and tests of novel hypotheses about the role of ethnic context specifically on math attitudes. Future research should examine how ethnic context influences both math attitudes and achievement.

Second, we examined the subjective perception of same-ethnic peers in math class rather than the actual numbers of such peers. Objective data were not feasible because it would require having the math class rosters with ethnicity information of our 2000 participants in close to 200 high schools.
But we believe that examining subjective perception of peers “like me” is important in its own right, especially when one’s outcomes of interest are psychological processes related to vulnerability, social support, and perceptions of fitting in (see Bellmore et al., 2012 and Morales-Chicas & Graham, 2014 for recent examples). Third was our limited approach to school-level characteristics. Our sample transitioned to many high schools that varied on a number of features including ethnic diversity, SES, and academic orientation. We only controlled for ethnic diversity at the school level in our analyses. Future research should examine whether math attitudes within ethnic context are moderated by other relevant school characteristics. Finally, our data were cross sectional, examining self-reports of attitudes and ethnic context at the same time. It will be important to explore how the ethnic context variables identified in this research influence math attitudes and performance over time.

A Final Note

The public education system in the United States is experiencing dramatic changes (escalation) in course-taking requirements for high school graduation, which means that student progress in 9th grade is more high stakes than ever. These curricular changes are largely motivated by laudable goals: raise academic standards in struggling school districts, reduce the racial achievement gap, and level the playing field so that all students will be prepared for post-secondary education and successful entry into the workforce. Most of the discourse around course intensification and increasing graduation requirements comes from policy analyses or research on structural characteristics like poverty and under-resourced schools that contribute to academic inequality (e.g., Domina & Saldana, 2012). We argue that social-motivational analyses are also relevant to this discourse and particularly those analyses that can address the larger ethnic context in which high school course-taking unfolds.

Acknowledgements
This research was supported by grants from the National Science Foundation and the National Institute of Child Health and Human Development.
References


Domina, T., & Saldana, J. (2012). Does raising the bar level the playing field? Mathematics curricular intensification and inequality in


---

**Sandra Graham**, Department of Education, University of California, Los Angeles.

**Jessica Morales-Chicas**, Department of Education, University of California, Los Angeles.

**Contact Address**: Department of Education, University of California, Los Angeles, CA. 90095-1521. Email: shgraham@ucla.edu
Some Contemporary Forms of the Funds of Knowledge Approach. Developing Culturally Responsive Pedagogy for Social Justice

David Subero, Ignasi Vila & Moisès Esteban-Guitart¹

1) University of Girona, Spain

Date of publication: February 24th, 2015


To link this article: http://dx.doi.org/10.4471/ijep.2015.02

PLEASE SCROLL DOWN FOR ARTICLE

The terms and conditions of use are related to the Open Journal System and to Creative Commons Attribution License (CC-BY).
Some Contemporary Forms of the Funds of Knowledge Approach. Developing Culturally Responsive Pedagogy for Social Justice

David Subero, Ignasi Vila, & Moisès Esteban-Guitart
University of Girona

Abstract

The population of children in schools is rapidly becoming more ethnically and culturally diverse. However, there is a mismatch between the cultures in children’s homes and the cultures in their schools. The funds of knowledge approach emerged in Tucson (Arizona, USA) in order to counter the deficit perspectives common in depictions of working-class, Latin American families. In this paper we critically report on two contemporary research projects conducted around funds of knowledge and social justice pedagogy. In particular, this paper describes and discusses two projects, which have been conducted in schools with disadvantaged students in USA (Latino students in Arizona) and Australia (students with low socio-economic status, from diverse ethnic groups), examining how these projects exemplify social justice pedagogy. Both projects reviewed explore the application of a funds of knowledge approach, in which students focus on a key aspect of their identity and living circumstances and investigate it, seeking to understand the current situation and create positive options for possible improvements.

Keywords: Funds of Knowledge, Dark Funds of Knowledge, multicultural society, inclusive education, social justice pedagogy.
Aproximaciones Contemporáneas del Marco Fondos de Conocimiento. El Desarrollo de la Pedagogía Culturalmente Congruente para la Justicia Social

David Subero, Ignasi Vila, & Moisès Esteban-Guitart
*University of Girona*

**Resumen**

En las últimas décadas, la geografía escolar se está diversificando étnica y culturalmente. Sin embargo, existe un desencuentro entre las culturas de los hogares y de las escuelas en la población de origen extranjero. La aproximación *fondos de conocimiento* surge en Tucson (Arizona, EEUU) con el objetivo de combatir la perspectiva del déficit. El propósito de este artículo consiste en explorar críticamente dos aproximaciones contemporáneas que permiten vincular la tradición del programa fondos de conocimiento con la llamada pedagogía de la justicia social. En particular, se describe y discuten ambos proyectos implementados en escuelas con estudiantes de minorías de Estados Unidos de América (estudiantes latinos en Arizona) y Australia (estudiantes con estatus socioeconómico bajo de distintos grupos étnicos), que permite ejemplificar la pedagogía de la justicia social. Ambos proyectos revisados exploran las aplicaciones de la aproximación de los fondos de conocimiento centrándose en su análisis en la investigación que hacen los estudiantes sobre sus identidades y circunstancias vitales con el fin de entender su situación actual y crear potenciales opciones de mejora.

**Palabras clave:** Fondos de conocimiento, fondos oscuros de conocimiento, sociedad multicultural, educación inclusiva, pedagogía de la justicia social
The emergence of the globalization and new technologies, in general, and the global knowledge economy, in particular, has put a premium on learning throughout the world. Mobility is becoming a necessity because it allows people to be in touch with informational networks (Castells, 1996). An informational-based economy relies primarily on the use of knowledge rather than physical abilities. Indeed, the global knowledge economy is transforming the demands of the labour market, which, in turn, is becoming more competitive and precarious.

According to Bauman (2006), a number of negative consequences of the global knowledge economy emerge such as the generation of surplus people (who have no place in the system), the liquid, fragile and unpredictable world over which people have no control, or of increasingly visible inequalities as the rich and the poor. In that context, international mobility of children, young people and families has become a key feature of globalization. Major sociologists like Manuel Castells, Zygmunt Bauman, Stephen Castles and John Urry argue that globalization and mobility are two sides of the same coin (Favell, 2001).

Schools are not immune to these processes. Quite the contrary: what is happening in the world is mirrored in school settings where, in recent decades, substantial changes have transformed school populations. On the one hand, there is a mismatch between the cultures in children’s homes and the cultures in their schools. On the other hand, important differences in learning outcomes can be observed.

In short, disproportionately high numbers of students who are under-represented (due to low income, ethnic minority, foreign origin and so on) perform consistently lower academically than middle-class students. In that regard, OECD Programme for International Student Assessment, PISA, illustrates the effects on learning outcomes of socio-economic disadvantages and the comparison between immigrant students and students without an immigrant background.

For instance, PISA 2012 analyzed mathematics scores from around 510,000 students across 34 OECD countries. Across OECD countries studied, a more socio-economically advantaged student scores 39 points higher in mathematics than a less-advantaged student. Indeed, disadvantaged students not only score lower in mathematics, and are more likely to report
skipping classes or days of school and arriving late for school, they also reported lower levels of engagement, drive, motivation and self-beliefs. For example, in OECD countries, while 85% of advantaged student agreed or strongly agreed with the statement “I feel like I belong at school”, only 78% of disadvantaged students did (PISA, 2012).

The presence of different languages, identities, religions and family traditions in schools requires radical thinking about how to deal successfully with this social and cultural heterogeneity in order to maintain and guarantee equality, social cohesion, and social justice. By social justice pedagogy it means teaching that explicitly address diversity and equity to against the inequities, social injustices, and oppressions in the world in which one lives (Erchick & Tyson, 2013; Gustein, 2003).

Gustein (2003) summarized the core elements of the social justice pedagogy through three interrelated main goals: 1) helping students develop consciousness in regard their life conditions and the socio-political dynamics of their world, 2) fostering a sense of agency in students, that is, students have to become actively involved in understanding and solving social inequalities, and 3) encouraging the creation of a positive social and cultural identities by recognizing students language and sociocultural practices. In doing so, teachers guide in this process of deep socio-political understanding through questions that address topics that have meaning in both students lives and world circumstances. “These processes of helping students understand, formulate, and address questions and develop analyses of their society are critical components of teaching for social justice and may be encapsulated as ‘developing socio-political consciousness’” (Gustein, 2003, p. 40).

To conclude, the main idea of social justice pedagogy is to develop what Freire (1994) called conscientização (socio-political consciousness) through learning subjects like mathematics, history, biology, reading or writing. To give a definition:

The goal of social justice education is to enable people to develop the critical analytical tools necessary to understand oppression and their own socialization within oppressive systems, and to develop a sense of agency and capacity to interrupt and change oppressive patterns and
behaviors in themselves and in the institutions and communities of which they are a part (Erchick & Tyson, 2013, p. 2).

It can be argued that *funds of knowledge* theory provides an approach that enables teachers to design social justice educational programmes. Indeed, there are several projects focused on social justice and based on the funds of knowledge approach. In particular, Cammarota, in USA, and Zipin and colleagues, in Australia, have developed advances in theory and practice of funds of knowledge approach.

In this paper we aim to critically revise the Social Justice Education Project (SJEP), conducted in Tucson (USA), and the Redesigning Pedagogies in the North Project (RPiN) developed in Australia. Both projects illustrate how can be conducted social justice educational programs based on the funds of knowledge approach. We concentrate on presenting only these projects because we think both projects represent two relevant variants of the funds of knowledge original work that contributed advances in funds of knowledge theory. In particular, we think both projects contribute to funds of knowledge theory by emphasizing students agency and using their particular funds of identity or ways of conceiving -“lived experiencing”- reality (Esteban-Guitart & Moll, 2014a). Moreover, unlike other contemporary usages of funds of knowledge approach (Hughes & Pollard, 2006; McIntyre, Kyle, & Rightmyer, 2005), both projects described here are attempts to accomplish the principles of social justice pedagogy, specifically in regard to help students to develop consciousness on their life conditions and the socio-political dynamics of their world.

This paper is divided into three sections. First, we briefly describe the origin and context of funds of knowledge theory. Second, we illustrate two contemporary projects based on the funds of knowledge approach that explicitly address social justice. Finally, we critically discuss certain considerations which we feel should be taken into account during the development and implementation of the programme funds of knowledge regarding social justice pedagogy.
The Funds of the *Funds of Knowledge* Approach

The term ‘*funds of knowledge*’ stems from anthropology, specifically, from studies focused on economic exchange networks of Mexican immigrants residing in the USA. These studies, conducted by Carlos Vélez-Ibáñez and James Greenberg at the University of Arizona, stressed the importance of establishing relationships and transnational social ties based on mutual trust. These social networks are manifested through the exchange of *funds*, i.e., “bodies of knowledge of strategic importance to households” (Vélez-Ibáñez & Greenberg, 1992, p. 314).

The authors refer to the pioneering work of Wolf who distinguishes between different funds that any household requires in order to survive and develop, namely: caloric funds, funds of rent, replacement funds, ceremonial funds and social funds. Expanding on this premise, they go on to say that: “public schools often ignore the strategic and cultural resources -which we have termed *funds of knowledge*- that households contain. We argue that these funds not only provide the basis for understanding the cultural systems from which U.S.-Mexican children emerge, but that they also are important and useful assets in the classroom” (Vélez-Ibáñez & Greenberg, 1992, p. 313).

The underlying idea is that through networks of help and collaboration, based on mutual trust, exchanges are established that involve not only capital (i.e., money) for work, as in the logic of capitalism, but also of knowledge, skills and abilities. In so-called ‘time banks’ for example, people exchange “time, dedication, expertise” related to some task: thus, an English teacher will teach a plumber’s daughter for one hour a week while the plumber will spend an hour each week fixing the English teacher’s pipes.

Following this line of reasoning, the funds of knowledge are defined both as a knowledge-resources any household has –regardless their social, economic and cultural condition-, and as a social networks embedded in the household functioning. “We use the term ‘funds of knowledge’ to refer to these historically accumulated and culturally developed bodies of knowledge and skills essential for household or individual functioning and well being” (Moll, Amanti, Neff, & González, 1992, p. 133).
We use the term ‘funds of knowledge’ to refer to the diverse social networks that interconnect households with their social environments and facilitate the sharing or exchange of resources, including knowledge, skills, and labor essential for the household’s functioning, if not their well-being (Moll, Tapia, & Whitmore, 1993, p. 140).

The original work has three main objectives, namely: 1) to improve the academic performance of students who are grossly undervalued (often hidden, silenced and whose very existence may even be denied by the dominant culture and the school system); 2) to improve ties between family and school (through policies of trust, i.e., with teachers making visits to the homes of their students in order to discover their funds of knowledge) and finally, 3) to modify teaching practice by designing curriculum units based on the funds of knowledge discovered (González, Moll, & Amanti, 2005).

The design of funds of knowledge approach includes three related elements: 1) research in households, 2) classroom analysis, and 3) study group meetings for discussion of theory, data collection and findings in relation to the study of the households and classrooms (González, Moll, & Amanti, 2005).

In that sense, the “study group” is suggested as a “mediating structure” (Moll, 2014) in which teachers, in collaboration with researchers, learn how to conduct ethnographic studies of their students' families at home. Specifically, teachers analyze the family history and their labor history of the households of language-minority students to detect the bodies of knowledge, information, skills, and strategies found within households. These ethnographic visits allows teachers create representations of the underrepresented students households based on the documentation of their resources not on some stereotype deficit view on immigrant families. In the “study groups”, teachers design educational activities incorporating the funds of knowledge detected during their visits. That is to say, funds of knowledge become educational resources because teachers incorporated them into their teaching and the curriculum. This is an example of a culture-based teaching because the families’ culture and experiences are incorporated into the curriculum and school practice (McIntyre, Kyle, & Rightmyer, 2005).
Recent reviews have helped to shed light on the concepts and sources of people’s funds of knowledge (Hogg, 2011), as well as analysing the pedagogical dimensions and the issues of power and agency in this approach (Rodriguez, 2013). In addition, the pioneers of this approach have revisited the origins and development of the project (González, Wyman, & O'Connor, 2011; Moll, 2014). Moreover, some theoretical and methodological advances have been suggested recently. For example, the consideration of the students’ funds of identity as a complement to families’ funds of knowledge (Esteban-Guitart, 2012, 2014a; Esteban-Guitart & Moll, 2014a; Esteban-Guitart & Moll, 2014b).

As we mentioned above, in this paper we focus on two contemporary projects carried in the USA and Australia, which combines an interpretation of funds of knowledge legacy with social justice pedagogy. To us, both projects enrich the funds of knowledge theory illustrating how to bridge social justice pedagogy with funds of knowledge theory.

**Students as “Researchers” of their own Lifeworlds and Communities**

The *Social Justice Education Project* (SJEP) began in 2003 with a class at Cholla High School in Tucson (Arizona) as an attempt to engage Latino youth in the education process. Currently, Julio Cammarota, associate professor at University of Arizona, is the director of this project (Cammarota, 2007).

The SJEP is conducted in high schools in the Tucson Unified School District where high school students receive high school credit to examine and interrogate their own socio-historical contexts. In other words, the SJEP requires students to adopt a certain degree of serious academic subjectivity in order to analyze and address the social conditions that may undermine their future opportunities. The objective is to enable students to develop more sophisticated forms of critical analysis regarding the inequalities that affect their life experience. With the main focus being on racism, the aim is get students to think about this issue, to reinforce the central role that reflection should have in the difficulties and social prejudices experienced by themselves, their families and their communities and to start generating counter-hegemonic alternatives that transform the educational and social
realities; i.e., alternatives that result from initiatives by the students themselves.

With this premise, Cammarota (2007) developed his SJEP in the 3rd and 4th grade classrooms of 20 Latino children at a high school in Tucson, Arizona. By means of a transformative plan of studies, the teacher/student discussion groups became essential spaces to “unearth silenced voices”. In a preliminary exercise, poems were used to bring into the open the life histories, narratives and experiences of students. Once the identity experiences were collected, four sub-themes relating to inequalities in education were established and these were then investigated by the students. These investigations, once carried out, subsequently had an impact beyond the classroom as they were presented to educators, families, administrators and community members. Students participated as holders of knowledge and this led them to increase their self-confidence, to create and develop their own voice and feel effective within the classroom and beyond it.

In the SJEP, Latino families are not perceived to have deficits such as cultural deficits, linguistic deficits and so on. On the contrary, families are viewed as possessing valuable cultural resources, knowledge, and experiences that can enrich students’ education. Through “Encuentros” (encounters or public meetings among students, teachers, families, and community members) the injustices facing Latinos in education are discussed (Cammarota & Romero, 2014). Indeed the “encuentros” represents a translation and adaptation of the study groups described above. Here, the purpose of the study groups, or “encuentros”, is to facilitate the extensive classroom dialogue, which in turn became the basis for presentations to other audiences. Thus, the students have to develop an elaborate symbolic repertoire for conducting research and representing the findings. Unlike the “study groups”, the “encuentros” are not spaces for documenting household knowledge and practices. However, those can be potential spaces for developing the necessary relations of mutual trust among teachers, students and families, which is a crucial purpose of the funds of knowledge original project. Moreover, the project is closer to the social justice pedagogy in contrast to original work conducted by funds of knowledge theory. In that regard, the three main goals of the social justice pedagogy described above can be illustrated in the SJEP.
First, “Encuentros” help students to discuss important socio-political topics such as racism. Second, students develop a sense of agency through “youth-centered participatory action research”. Words and themes emerged from students’ lived experiences elicited and collected by poems, notes, photos or interviews. For instance, some students selected the topic of border and immigration policies because family members had died crossing the desert. Students are active in choosing the topic, analysing it and showing their findings to family members, teachers, school board staff or district superintendents. Finally, “Encuentros” are safe settings for showing social and cultural identities by recognizing students’ live experiences and forms of life through written reports, presentations, or video documentation. Encuentros would be an appropriate space for develop what Sepúlveda (2011) calls pedagogy of acompañamiento. Romero, Arce and Cammarota (2009) conclude:

According to our students this foundation has helped them develop a strong social, cultural and historical identity that has allowed many of them to develop for the first time an academic identity, which also has helped the students develop a strong sense of academic proficiency (p. 219).

This is an illustration of a positive social identity (academic proficiency) produced by recognizing of students’ language and texts such as poems written by themselves.

As in the case of the SJEP, the Redesigning Pedagogies in the North (RPiN) project, in Australia, requires the active participation of students with teachers in discussion groups in which they negotiate the curriculum units (Zipin, 2013; Zipin, Sellar, & Hattam, 2012). Teachers suggest to the students that they incorporate significant cultural artefacts (from outside the school) into the school reality. These cultural artefacts are mediators in the construction of the identity of the students as they are created by families and communities in ways that are historical, social and cultural. Again, the three core elements of social justice pedagogy can be detected easily.
Teachers asked students to bring cultural artefacts from their lives outside school that carried rich identity resonances, and to talk/“teach” about their social-cultural meanings. Following this, class discussions encouraged students to name and analyse local lifeworld issues. Teachers took notes on what happened in the classroom, and brought them to a RPiN roundtable for discussion in small groups of teachers and university researchers (Zipin, 2009, p. 320).

By making them explicit (naming them and presenting them as life experience) in the school context, it can incorporate it and use this valuable material as a lever for transforming the curriculum and teaching practices that take place in the school. In this way, co-designed research projects emerge, with the students as protagonists, in which the community is re-imagined (Zipin, 2013; Zipin, Sellar, & Hattam, 2012).

Indeed, the aim is to elicit/imagine and foster positive aspirations towards futures among young people in power-marginalised regions through curriculum processes. Zipin, Sellar, Brennan, & Gale (2013) use the expression ‘funds of aspiration’ to means alternative positive future possibilities, something like the funds of knowledge ‘in a future tense’.

An example of this is the case of a teaching unit involving clay sculpture animations in Art classes within the RPiN project (Zipin, Sellar, & Hattam, 2012). The students used the clay to incorporate life stories which were the fruit of their funds of knowledge and identity, actively participating in the co-construction of the curriculum and learning outcomes in what Zipin, Sellar and Hattam (2012) call a “double democratic approach”.

The authors describe a “double democratic” approach in curricular and pedagogical practices that seeks to give a voice to the students’ funds of knowledge in a manner that puts students and teachers in positions of reciprocal learning in their joint pursuit of knowledge (Rodríguez, 2013, p. 96).

In this case, the teacher encouraged students to incorporate life experiences that were important to them. At first there were doubts, superficiality and little significance in the experiences they shared. When the teacher
introduced video as a device to encourage inspiration and increase interest among the students, there was more effort in the art projects and many of the students identified with videos that featured violent themes. The teacher took advantage of this to stimulate reflection on the subject. Thus, he helped the students to expand on the problem of violence as an important issue for them and their communities and to come up with solutions that were relevant to their community. The result was the creation of clay animation artwork that dealt with the violence in their lives but also gave them the opportunity to design encouraging solutions that helped them to re-evaluate this reality.

The programme, conceived by Lew Zipin (currently at Victoria University, Melbourne) and colleagues, consists of an action research project in which the researchers found need to conceptualize ‘dark’ and ‘light’ funds of knowledge (Zipin, 2009), in order to redesign curriculum and pedagogy in schools in a poor region (north of Adelaide, Australia) in which there was a pronounced heterogeneity and diversity of cultural backgrounds: students from Vietnam, Cambodia, Bosnia, Sudan and Somalia (Zipin, 2009, 2013; Zipin, Sellar, & Hattam, 2012).

In that regard, by ‘dark funds of knowledge’ it means knowledge about difficult aspects of life that some students experience, such as racism, violence, conflict and poverty (Zipin 2009). The claim, then, is that failing to acknowledge and create pedagogical space for both ‘dark’ and ‘light’ funds of knowledge. In other words, the challenge is to understand rather than avoid, the ‘dark funds of knowledge’, the consequences for students of living in difficult circumstances.

As we mentioned above, the project created discussion groups, rather like the ‘study groups’ from the original funds of knowledge project in Tucson (Moll, 2014). However, in this version, the teachers negotiated curriculum units with the students with the aim of becoming ‘researchers’ of their local life contexts. This echoed the approach developed by Cammarota (2007) in the USA.

The stories they encountered combined positive elements in relation to the students’ community but also dark elements, such as poverty, violence, drugs and alcohol, mental health problems, squalor or discrimination. As one of the teachers said: “Some (students) are actually quite worried about the community they live in; they see a high crime rate, they’re worried about
drugs and alcohol; where other kids have a huge love for their community” (Zipin, 2009, p. 321).

According to Zipin (2009), living in difficult circumstances (poverty, violence, etc.) means accumulating and developing what he calls *dark funds of knowledge* - “the dark side of place” (Zipin, 2009, p. 322) - which mediates how students - and their families - perceive and participate in the culture of the school.

Inspired by Bourdieu’s perspective, Zipin (2009, 2013; Zipin, Sellar, & Hattam, 2012) holds the view that there is a cultural capital in schools that benefits a cultural elite; a cultural capital that reflects the cultural codes that this elite share in their homes and in their community of reference. However, other cultural codes, such as those of ethnic minorities, are unjustly alienated by the dominant culture both in the curriculum and in the pedagogy used. Thus, using these undervalued cultural codes and making them explicit and practicable within the curriculum is crucial to the academic success of students from these ethnic groups. Funds of knowledge -involving practices that recognize, appreciate and make use of family and community knowledge pertaining to the less empowered students within the school- are a highly valuable tool for advancing social justice in schools.

What is new in this case is the use of the *dark* funds of knowledge as an asset for the social transformation of the curriculum itself and as an inherent part of these students’ participation and involvement in the activities within the school. Indeed, some of the topics addressed by the SJEP can be considered *dark*: racism for example. However, far from suggesting that such *dark* knowledge be used to reproduce situations of poverty through deep-seated cultural processes and practices, i.e., through the ‘culture of poverty’ (Zipin, 2013), the aim here is to use these the full range of lived knowledge to mobilize transformation programmes which use creativity and imagination to move from “darkness to light” through curriculum that encourages reflection and pro-action towards social change, generating a desirable future for living in the community (Zipin, 2013). “Difficult lifeworld knowledge can indeed fund lifeworld-vitalised curricula to engage learners” (Zipin, 2009, p. 323).
Social Justice Pedagogy in Funds of Knowledge Tradition. A Critical Examination of the SJEP and RPiN Projects

It can be argued that both projects aim to facilitate a critical understanding and reimagining of the “at-risk” students cultural historical present. In other words, the primary goal of the projects is to engage students academically while helping them conduct critical research on social issues that matter to them. The students, for example, would carry out collaborative research on inequalities they might have experienced in their lives, whether in or out of school. This is a form of civic engagement because the students can learn how to improve conditions in their schools and communities. In addition, in both projects the students learn how to apply ethnographic methods to the study of their schools and communities. In that sense it can be assumed that the role of students change abruptly from passive (to receive instruction from teacher) to active (observe, record and produce knowledge on social problems, such as racism and other forms of discrimination). These insights can facilitate the incorporation of new identities such as advocates for social justice, a pedagogical goal of both programs.

According to Bell (2007): “The goal of social justice is full and equal participation of all groups in a society that is mutually shaped to meet their needs” (p. 1). However, normally in school contexts, the relationships between the teacher, the pupil and the family are dominated by asymmetrical power relationships in which teachers have expertise over children by means of an academic assessment of them. The parent/teacher meetings concentrate on “accountability” with the discussion being about the child's performance in school. In this scenario, the role of the student is to learn, internalize, reproduce and display academic knowledge administered by the teacher.

In contrast, one of the more notable aspects of the funds of knowledge programme is the modification of these power relations, and the fact that it empowers teachers, families and pupils (Rodriguez, 2013). The teacher abandons the traditional role of expert and becomes a researcher; the families lose their traditional passivity in the context of the school and become suppliers of resources that can be turned to educational advantage; and the children construct knowledge by creating cultural and identity artefacts (funds of identity, Esteban-Guitart & Moll, 2014b). In the contemporary projects described here it can be explicitly illustrate the
transformation of students role. The students construct knowledge by creating particular artefacts such as poems, in SJEP project, or a clay animation artwork, in RPiN project. Through these artifacts students recognize the dark funds of knowledge as poverty, racial discrimination, economic disparities, and other conditions in their schools or neighborhoods elicited/imagined by students themselves.

As we suggested above, despite some differences on procedure, these projects have pertinent features in common: most fundamentally, students are both the researchers and the focus of the study, and the teaching content directly counters racism and racist stereotypes or difficult circumstances through contextualization of the students’ social, economic, and cultural realities. This view emphasizes learning as mediated processes of collective knowledge creation from artifacts and shared objects of activity. The key is to provide a setting –study groups in the original work, encuentros in SJEP or discussion groups among teachers and students in RpiN– for discourse or dialogue among participants that promote expansive models of teaching and learning based on funds of knowledge.

An important outcome of these shared settings is to support the development of the teacher’s pedagogy, the creation of a network among teachers, researchers, families, and students and the production of an additive schooling, that is, to develop theoretical and transformative education for the children. The encuentros and the discussion groups facilitate discourse practices that enable students to think and research together about social topics. In both projects, the students discuss actively how to improve conditions in their communities carry out collaborative research on inequalities they might have experienced in their lives, whether in or out of school. This is a form of civic engagement. In addition, the students learn how to design and apply ethnographic methods to the study of their life conditions, bringing and analyzing cultural artefacts from their lives outside school as in the RPiN project, or through youth participatory action research in the SJEP project. In both cases, the process of researching led to the creation of new funds of knowledge and identity regarding social justice: social problems such as racism and other forms of discrimination, inequitable distribution of resources, and so on.
Both projects represent attempts to determine how social justice pedagogy can be conducted based on funds of knowledge approach. However, these variants of the funds of knowledge approach did not conduct teacher visits to student households, a central aspect of the original work. In particular in the RPiN project the focus is on students and teachers, and families are not taken into account. Regarding SJEP, families are part of encuentros. Both projects are based on the idea of funds of knowledge as pedagogical resources, focused on students’ funds of knowledge –funds of identity (Esteban-Guitart, 2012; Esteban-Guitart & Moll, 2014a)– rather than families’ funds of knowledge. It can be supposed that the lack of teacher visits to families has negative effects on necessary transformation of teacher and parent roles, and their relationships. In other words, families’ funds of knowledge are not visible because there is not an exchange through teacher visits. Then the process of establishing convivencia, by which it means a mode of conviviality based on forming relations of trust through interpersonal communications between teachers and families, becomes problematized.

Further developments should take families seriously, as other relevant children environments and artefacts such as digital devices. To us, putting students identity at the core of the educational practice in order to engage them in discussions on social justice should be compatible with fostering relationships among teachers and families based on mutual trust.

We share with social justice pedagogy an interest in understanding socio-political circumstances and to foster students' agency and responsibility. However, the problem of social reform is that it often does not involve only individual change in a micro cultural level, rather it is the result of macro cultural forces (Esteban-Guitart, 2014b; Ratner, 2012). It is important to emphasize here that the solution would be to eliminate exploitation and developing cooperative environments and practices, not simply to enrich and empower oneself personally. Moreover, all students, not only students at risk (as in both projects described here), should attend social justice programmes in order to be aware about the inequalities and power relationships between social groups.
To conclude, as we understand it, the two experiences briefly described here suggest three major challenges ahead for the funds of knowledge approach.

First, there needs to be an empirical analysis of the new relationships of power and agency that have arisen from the implementation of school practices based on funds of knowledge—including when such relationships lead to the use of funds of knowledge that may be uncomfortable for schools or for the teachers themselves, but of great significance to students, families and communities, such as, for example, the so-called dark funds of knowledge (Zipin, 2009, 2013). In this sense, we feel that the analysis can be enriched by incorporating Foucault into the theoretical corpus (Vygotskian sociocultural theory and Bourdieu's sociological theory).

Secondly, it is necessary to design and exemplify teaching and learning procedures that place the learners’ funds of identity at the heart of educational activity, and to recognize the multiple literacies that emerge from using different semiotic resources in different contexts of life and activity (Reyes & Esteban-Guitart, 2013). Recognizing the funds of knowledge and identity does not mean we end up chaining ourselves to them. On the contrary, they can serve to create cultural artefacts, leading to new funds of knowledge and identity.

Finally, there is a need for a critical analysis of the practices that shape the ever-changing conditions of contemporary times that underlie the lives of schoolchildren and their families in their struggle to deal with adversity and to ensure their well-being and quality of life.

References


Cammarota, J. (2007). A social justice approach to achievement: Guiding Latina/o students toward educational attainment with a challenging,
socially. *Equity & Excellence in Education, 40*(1), 87-96. doi: 10.1080/10665680601015153


Subero, Vila & Esteban-Guitart – Funds of Knowledge Approach


David Subero, Department of Psychology. Institute of Educational Research. Faculty of Education and Psychology. University of Girona.

Ignasi Vila, Department of Psychology. Institute of Educational Research. Faculty of Education and Psychology. University of Girona.

Moisès Esteban-Guitart, Department of Psychology. Institute of Educational Research. Faculty of Education and Psychology. University of Girona.

Contact Address: Department of Psychology. Institute of Educational Research Faculty of Education and Psychology. University of Girona, Spain. Plaça Sant Domèneç, 9, 17071 Girona, Spain. Email: moises.esteban@udg.edu
NNESTs’ Professional Identity in the Linguistically and Culturally Diverse Classrooms

Kim Hyunsook Song & Alla Gonzalez Del Castillo

1) University of Missouri - St. Louis

Date of publication: February 24th, 2015

To cite this article: Song, K.H. & Gonzalez Del Castillo, A. (2015). NNESTs’ Professional Identity in the Linguistically and Culturally Diverse Classrooms. International Journal of Educational Psychology, 4(1), 54-83. doi: 10.4471/ijep.2015.03

To link this article: http://dx.doi.org/10.4471/ijep.2015.03

PLEASE SCROLL DOWN FOR ARTICLE

The terms and conditions of use are related to the Open Journal System and to Creative Commons Attribution License (CC-BY).
NNESTs’ Professional Identity in the Linguistically and Culturally Diverse Classrooms

Kim Hyunsook Song  
University of Missouri - St. Louis

Alla Gonzalez Del Castillo  
University of Missouri - St. Louis

Abstract

This study examines NNESTs’ professional identities as classroom teachers by analyzing NNESTs’ perceptions of their strengths and challenges. The study contributes to NNESTs forming their professional identity by recognizing, developing, and contesting authoritative discourse. A basic qualitative research design is employed to analyze the interview data. Participants are five NNESTs who teach in American classrooms. Three focused themes are identified; linguistic competence, cross-cultural competence, and pedagogical competence. NNEST superiority fallacy is added as the fourth theme. Additionally, the study briefly compares strengths and challenges of U.S. versus foreign graduates. NNESTs’ strengths and challenges are reported in line with other NNEST researchers: dual-language acquisition and cross-cultural experience, grammar knowledge, linguistic theories, and coping strategies as strengths, poor command of English language, lack of sociocultural strategies, and lack of confidence as weaknesses. New findings include NNESTs’ confidence as effective teachers with accent, intellectual competence in theories, and stronger credentials. This study asserts that the NNESTs’ multilingual and multicultural backgrounds can become valuable assets with less linguistic prejudice, and the need for a policy that provides the benchmark to measure their credentials rather than depending on biased assumptions. Suggestions to shape NNESTs’ professional identity are provided.

Keywords: professional identity, NNEST, linguistic prejudice, confidence with accent, foreign graduates

2015 Hipatia Press  
ISSN: 2014-3591  
DOI: 10.4471/ijep.2015.03
Identidad Profesional del Profesorado (NNES) en Aulas de Cultura y Lengua Diversas

Kim Hyunsook Song
University of Missouri - St. Louis

Alla Gonzalez Del Castillo
University of Missouri - St. Louis

Resumen

Este estudio examina las identidades profesionales de los profesores angloparlantes no nativos (NNEST) por medio del análisis de sus percepciones acerca de sus fortalezas y desafíos. El estudio contribuiría a la formación de la identidad profesional de NNET al reconocer, desarrollar, y disputar el discurso autoritario. Se emplea un diseño básico de investigación cualitativa. Los participantes son cinco NNET de aulas americanas. Se identifican tres temas centrales; la competencia lingüística, intercultural, y pedagógica. Se añade la falacia de la superioridad de los NNET como cuarto tema. Además, el estudio compara brevemente las fortalezas y los desafíos de los graduados estadounidenses versus los extranjeros. Las fuerzas y los desafíos de NNET están en línea con los resultados de otras investigaciones en cuanto a: adquisición de dos idiomas y experiencia intercultural, conocimiento de la gramática, teorías lingüísticas y estrategias de manejo situacional como fortalezas; dominio bajo del lenguaje inglés, carencias de estrategias socioculturales y falta de confianza como debilidades. Los nuevos resultados incluyen la confianza de los NNET como profesores eficientes con acentos, competencias intelectuales, en teorías y credenciales más fuertes. Este estudio afirma que los antecedentes multilingües y multiculturales pueden ser ventajas valiosas con menos prejuicios lingüísticos, y la necesidad de una política que provea el punto de referencia para medir las credenciales en vez de depender en las suposiciones prejuiciadas. Se aportan sugerencias para formar la identidad profesional de los NNET.

Palabras clave: identidad profesional, NNET, prejuicio lingüístico, confianza con acento, graduados extranjeros.
In order to understand teaching and learning, we need to understand teachers. We need “a clearer sense of cultural, political, and individual identities which teachers claim or which are assigned to them” (Varghese, Morgan, Johnson, & Johnson, 2005, p. 22), in order to understand teachers. A majority of trained English as a second or foreign language teachers in the world, about seventy-five percent, are NNESTs (Ma, 2012; Braine, 1999; Canagarajah, 1999). Non-native English speakers represent “40 to 70 percent of the North-American student teacher population” (Llurda, 2005 as cited in Moussu, 2006, p. 1).

Despite the increasing number of NNESTs prepared to teach in America and equal-opportunity policies for NNESTs, many school administrators use ‘unaccented English’ (Lippi-Green, 1997) as a major decisive criterion in hiring teachers. In the context of pervasiveness of native speaker authority discourse, the researches on NNESTs’ identity issues need to contribute to the formation of their professional identity (Braine, 1999; Brutt-Griffler & Samimy, 1999; Moussu & Llurda, 2008). Some publications address the native/nonnative speaker dichotomy as it relates to the disempowerment of NNESTs (Amin, 1997; Morita, 2004; Rajagopalan, 2005). The questions raised about disempowerment of NNESTs are: Can the fact that one displays pronunciation without accent be translated into a successful teacher criterion? Are there any objective criteria to measure NNESTs’ professional qualification other than their accent and race (Clark & Paran, 2007)? Can the richness of NNESTs’ backgrounds and experiences actually contribute to their professional identity?

Other works reflect on ways to modify teacher education programs to better serve the needs of NNESTs (Holliday, 2005; Kamhi-Stein, 1999; Medgyes, 1994, 2001). As Liu (1998) argues, even though nearly 40 percent of the students enrolled yearly in TESOL programs in North American universities are NNESTs, teacher education programs have failed to accommodate their needs. Similarly, Canagarajah (1999) asks some disturbing questions about the purposes for which universities train ‘periphery’ scholars for language teaching, while also subscribing to the native speaker fallacy that places NNESTs in a position of deficient professional identity.
In this study, the dichotomy of strengths and weaknesses of the NNESTs is examined. With that dichotomy data, the study explores how NNESTs develop their professional identities as teachers in America (Golombek & Jordan, 2005; Pavlenko, 2003), and how they could contribute to education of the linguistically and culturally diverse students in America. The researchers intentionally visited the NNESTs’ ‘disempowerment’ questions and their contributing features while analyzing the data.

**Purpose of the Study**

The main purpose of this study is to examine NNESTs’ professional identities as classroom teachers in the United States of America by analyzing NNESTs’ perceptions of their strengths and challenges. This study would like to help the NNESTs form their professional identity by recognizing, acknowledging, and contesting “ideological discourses that position them as second-rate professionals” (Reis, 2011, p. 32).

**Research Questions**

Two main research questions guide the exploration of identifying and evolving NNESTs’ professional identity along with the design of this study and the choice of methods used for data collection and analysis:

1. What are the perceived strengths of NNESTs in the U.S.?
2. What are the perceived challenges of NNESTs in the U.S.?

These two research questions are analyzed in terms of four themes, 1) linguistic competence, 2) cross-cultural competence, and 3) pedagogical competence. The NEST superiority fallacy is added as the fourth theme. Although it is not a part of the research questions, it is a very significant theme when dealing with NNESTs. Since three out of five participants of this study are foreign graduate NNESTs, the study briefly reports their strengths and challenges compared to the U.S. graduates.
Native English speaking teachers (NESTs) usually have been validated as role models for teaching the English language and content areas. That validation is called native speaker superiority fallacy (Phillipson, 1992). NESTs are often given preference in employment (Braine, 1999; Clark & Paran, 2007; Cook, 2005). The myth that NESTs are better qualified teachers than NNESTs, however, has been challenged (Phillipson, 1992) and questioned (Amin, 1997; Kirkpatrick, 2006). Kirkpatrick (2007) uses a phrase, “linguistically prejudiced” (p. 5) to express racial and ethnic prejudice toward NNESTs (in Reis, 2011). Effective teaching is often evaluated by sociocultural and linguistic perceptions rather than actual teaching experience, professional preparation, cross-cultural competence, content knowledge, and pedagogy (Kirkpatrick, 2006). For example, many students resent being taught by an NNEST even after the teacher proves her or his competence (Maum, 2002). A study conducted in Korea examined the effects of NNESTs' accents on their students' listening comprehension (Butler, 2007). The study did not find any difference in student outcomes based on the kind of accents used in the instructional practice. However, these same students expressed preference in regards to the instructor who was a native English speaker rather than a NNEST (Butler, 2007). The establishment of their own identity and authority as effective teachers is challenging for NNESTs. NNESTs with a deficient command of English, however, may have hidden advantages regarding their strengths and positive attributes (Medgyes, 1994). NNESTs can provide a good learner model for the ELLs in their classrooms; they may teach language-learning strategies more effectively; “be more empathetic to the needs and problems of learners; and make use of the learners’ mother tongue” (Medgyes, 1994, p. 51).

Other researchers support NNESTs as effective teachers as well (Llurda, 2004; Maum, 2002). One advantage is that most NNESTs, especially those who are educated in the host country, may have adequate or native-like levels of English proficiency that are combined with their bilingualism (Moussu & Llurda, 2008). Davies (2001) argues that NNESTs can become native-like in the areas of “the intuition, grammar, spontaneity, creativity,
pragmatic control, and interpreting quality” (in Moussu & Llurda, 2008, pp. 315-316). Selecting one prestige dialect, for example, American Standard English, as the norm ignores NNESTs’ intelligibility in the areas of linguistically and cross-culturally relevant teaching strategies (Derwing & Munro, 1997; Kachru, 1985). Phillipson (1996) questions NESTs’ superiority because NNESTs can “have insight into the linguistic and cultural needs of their learners, and detailed awareness of how their mother tongue and the target language differ, and of what is difficult for learners” (p. 27), which NESTs may not have.

Another unique advantage NNESTs have is their grammar knowledge. According to Madrid and Perez Canado (2004), NNESTs can provide "scientific explanations for the constructions and uses of the English language" (p. 128), which most NESTs are not able to do for their ELLs. ELLs tend to focus on grammatical accuracy more than on communicative fluency. These ELLs often understand the concepts better with grammatical explanation of the difficult vocabulary and sentence structures. NNESTs can provide such grammatical support to their ELLs.

The advantages of NNESTs are accompanied by challenges that may lessen their effectiveness as teachers (Ma, 2012). A majority of NNESTs adopt a less flexible approach to teaching (Medgyes, 2001), and focus on grammatical accuracy (Subtirelu, 2011). NNESTs' most significant challenge is related to the English language command (Madrid & Perez Canado, 2004). NNESTs’ language command challenges may be due to the way they have learned English. Because NNESTs often learn English through books rather than through language immersion, they are likely to experience problems with pronunciation, colloquial expressions, and contextual expression (Madrid & Perez Canado, 2004). Accent is another challenge for NNESTs, and various researchers have linked this to perceptions of NNESTs as less qualified teachers (Maum, 2002; Lippi-Green, 1997; Canagarajah, 1999).

Although NNESTs could utilize their own multi-lingual experiences to help create a global community of learners, many do not have the confidence needed to utilize this valuable asset with their students. NNESTs’ lack of confidence may come from their limited access to teaching resources and strategies, poor command of English, and accent. However, NNESTs’ lack
of confidence could come from the perception of being considered less qualified by students, colleagues, and/or administrators (McDonald & Kasule, 2005).

In the analysis of studies on language teacher identity, Varghese et al. (2005) identify three areas central to current understandings of NNESTs' professional identity formation. The first area refers to identity as crucially related to social, cultural, and political contexts (Duff & Uchida, 1997; Toohey, 2000). The second area refers to identity as constructed and negotiated through language as discourse (Weedon, 1997). The third area refers to identity that is not fixed, stable, or unitary but instead multiple, shifting, and in conflict (Norton, 2000). These three areas become central to theorizing professional identity of NNESTs who are learning English and teaching at the same time.

This study aims to empower and support NNESTs so they can reconceptualize their professional identity in Varghese et al’s (2005) three areas to be academically, socially and culturally confident teachers in linguistically and culturally diverse American classrooms (Reis, 2011). Researchers also want to explore the similarities and differences between NNESTs who are U.S. graduates and foreign graduates as it affects their strengths and challenges since the number of foreign-graduate NNESTs in the U.S. is increasing (Rao, 2002).

**Methods**

**Research Design**

Following Green and Preston (2005) who state that the choice of methods in a research study should be needs-based, three areas are considered in this study’s design: (1) research questions, (2) audience, and (3) relevance of research to personal experience and training (Creswell, 2012). The research questions of this study can be best answered using a basic qualitative research paradigm because participants' experiences vary and because capturing the variety of participants’ perspectives will assist researchers in understanding the issues of NNESTs (Patton, 2002). In addition, according to Creswell (2012), a qualitative research study allows exploration of a
phenomenon from the perspective of those who are involved in it. In this study, the two researchers take the roles of participants, interpreters, and advocates as they identify strengths and weaknesses of NNESTs based on the grounded theory (Corbin & Strauss, 2008).

Participants

A purposeful sampling technique is used to assist with the selection of individuals who are able to provide the researchers with rich information regarding the issue under investigation (Patton, 2002). Five NNESTs were selected to participate in this study. While this sample size may be considered small, as Patton (2002) points out, the size of the sample in qualitative work is not as important as the selection of information-rich cases.

To select study participants, the researchers contacted public school districts in St. Louis, Missouri, in order to identify NNESTs. The participants in this study were selected based on the following criteria: (1) non-native English-speakers, (2) educators currently teaching in the U.S., and (3) voluntary participants in the study. There were thirteen NNESTs who met the first two of the three criteria above; the researchers contacted them. Three of them agreed to participate in the study. Both researchers were added as participants since they also fit the selection criteria.

All five participants came to the U.S. as adults and speak English with an accent. Three out of five are leading teachers, one elementary and two secondary schools where more than 20 percent of the student population is ELLs. The fourth participant is a TESOL professor. The fifth one is the instructional coordinator and coach at an elementary school where 25 percent of students are ELLs. Regarding their oral proficiency levels, it appears that they are intermediate to superior according to the guidelines of the American Council on the Teaching of Foreign Languages (ACTFL) (1996). There are two participants whose English proficiency levels are superior, one participant advanced-low and two participants intermediate-high. Among the five participants, two are U.S. trained NNESTs and three are foreign graduate NNESTs; four participants have advanced degrees, and one is seeking a master’s degree. Their oral proficiency levels, i.e., intermediate high to superior, ensure that they can communicate with
Participant 1 (P1) is a female in her late 50s. Her native language is Bosnian. She teaches Physics in a high school with ELLs, many of who speak Bosnian. She taught in Bosnia for a number of years before coming to America, and uses Bosnian (ELLs’ L1) when introducing new concepts. All of her education was completed in her native country. Her English language proficiency level is intermediate high. She is a NNEST foreign graduate.

Participant 2 (P2) is a female in her early 50s. She teaches Biology in a high school with ELLs. She is originally from Eritrea. She is enrolled in a graduate program. Her language proficiency level is intermediate high. She is an NNEST foreign graduate.

Participant 3 (P3) is a female in her early 40s. Her native language is Mandarin. She is originally from China. She is a special education teacher in an elementary school with ELLs. All of her teacher education training was completed in America. Her English proficiency level is advanced low. She is a U.S. graduate NNEST.

Participant 4 (P4) is a female in her 50s, and she is one of the researchers for this study. Her native language is Korean. She is a teacher educator with a doctoral degree in education. Her language proficiency level is superior. She is a U.S. graduate NNEST.

Participant 5 (P5) is a female in her 30s. She is the other researcher for this study. Her native language is Russian, and she speaks four other languages including English. She is currently pursuing her Ph.D. in TESOL. Her language proficiency level is superior. She is a foreign graduate NNEST.

Data Sources

In this study, interview is the main source of data collection used to capture teachers' perspectives regarding their strengths and challenges. Using open-ended questions (Creswell, 2012), the researchers provide study participants with the structure that allows them to share their extensive views. According to Merriam (2009), the open-ended question format "allows the researcher to
respond to the situation at hand” (p. 90). The interview questions help keep the interview on the topic (Appendix A).

**Interview Protocol**

Stake (2010) suggests no more than eight questions to be used during a one-hour interview to elicit an appropriate amount of information for each research question. The interview protocol of this study has eight questions. For example, question items two and three are designed to examine NNESTs’ strengths of bilingual advantage, and linguistic and pedagogical competence. Items four and five prompt study participants to share their challenges in the areas of accent, language proficiency, and NEST superiority fallacy. Items six and seven ask participants to identify strengths as well as challenges of their teaching strategies, and items one and eight are used to explore the differences and the similarities between the U.S. graduates and the foreign graduates. Each of the eight question items has probing questions in case more information is needed (Appendix A).

**Data Collection and Analysis**

Upon receipt of e-mail confirmations from those who wanted to participate in the study, researchers continued communication via e-mails to establish time and locations for the interviews. The researchers made arrangements to accommodate participants' time and location preferences regarding each of the data collection steps. With the participants' permission, all interviews were recorded to "insure that everything said is preserved for analysis" (Merriam, 2009, p. 109) for about an hour long. An open-coding system was employed for the textual and categorical analysis (Corbin & Strauss, 2008). Once the data was collected, researchers prepared it for analysis by transcribing and organizing it. The coding process started with the coding of the first interview transcript. During coding, each of the two researchers read the transcript line by line with the notes of the researchers’ thoughts in the right margins, divided the texts into meaningful units or categories, and assigned codes to these units (Corbin & Strauss, 2008). Both researchers agreed to use in-vivo coding when participants’ words were used for labeling concepts and phenomenon described. The researchers also used
their own words when they described code titles applying their knowledge of concepts and research on this topic (Corbin & Strauss, 2008). Upon completion of the initial coding of the first transcript, both researchers met and looked at the codes they were assigning to each of the meaningful units within the first transcript. By comparing and contrasting the assigned codes, the researchers were able to refine their coding approach. When the codes were similar to each other, the researchers discussed the best code title to reflect a given concept. When the code titles were different, researchers shared their thinking and negotiated the code title selection. By negotiating the code titles, researchers were able to refine their coding system, which was then applied to other interview transcripts by each researcher independently. When researcher 1 and researcher 2 coded all of the transcripts, both researchers met to look at the coding of all the transcripts. At this time, researchers began looking at the themes that were common across the transcripts. Using constant comparative method, the researchers were examining each individual code to identify to which theme the code belonged. By negotiating the themes in which individual codes fit best, the researchers were able to group the data into four categories. These four categories are supported by the literature dealing with the strengths and challenges of NNESTs (Maum, 2002; Medgyes, 2001; Ma, 2012; Phillipson, 1996; Derwing & Munro, 1997; Kachru, 1985; Madrid & Perez Canado, 2004). Three competence categories were identified: 1) linguistic competence, 2) cross-cultural competence, and 3) pedagogical competence. Native speaker superiority fallacy that was obviously reported by the participants was added as the fourth category (See Tables 1 and 2).

**Results with Interpretation**

**Research Question 1. What are NNESTs’ perceived strengths?**

**Linguistic competence.** Interviewed NNESTs appeared to be aware of their linguistic strengths. Grammar and vocabulary knowledge along with listening and vocabulary skills were commonly identified as the strongest areas for NNESTs. "Strength I have is listening skill. I learned how to listen better than native speakers" (P1). "I am pretty good at reading. I could guess
vocabulary words in reading text easily because of my multilingual backgrounds" (P4). One interviewee pointed out how her knowledge of linguistic concepts could be helpful when teaching ELLs. “My grammar is stronger than that of NESTs. I can explain why the errors happen to the ELLs in my classroom” (P3). “Knowing more than one language is helpful because you can associate with what you have already acquired, and transfer more concepts from different languages” (P5). These ideas were reiterated by another participant, “I know two language systems and understand which English sounds may be difficult to the ELLs. I have 7 ELLs of 20 students. Mandarin does not have the /f/ phoneme, nor the perfect tense (P3). Such responses demonstrated participants' awareness of how linguistic knowledge could be transferred from the known language to the new language. 

**Cross-cultural competence.** The second category recognized during the coding process was cross-cultural competence. One participant reported, “I can understand the ELLs better whether they are from my culture or not. ELLs identify themselves with me better” (P3). This is an indication that the concept of role models may be central to the relationship between NNESTs and ELLs. NNESTs understand the challenges of acquiring English because of their own personal language acquisition experience, and can share the strategies that work well for them. NNESTs can present themselves as real examples of successful language learners whose strategies can be replicated by their students, so they can lead the learners to academic and personal success.

**Pedagogical competence.** The third category developed by clustering initial codes deals with pedagogical strategies used by the interviewees in their instructional practices. One participant (P5), who did not see any differences in instructional strategies used by NNESTs and NESTs, said, “It depends on their training.” Another interviewee (P4) pointed out, "I am stronger in terms of pedagogy. I utilize more than one way of teaching and pull examples in a way for the students to understand.” One participant reiterated this advantage saying, “Teaching experience in different countries helps me develop multiple teaching strategies. I choose the proper ones depending on the situations and students’ needs” (P5).

P1 and P3 talked about the coping strategies to compensate for challenges they experienced. P1 said, “I provide accommodations. I repeat it and spell
it. How many points is it worth? I say fifteen. I say one, five, not five, zero.” P3 stated, "Most of my ELLs do not have accurate pronunciation; I have to use the International Phonetic Alphabet (IPA) to try to help them articulate the sounds.”

Another important concept within the pedagogy category deals with lesson preparation. NNESTs put a lot of time into planning their instruction to insure success. P4 stated, "I spend sometimes 20 hours for one class. I record my presentations, and even include humor intentionally." The other element mentioned as a prerequisite of success is the use of multiple teaching aids. "I prepare visual aids such as video clips and PPT when teaching essential concepts. I use them to compensate for my accent" (P4).

**NEST superiority fallacy.** The forth category deals with the NEST superiority fallacy and NNESTs’ credibility. This concept is of interest in the area of linguistics and sociopolitics. One participant (P3) cited a district policy as one thing that could help improve attitudes towards NNESTs. She acknowledged, “The more NNESTs in the district, the better chance the district may show a fair policy and attitude toward us. Other teachers and the principal would support us better.” This quote not only shows the evidence that coworkers and administrators should be better supporters for NNESTs, but also it indicates that current policies regarding NNESTs are unfair and/or unclear.

NEST superiority fallacy could be related to time and to personal and professional qualities associated with NNESTs. P5 shared, “NEST superiority fallacy is there, but once NNESTs focus on work ethics, pedagogy, collaborative work, content knowledge, and other valuable qualities, the fallacy assumption disappears.” This suggests that the NEST superiority should be a concept used as a first resort when little information is known about the NNESTs. Learning more about NNESTs may change first impressions and refocus attention on quality rather than on false and stereotypical assumptions about NNESTs (Table 1).
<table>
<thead>
<tr>
<th>Categories</th>
<th>Perceived Strengths</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Linguistic Competence</strong></td>
<td>• Being bilingual and multilingual</td>
</tr>
<tr>
<td></td>
<td>• Knowledge of linguistics, e.g., phonology, grammar, vocabulary, reading and</td>
</tr>
<tr>
<td></td>
<td>listening comprehension skills</td>
</tr>
<tr>
<td></td>
<td>• Using L1 for explanation</td>
</tr>
<tr>
<td></td>
<td>• Understanding ELLs’ various accents</td>
</tr>
<tr>
<td></td>
<td>• Cognitive intellectuality</td>
</tr>
<tr>
<td><strong>Sociocultural Competence</strong></td>
<td>• Understanding ELLs’ cultures</td>
</tr>
<tr>
<td></td>
<td>• Role model for ELLs</td>
</tr>
<tr>
<td></td>
<td>• Open-mindedness to other cultures</td>
</tr>
<tr>
<td></td>
<td>• Better rapport with ELLs</td>
</tr>
<tr>
<td></td>
<td>• Understanding ELLs’ challenges in their lives</td>
</tr>
<tr>
<td><strong>Pedagogical Strategies</strong></td>
<td>• Multitude teaching strategies to meet ELLs’ needs based on their language</td>
</tr>
<tr>
<td></td>
<td>acquisition experiences</td>
</tr>
<tr>
<td></td>
<td>• Repeating the oral utterance using other aids (writing)</td>
</tr>
<tr>
<td></td>
<td>• Use IPA (International Phonetic Alphabet) to compensate accent</td>
</tr>
<tr>
<td></td>
<td>• Mimicking NESTs speaking and colloquial language</td>
</tr>
<tr>
<td></td>
<td>• Being aware of the errors and correct them</td>
</tr>
<tr>
<td></td>
<td>• Take time to prepare the lessons</td>
</tr>
<tr>
<td></td>
<td>• Utilizing cross-cultural experiences in teaching</td>
</tr>
<tr>
<td></td>
<td>• Using visual and audio aids, grouping strategies</td>
</tr>
<tr>
<td><strong>Native Speaker Superiority</strong></td>
<td>• More NNESTs to have a more fair policy</td>
</tr>
<tr>
<td><strong>Fallacy</strong></td>
<td>• Support from other NEST colleagues and principals</td>
</tr>
<tr>
<td></td>
<td>• Strong credentials in work ethics, pedagogy, content knowledge, problem solving,</td>
</tr>
<tr>
<td></td>
<td>and etc.</td>
</tr>
</tbody>
</table>
Research Question 2. What are NNESTs’ perceived challenges?

**Linguistic competence.** Under the category of linguistic competence, one interviewee (P4) stated, "Oral fluency is challenging like vowel production, intonation and idioms. Writing, especially academic writing is my challenge." Being very critical of her skills, this participant was very specific when naming her area of challenge, e.g., vowel articulation. Speaking was named as an area of difficulty due to the colloquial nature of social language for NNESTs. “The challenge is speaking in day-to-day conversation and colloquial language to explain concepts. It may not be weakness but difference, but students may see that as weakness” (P5).

Accent was presented as another challenging concept. “English intonation is difficult. Students do not understand me because of that. I repeat and use gestures. I cannot change my accent” (P2). “People assume that I am not as good as NESTs due to the accent. My challenge is to prove them who I am and what I can do” (P3). Accent issues mentioned were also expressed in relation to the age they arrived in America. “The accent depends on when we came to America. It is age attributed” (P4). When talking about ‘acquired versus learned’ language skills, interviewees also brought up issues related to speaking skills. “Speaking, of course, is more natural to NESTs. My speaking is like you are reading a book. Speaking is an ability that is acquired. I do not use slang in a way how other teachers use it” (P3).

**Cross-cultural competence.** Within the category of cross-cultural factors, one interviewee responded, “Since I was brought up with British English, the pronunciation and spelling of American English are hard to understand. ‘It is /hot/’, to me it’s the hat that you wear. In America, /hot/ means it’s hot in temperature or spice” (P2). Having exposure to English within the context of English-learning was another element stressed by the study participants. “I feel a bit anxious when I teach the native speaking students and some ELLs who have spent more time in English-speaking environments” (P2).

Interviewees mentioned the quality of contextual resources used for teaching English overseas. P3 shared, “Among NNESTs, there is a difference in preparing resources. Foreign graduates have limited resources
for listening and speaking, and exposure to English language and culture.” The issues of confidence are contributing factors to how NNESTs feel about their cross-cultural competence. “I am self-conscious about mistakes when speaking and writing. I have low confidence and feel anxious and inadequate” (P2). This might be rooted in the fact that native speakers judge NNESTs by their language abilities. “It is hard to be accepted by the students, but it is easier to deal with the students than adults. Adults such as teachers, parents and administrators are less patient and more judgmental” (P3). P5’s statement shows how NNESTs should deal with the concept of acceptance, “You should be comfortable and confident with your accent.” P4 added, “I am confident about preparing contextual resources because of my bilingual and bicultural experiences and competence. Challenges are becoming strengths” (P4).

Pedagogical competence. When discussing pedagogical competence, interviewees focused on the lack of communicative teaching strategies, which, together with previously mentioned lack of exposure to authentic materials, caused difficulties. “Teaching methods used in my native country are not communicative and do not allow for practice in speaking” (P2). “I have learned a lot of theories at the teacher education programs in my country, but not much on teaching the communicative language in the classrooms” (P1). “It is not only a problem of my language proficiency, but also I am lack of knowledge about school culture. The school system is very different from ours” (P1). Expressing doubts regarding the ability and competency of teaching native English speakers attests to low confidence and possible lack of strategies needed to deal with challenges NNESTs might experience in mainstream American classrooms.

NEST superiority fallacy. Under NEST superiority fallacy category, one interviewee mentioned assumptions held by native English speakers. “At first sight, people automatically have the assumptions by the names and accent that I do not have intellectual capability and language competence” (P5). These assumptions sometimes lead to situations where NNESTs don't feel confident. “The district people need to accept NNESTs with the same attitude they have toward NESTs. Administrators do not believe I can do a good job. They correct my English in front of the students” (P3). “Not all NES colleagues are open-minded. They make assumption that the NNESTs
are not as good" (P1). These statements are examples of attitudes that some NESTs may have towards NNESTs (Table 2).

Table 2
NNESTs’ Perceived Challenges Reported by Participating Teachers

<table>
<thead>
<tr>
<th>Categories</th>
<th>Perceived Challenges</th>
</tr>
</thead>
</table>
| Linguistic Competence     | • Academic writing with lengthy sentences, without natural flow  
|                           | • Writing is harder because I cannot use non-verbal language  
|                           | • Social and colloquial language/speaking  
|                           | • No fluency in speaking – bookish nature of conversation  
|                           | • Speaking in a topic that the NNESTs are not familiar with  
|                           | • Accent and intonation  
|                           | • More challenge to Foreign graduated NNESTs  
|                           | • Slangs, idioms, special topics like sports, music, arts are challenges to foreign graduates  |
| Sociocultural Competence  | • Challenges with British English  
|                           | • Not contextual  
|                           | • Anxiety to teach native speaking students  
|                           | • Lack of resources connected to the target culture  
|                           | • Self-conscious about mistakes  
|                           | • NESTs are not patient or try to understand NNESTs  
|                           | • Easier to deal with the students than with the adults at school  |
| Pedagogical Strategies    | • Weak command of English prohibit delivering lesson effectively  
|                           | • Lack of communicative approach skills  
|                           | • Weak at hands-on, practice-oriented methodologies  
|                           | • Weak at preparing resources  
|                           | • Lack of the target culture knowledge to adopt to the teaching strategies  |
| Native Speaker Superiority Fallacy | • Fallacy assumption about effective communication without evidence  
|                           | • Fallacy assumption about intellectual capability  
|                           | • Discrimination against NNESTs  
|                           | • Low expectations from students, colleagues, administrators including the district personnel  
|                           | • Low self-confidence  
|                           | • Identity crisis – “They want me to be like NESTs.”
Foreign versus U.S. educated NNESTs. Similarities and differences between foreign and U.S. NNEST graduates were explored. One foreign graduate (P2) shared, “U.S. graduates are stronger in speaking; their pronunciation is without much accent. The younger you came, the better.” This comment supports the linguistic strengths of U.S. graduates who came here at young ages. The participants expressed ideas regarding the differences between the U.S. and foreign graduate NNESTs in terms of their focus on theories and traditional grammar methods. “Foreign graduate NNESTs are stronger in theories of linguistics, especially grammar” (P4). A foreign graduate (P2) said, “Because of the limited resources for speaking and listening in my country, NNESTs tend to use the traditional grammar methods to teach English language.” “In many foreign countries, they focus on grammar. The U.S. graduates use colloquial English language, and the foreign graduates use more formal, grammatically correct but bookish language" (P5). Looking at the cross-cultural strengths, interviewees shared how the amount of culturally relevant information would differ within classrooms taught by U.S. prepared NNESTs and those taught by foreign NNESTs. “The U.S. graduate NNESTs bring more culturally relevant resources to the class that they have learned in their teacher education programs than the foreign graduates” (P2). When it comes to instructional and assessment practices, foreign graduate NNESTs also seem to have certain disadvantages. "The foreign graduates do not have lots of knowledge about hands-on strategies, contextual and cultural resources; we are weak at assessments" (P1). Based on the information shared by participants, some of their difficulties within classrooms could result from how language learning and teacher preparation are delivered in their country of origin (Table 1 and 2).

Discussion

There are two research questions in this study. They are: 1). What are the perceived strengths of NNESTs in the U.S.? and 2) what are the perceived challenges of NNESTs in the U.S.? The researchers identified the four common themes or categories, i.e., 1) linguistic competence, 2) cross-cultural competence, 3) pedagogical competence and 4), native speaker superiority fallacy. When the results were reported, these four categories
were used under each of the two Research Questions. The findings of this investigative study show that NNESTs have distinctive strengths and weaknesses (Jenkins, 2011) influencing their effectiveness in the U.S. classrooms.

As for the NNESTs’ strengths (Research Question 1), the participating NNESTs reported that they have better cross-cultural and language acquisition experiences, and pedagogical theories that help ELLs acquire the target language and content. Being able to speak two or more languages is a strength, not a deficit. The findings also support that NNESTs can be role models to ELLs; NNESTs are more empathetic and compassionate to them. These results echo previous research studies, such as Kamhi-Stein (1999), Llurda and Huguet (2003), Medgyes (1994), Moussu (2006), Reves & Medgyes (1994), Ma (2012), and Tang (1997).

In regard to the challenges of NNESTs (Research Question 2), lack of English language proficiency was cited most (Reves & Medgyes, 1994; Ma, 2012). The challenges reported by the participants in linguistic competence include academic writing, colloquial and idiomatic expression in social context, fossilized accent, bookish nature of speaking, and difficulty about current topics such as politics, sports, and arts. In the pedagogy category, the three participating teachers (P1, P2, and P3) state that they have difficulty preparing contextual resources relevant to the local culture (Medgyes, 1994) and in developing hands-on activities. This is especially true for foreign graduate NNESTs who are accustomed to using the prescribed curriculum in their native countries.

There were new findings from this study about the NNESTs’ strengths. The results from this study showed that the NNESTs’ strengths included the participants’ bilingual competence, cross-cultural experiences, and advanced degrees. It seems that while NNESTs are acquiring a new language, they continue to develop their cognitive domains (Cummins, 2000) and teaching credentials more than the monolingual NESTs. As a result of this cognitive capacity, NNESTs can prepare more insightful and creative lesson activities (Medgyes, 2001) and higher-order thinking materials (Table 1). One of the participants (P5) said that her teaching pedagogies might be better when compared to NESTs because of her teaching experiences in many different
countries. All five participants in this study are seeking or have acquired advanced degrees, i.e., master and doctoral degrees, as well as state teaching certificates. Their study for advanced degrees could have also fostered effective teaching behaviors and strong theoretical knowledge. Even though further study on the credentials is needed, perhaps NNESTs are more inclined to seek additional credentials.

The foreign graduates indicated lack of field experiences in their own countries. Some of them had only one-month or less field experience in their four-year teacher education programs. They also felt challenged in the area of self-confidence because of deficiencies in their command of language and “fallacy” assumptions from others (Moussu, 2006). These challenges could impact their teaching. NNESTs usually display low confidence, but at the same time, P4 and P5 in this study reported that their linguistic challenges did not hinder their ability to teach in U.S. classrooms (McDonald & Kasule, 2005) due to their lesson preparation and multilingual and multicultural experiences.

One participant (P1) in this study shares the same L1, Bosnian, with her ELLs. She is able to code-switch to Bosnian with her ELLs when she introduces difficult concepts (Ma, 2012). Using L1 as a resource is a great instructional tool as Echevarria, Vogt, and Short (2008) suggest in their SIOP Component 5, Interaction, i.e., giving ample opportunities for students to clarify in their L1. In Gómez, Freeman and Freeman’s (2005) study, bilingual immersion instruction is supported. Participating students in their study following the dual-language education model have shown higher levels in reading and mathematics (Gómez, Freeman & Freeman, 2005). The dual language education model has not been implemented in the schools in which this study was conducted. However, this small example of using L1 for explaining new concepts is well supported by researchers. NNESTs, however, need more training about the code switch for effective content teaching.

**Implication and Future Direction**

Knowing the strengths and the challenges of NNESTs is of vital importance not only for the NNESTs themselves, but also for school administrators who make hiring decisions and evaluate the performance of their NNESTs. In
addition, such information may assist school leaders in providing proper support for NNESTs in making working experiences more positive.

One unique contribution of this study is that it uncovers and centers on the positive impact that NNESTs could have on interrupting NESTs’ superiority fallacy. Both P4 and P5 carry advanced degrees and have superior levels of oral proficiency. P4 has lived in this country for over 32 years, and P5, for about 12 years. P5 speaks more than four languages including English. Both of them consider their competence in academic content, pedagogical strategies, linguistics, and cross-cultural contexts to be as good as NESTs even with their accents.

The results from the other three participants (P1, P2, and P3) are supported by the general findings of other empirical researches (Canagarajah, 1999; Lippi-Green, 1997; Llurda, 2004; Maum, 2002; Moussu, 2006). These three participants have not reached the superior level in their oral fluency. Awareness of their strengths and weaknesses as NNESTs is not as specific as that of P4 and P5. The three of them are concerned about teaching native speaking students and are not confident yet about themselves as effective teachers in the U.S. classrooms.

Based on the findings from this study and research on NNESTs, the authors would like to conclude with several suggestions to NNESTs and school administrators. As Pavlenko (2003) sees, NNESTs’ appropriation of newly imagined identities is an important aspect of a learning journey, and the teacher education programs need to offer identity options that allow NNESTs to imagine themselves as legitimate members of professional communities (Ilieva, 2010). The foreign graduate teachers “displayed multiple and conflicting identities as legitimate speakers” (Ilieva, 2010, p. 349) as classroom teachers of native speaking students.

First, NNESTs should be proactive in classrooms, construct positive professional identities (Ilieva, 2010), and improve their language proficiency. Based on specific diagnosis of their weak areas, the NNESTs need to improve their language proficiency in the diagnosed specific phonemes, competence of certain topics, and academic writing rather than accepting the deficient assumptions. NNESTs need to immerse themselves into the host culture and its contextual resources, and integrate what they
acquire into their teaching practice. School administrators need to establish competency benchmarks, which are based on teaching competence and performance rather than on NNESTs’ accent and appearance, so that NNESTs can grow together with the teaching and learning community in America. Our hope for NNESTs is that people in America become aware of NNESTs as educational resources, who can contribute to their understanding of the culturally and linguistically diverse world. Pavlenko (2003) argues that the teacher education programs need to afford the imagination of new teacher identities and suggests that such programs may provide opportunities for NNESTs to develop alternative instructional practices compatible with positively imagined identities. As a result, NNESTs could become more intuitive, spontaneous and creative as well as utilize their linguistic and cross-cultural resources to help our linguistically and culturally diverse classrooms (Davies in Moussu & Llurda, 2008).

As for the foreign graduates, they may hold entirely different views on how to approach teaching in their professional contexts. U.S. educators need not to push them to the way they think best, i.e., creative inquiry-based instruction vs. prescribed and direct instruction. The foreign graduates are used to the prescribed and direct instruction, which resulted in richness of content and theories in linguistics, but might not be well equipped with contextual pedagogies. It takes time for the foreign graduates to become more proficient in English language, and integrate their richness of content knowledge and theories (product) into the inquiry-based pedagogies (process), with the socioculturally appropriate resources in American classrooms.

This study needs to be replicated and/or expanded to include more participants in diverse educational settings. It was difficult to get volunteers for the study in an area in which there are not many certified NNESTs. Some NNESTs were not sure if their English was good enough to participate in this study even though they had been teaching in American classrooms for a while. Observation data could be added to the interview transcription to determine the actual teaching effectiveness of study participants. A longitudinal study is also recommended so that any change or improvement in the four categories of the study can be measured with more significance. Having NESTs in the study could also provide the data to compare to that of
NNESTs. In addition, researchers would like to stress that while this study was able to shed some light on how NNESTs perceive their strengths and challenges in the American education, the findings of this study cannot be generalized to all NNESTs. First, since participating was voluntary, only women participated in this study, thus only female perspective is brought into this analysis, which may or may not be reflective of the male NNESTs' experience. Second, the nature of qualitative research studies does not suggest generalizability of findings. Therefore, the current research can be viewed as a pilot study of the interview questions or as a preliminary research, which can be replicated with more participants that may represent the norm of NNESTs in America.

Even with its limitations, it is obvious that this study contributes to understanding NNESTs’ identity in terms of their strengths and weaknesses, so the other teachers, administrators, students, and parents could hear ‘their’ voice, utilize their strengths, and support the weak areas by providing mentorship to develop their potentials. The new finding regarding NNESTs’ confidence, i.e., testimonials from P4 and P5 with their accents, could encourage other NNESTs who may be struggling to find their professional identity as teachers in the U.S. classrooms. It may take a lot of effort and awareness for NNESTs to reach a superior English proficiency level, and to acquire confidence to become effective teachers in the U.S. classrooms. Accent, if NNESTs reach the superior English proficiency levels, should not be counted as weakness; it should be considered a contribution because the accent represents multilingualism and multiculturalism in this global era. This process of acquiring confidence will be shortened with a more specific policy such as the validated measure of evaluating NNESTs’ credentials.

References


paper presented at the English Australia Conference, September, Perth, and Western Australia.


Moussu, L. (2006). *Native and nonnative English-speaking English as*


---

**Kim Hyunsook Song**  Associate Professor, Assistant Chair and Graduate Program Director, Department of Educator Preparation, Innovation and Research, University of Missouri - St. Louis

**Alla Gonzalez Del Castillo**  PhD Candidate, Department of Educator Preparation, Innovation and Research, University of Missouri - St. Louis, U. S. A.

**Contact Address:** One University Boulevard, University of Missouri – St. Louis, St. Louis, MO 63121. U. S. A. songk@umsl.edu
Appendix
Interview Protocol

1. Tell me about your teacher education program, and where and how were you prepared to become a teacher?
   Possible probe: How did your course work at the university prepare you to teach in a language that is not your first language?

2. How would you describe your strengths as a bilingual/trilingual educator?
   Possible probe: What are your linguistic strengths as a bilingual?

3. In what ways do you think your pedagogical and cross-cultural competence differs from NESTs?
   Possible probe: What are your pedagogical strengths compared to the NESTs? What are your cross-cultural strengths compared to the NESTs?

4. How would you describe some of the challenges you have or had in the past that are related to you being a NNEST in the areas of language proficiency?
   Possible probe: What do you attribute these challenges to?

5. What are challenge you have from your students, parents and administrators toward you as a NNEST?
   Possible probe: What are sociocultural challenges you have when you deal with the students, the parents and administrators? Do you think they practice equity to the NNESTs?

6. What are the compensating strategies to conquer your challenges as a NNEST?
Possible probe: Can you specify the specific challenges when you teach? How have you conquer the challenges? Any specific coping strategies?

7. In your opinion, what makes an effective NNEST?
   Possible probe: What are some of the linguistic, cross-cultural and pedagogical characteristics you have that contribute to being an effective educator?

8. What similarities and differences do you see between NNESTs who received their teaching credentials in the U.S. and those who graduated from a foreign university?
   Possible probe: What could be the strengths and the weaknesses of the foreign graduate NNESTs compared to the U.S. graduates?
Teacher-Student Relationships, Social and Emotional Skills, and Emotional and Behavioural Difficulties

Maria Poulou

1) University of Patras

Date of publication: February 24th, 2015


To link this article: http://dx.doi.org/10.4471/ijep.2015.04

PLEASE SCROLL DOWN FOR ARTICLE

The terms and conditions of use are related to the Open Journal System and to Creative Commons Attribution License (CC-BY).
Teacher-Student Relationships, Social and Emotional Skills, and Emotional and Behavioural Difficulties

Maria Poulou
University of Patras

Abstract

In this study, the role of teacher-student relationships and students’ social and emotional skills as potential predictors of students’ emotional and behavioural difficulties was investigated by tapping into 962 primary school students’ perceptions via questionnaires. While significant correlations were found linking teachers’ interpersonal behaviour and students’ social and emotional skills to emotional and behavioural difficulties, data analysis indicated that students’ social and emotional skills were found to be more of a determinant of their behaviour than teachers’ interpersonal behaviour. Results are interpreted in relation to systems perspective and Social and Emotional Learning theory, and practical implications of the findings are discussed.

Keywords: classroom interaction; social and emotional skills; emotional and behavioural difficulties
Relaciones Profesorado-Alumnado, Habilidades Sociales y Emocionales, y Dificultades Emocionales y Comportamentales

Maria Poulou

University of Patras

Resumen

En este estudio, se investiga el papel de las relaciones profesor-alumno y las habilidades sociales y emocionales de los estudiantes como posibles predictores de las dificultades emocionales y conductuales de los estudiantes, a través del uso de cuestionarios para explorar las percepciones de 962 estudiantes de la primaria. Si bien se encontraron correlaciones significativas vincular el comportamiento interpersonal del profesorado y las habilidades sociales y emocionales del alumnado, el análisis de los datos indicó que las habilidades sociales y emocionales del alumnado resultaron ser determinadas en mayor medida por el comportamiento del profesorado que por el comportamiento interpersonal del profesorado. Los resultados se interpretan en relación con perspectiva de sistemas y la Teoría del Aprendizaje Social y Emocional, y se discuten las implicaciones prácticas de los resultados.

Palabras clave: interacción en el aula, habilidades sociales y emocionales, dificultades emocionales y comportamentales.
Children’s emotional and behavioural difficulties are the result of multiple risk factors working in concert with one another. Social, environmental and biological factors are considered to mutually influence each other to form a system of “correlated constraints” in which difficulties in one domain maintain difficulties in another (Sutherland & Oswald, 2005). The school environment consists of such a system, in which behaviour patterns are products of a dynamic relation between the individuals and their environment. In this context, not only are the students shaped by their environment, but they also have an effect on that environment. At this point, a question arises: what aspects related to classroom context, teachers or students themselves are likely to be most important in predicting school behaviour?

Existing research has implicated the role of both classroom and teacher factors as being related to students’ behaviour. In particular, such research points to the important role of relationships with teachers and children as strong predictors of a child’s behaviour (Wubbels, 2005; Wubbels & Brekelmans, 2005). Another trend of research underlines the implementation of social skills programmes for students with emotional and behavioural difficulties or to whole student populations (Cooper & Jacobs, 2011), denoting that the lack of appropriate social or emotional skills is also a strong predictor of a child’s behaviour. Finally, researchers also agree that disclosure of the underlying factors of a student’s adjustment difficulties is important to diminishing social and behavioural difficulties, and that this information should emanate from the student’s own self-perceptions (Ryan & Shim, 2008).

Teachers’ interpersonal behaviour (Wubbels, Brekelman den Brok, & van Tartwijk, 2006) has received a generous amount of attention in research, particularly in secondary students’ achievement outcomes. Also, there is considerable evidence for the implementation of Social and Emotional Learning theory toward students’ behaviour difficulties (Ogden 2001; Pakahslati et al., 2002). However, far less attention has been paid to the effect that both student-teacher relationships and students’ social and emotional skills have on their emotional and behavioural difficulties in the classroom. Furthermore, educational researchers need to explore the
mechanisms underlying the complex relationships that may impact the behaviour of students.

The current study supplements and furthers the existing body of research by investigating the correlations between teachers’ interpersonal behaviour and students’ social and emotional skills, as well as the degree of influence they have on students’ emotional and behavioural difficulties. A model for interpreting these difficulties is also devised according to primary students’ own perceptions. First, we will discuss some studies that are relevant in this respect; then, we will present the approach taken in the current study.

**Teacher-Student Relationships and Students’ Emotional and Behavioural Difficulties**

There is a growing body of evidence claiming that supportive teacher-student relationships play an important role in a healthy classroom environment (Davis, 2001), as well as that they encourage students’ connections to school and the production of desired outcomes for students, both socially and academically (den Brok et al., 2010; Jennings & Greenberg, 2009).

The influence of the affective quality of teacher-student relationships on students’ perceptions may be especially true for children with behavioural problems (Henricsson & Rydell, 2004; Hughes et al., 2001). For instance, adjustment problems in schools have been linked to the failure of classroom environments to meet students’ needs for a feeling of belonging to the classroom (Martin & Dowson, 2009). Inadequate relations with a teacher may lead to an aversion towards school and feelings of disengagement. When students feel alienated from school, they are at greater risk of developing antisocial behaviours, delinquency and academic failure (U.S. Department of Education, 1998). Dutch researchers (Wubbels, Creton & Holvast, 1988) investigated teacher behaviour in classrooms from a communication systems perspective. Within the communication systems perspective, it is assumed that the behaviours of the participants mutually influence each other. Wubbels et al. (1988) interpret students’ difficulties as the result of an interaction between teachers and students. They focused on an interpersonal perspective on teaching, which means that teacher
behaviour is described and measured in terms of the teacher-student relationship, according to students’ perceptions. Following this conceptual framework, research has evolved to outline the relationships between teachers’ interpersonal behaviour and the cognitive and affective outcomes of primarily secondary students (den Brok et al., 2004; Wubbels & Brekelmans, 2005; Wubbels, 2005). Surprisingly, research employing the systems perspective to interpret primary students’ emotional and behavioural difficulties is rather limited. Unfortunately, little is known about how the teacher-student relationships may influence students’ behavioural adjustments (Birch & Ladd, 1998). The communication systems perspective is strong in depicting actual classrooms and students’ perceptions, but it is not well developed in its theoretical explanations of the underlying processes linking teacher-student relationships and students’ emotional and behavioural difficulties. For example, the literature is ambiguous as to which teacher’s dimensions are most critical for particular student emotional or behavioural difficulties, or what processes mediate the relations of different aspects of teacher behaviour and adaptive students’ behaviour. The current study attempted to add to the literature by investigating teacher-student relationships with regard to primary students, as a potential contributor to students’ emotional and behavioural difficulties in class. It attempted to delineate the paths in which teacher-student relationships affect students’ behaviour and the benefits from adopting a relational perspective in the study of emotional and behavioural difficulties. It was hypothesised that positive and friendly relationships between the teacher and students would be associated with a decrease in antisocial and emotional difficulties.

**Students’ Social and Emotional Skills and Emotional and Behavioural Difficulties**

The systems approach attempts to understand the functioning of a communicative system rather than examine the individual characteristics of the participants. Within this framework, the problems between teacher and students are not deduced from the characteristics of individual students or teachers, but rather from the typology of the classroom system formed by teachers and students (Wubbels et al., 1988). McLaughlin (2008) denoted
the dangers in solely adopting an individualistic programmatic approach and suggested a wider emphasis on relationships, pedagogy and community building in the development of emotional well-being in young people. Based on Goleman’s (1995; 1998) research on emotional intelligence she contended that children learn early on, from the reactions of adults, how to manage their feelings and respond to and internalise these reactions, and concluded that children’s emotional skills such as the capacity to regulate emotions could be learned through relationships with significant others. The implications for pedagogy and teacher-student relationships are profound, and have been informed by the Social and Emotional Learning (SEL) movement. The SEL movement supports the axiom that the cultivation of social and emotional skills to children is related to educational goals and is considered crucial for the healthy psychological adjustment of children and adolescents (Ciarrochi & Scott, 2006; Elias, 1997; Hastings et al., 2000; Pakaslahti et al., 2002).

The SEL movement’s main contribution to educational settings is with regard to children with emotional and behavioural difficulties. Ogden (2001) asserted that socially competent students are less engaged in problematic behaviours, are better at making friendships and have more effective ways of dealing with authority, conflict resolution and problem solving than their more disruptive peers. Adolescents with poor social and emotional skills are more likely to display emotional and behavioural difficulties (Poulou, 2009), feel withdrawn and excluded, and consequently are more likely to behave in non-conventional ways (Petrides et al., 2004). The current study investigated the role of social and emotional skills in determining students’ emotional and behavioural difficulties. However, skills training interventions by themselves do not improve children’s peer status or their teacher ratings regarding their behaviour. Rather, interventions, which focus directly on the affective quality of teacher-student relationships, could be a helpful alternative to skills-training approaches (Hughes et al., 2001). Based on these assumptions, the current study examined the independent contribution of teacher-student relationships and students’ social and emotional skills to students’ emotional and behavioural difficulties.
The Present Study

The current study attempts to identify the effect of teacher-student relationships and students’ social and emotional skills to students’ emotional and behavioural difficulties, and devise a heuristic model with the potential predictors of emotional and behavioural problems in classrooms. In line with social-cognitive theories, the study proposes that students’ perceptions of the classroom environment effect their adaptive behaviour. In fact, it is the functional significance or meaning of the environment to the individual, rather than the environment per se, that is the most important aspect of concern for the investigation of adjustment in schools (Ryan & Grolnick, 1986). Therefore, in our study, the major variable of interest was individual students’ perceptions of the degree to which teacher-student relationships and students’ skills afforded emotional and behavioural difficulties. And although students at the end of primary education are able to provide stable, reliable and valid ratings of teacher behaviour (den Brok et al., 2004), their own perceptions of their experiences and relationships with teachers have been explored in a limited way (Fisher, Waldrip & den Brok, 2005; Warden et al., 2003).

Aims of the study: Following the assertions above, the aim of this study was to propose a heuristic model that establishes primary students’ social and emotional skills, along with teacher-student relationships, as an organisational framework that can be examined in relation to students’ emotional and behavioural difficulties (Figure 1). This generates the question: which teacher-student interpersonal behaviours or students’ social and emotional skills relate to students’ emotional and behavioural difficulties?

Hypotheses of the study: We hypothesized that teacher-student relationships and students’ social and emotional skills influence students’ emotional and behavioural difficulties. Based on prior research, we expected that students’ with lower scores on emotional and behavioural difficulties would report higher scores on teacher’ leadership and helping/friendly behaviour and appropriate social and emotional skills, than their peers with higher scores on emotional and behavioural difficulties. Compared with prior studies, we expected that the contribution of both teachers’ interpersonal behaviour and students’ social and emotional skills would
provide a fuller understanding of the mechanisms entailed in the formation of students’ emotional and behavioural difficulties at classrooms.

Figure 1. Hypothesized model exploring the relationships between teacher-student relationships and social and emotional skills with emotional and behavioural difficulties.
Method

Participants

A total of 962 participants, of which 470 (48.9%) were males and 492 (51.1%) were females, from 25 state elementary schools of central, south and northern Greece voluntarily participated in the study. Of these, 401 (41.9%) students attended the fifth grade and 561 (58.1%) the sixth (final) grade of elementary school. The students were Caucasian, had Greek nationality and ranged from 11-12 years old.

Measurements

Questionnaire on Teacher interaction (QTI).

Students’ perceptions about teacher-student relationships were estimated using the Questionnaire on Teacher Interaction (QTI). The QTI was originally developed in the Netherlands. Adapting the Leary’s (1957) model of interpersonal behaviour model to the context of education, Wubbels et al. (1987) devised the Model of Interpersonal Teacher Behaviour. This model has two central factors, namely ‘Influence’ (that is, who is controlling the communication, with teacher Dominance on the one end and teacher Submission on the other) and ‘Proximity’ (that is, how much cooperation there is between the people who are communicating, with teacher Opposition on the one end and teacher Cooperation on the other). The two dimensions are divided into eight dimensions of teachers’ behaviour: leadership, DC (e.g., S/he is a good leader), helping/friendly behaviour, CD (e.g., S/he is someone we can depend on), understanding behaviour, CS (e.g., If we have something to say s/he will listen), giving students freedom, SC (e.g., S/he gives us a lot of free time in class), uncertain, SO (e.g., S/he seems uncertain), dissatisfied, OS (e.g., S/he is suspicious), admonishing, OD (e.g., S/he gets angry) and strict behaviour, DO (e.g., S/he is strict). These eight categories of behaviour are distributed on a circular frame with equal distances to each other, and equal distances to the centre of the circle. The preconditions above place the Model of Interpersonal Teacher Behaviour in the category of the ideal circumplex models (Figure 2).
The 64-item QTI American version was constructed in 1988 and has been translated into more than 15 languages. Cross-cultural studies empirically validated the QTI instrument (den Brok et al., 2004; Fisher et al., 2005; Fraser & Walberg, 2005; Lapointe, Legault, & Batiste, 2005). Kyriakides (2005) developed the Greek version of the QTI based on the American version. The inventory consists of 63 items, which are answered on a 5-point Likert scale, ranging from 1 (never) to 5 (always). The examination of the reliability and validity of the Greek version of the QTI was investigated by subjecting the scale scores to a multilevel factor analysis (Kyriakides, 2005). In the current study, prior to the main analysis, the internal consistency of the eight QTI subscales was examined. Findings showed that alpha values
ranged from .51 to .80 (Table 1). Information validity of the instrument is analytically described elsewhere (Poulou, in press).

The Matson Evaluation of Social Skills with Youngsters (MESSY)

Students’ self-reports on the possession of social and emotional skills were examined with the Matson Evaluation of Social Skills with Youngsters (MESSY), developed by Matson et al. (1983). In the present study, two subscales of the MESSY were used: ‘Appropriate Social Skills’, consisted of 23 items (e.g., I look at people when I talk to them) and ‘Inappropriate Assertiveness’, consisted of 16 items (e.g., I threaten people or act like a bully). Each item is rated on a 5-point Likert-type scale ranging from 1 (not all corresponding) to 5 (corresponding perfectly). The self-report version of MESSY can be completed by children and teenagers aged 4-18 years of age. A number of studies empirically validated the MESSY instrument and extended its applicability as a method of assessing childhood problems (Chou, 1997; Matson et al., 1985; Teodoro et al., 2005). The English version of the MESSY scale has been translated into Greek by the author. Effort was made to ensure that the original meaning of each item was retained in the Greek translation. In order to examine its translation validity, linguistic parallelism was checked by independent back-translation. The reliability coefficients for appropriate social skills ($M= 3.97$, $SD= 0.57$), and inappropriate assertiveness subscales ($M= 1.83$, $SD= 0.68$) were .83 and .86 respectively (Table 1). Information validity of the instrument is analytically described elsewhere (Poulou, in press).
Table 1

Correlation coefficients for the measures

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
<th>13</th>
<th>14</th>
</tr>
</thead>
<tbody>
<tr>
<td>QTI</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. leadership</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. helping</td>
<td>.72**</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. understanding</td>
<td>.71**</td>
<td>.76**</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. student freedom</td>
<td>.35**</td>
<td>.42**</td>
<td>.34**</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. uncertain</td>
<td>-.46**</td>
<td>-.47**</td>
<td>-.48**</td>
<td>-.03</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. dissatisfied</td>
<td>-.27**</td>
<td>-.35**</td>
<td>-.29**</td>
<td>-.12**</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. admonishing</td>
<td>-.45**</td>
<td>-.56**</td>
<td>-.53**</td>
<td>-.19**</td>
<td>.64**</td>
<td>.53**</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. strict</td>
<td>-.18**</td>
<td>-.31**</td>
<td>-.22**</td>
<td>-.24**</td>
<td>.23**</td>
<td>.38**</td>
<td>.37**</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MESSY</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. appropriate social skills</td>
<td>.34**</td>
<td>.32**</td>
<td>.35**</td>
<td>.16**</td>
<td>-.22**</td>
<td>-.13**</td>
<td>-.193**</td>
<td>-.09*</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. inappropriate assertiveness</td>
<td>-.25**</td>
<td>-.23**</td>
<td>-.30**</td>
<td>-.04</td>
<td>.36**</td>
<td>.28**</td>
<td>.380**</td>
<td>.16**</td>
<td>-.45</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SDQ</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11. emotional</td>
<td>-.20**</td>
<td>-.15**</td>
<td>-.18**</td>
<td>.00</td>
<td>.19**</td>
<td>.18**</td>
<td>.216**</td>
<td>.08*</td>
<td>-0.07</td>
<td>0.24**</td>
<td>1.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>12. conduct</td>
<td>-.25**</td>
<td>-.22**</td>
<td>-.27**</td>
<td>-.04</td>
<td>.35**</td>
<td>.30**</td>
<td>.372**</td>
<td>.19**</td>
<td>-.21**</td>
<td>0.58**</td>
<td>.40**</td>
<td>1.00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>13. hyperactivity</td>
<td>-.20**</td>
<td>-.20**</td>
<td>-.22**</td>
<td>-.09**</td>
<td>.28**</td>
<td>.25**</td>
<td>.272**</td>
<td>.18**</td>
<td>-.29**</td>
<td>0.48**</td>
<td>.37**</td>
<td>.48**</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>14. peers</td>
<td>-.18**</td>
<td>-.15**</td>
<td>-.22**</td>
<td>.02</td>
<td>.25**</td>
<td>.23**</td>
<td>.244**</td>
<td>.06</td>
<td>-0.32**</td>
<td>0.28**</td>
<td>.43**</td>
<td>.42**</td>
<td>.34**</td>
<td>1.00</td>
</tr>
<tr>
<td>M</td>
<td>4.06</td>
<td>4.02</td>
<td>4.05</td>
<td>3.17</td>
<td>1.86</td>
<td>2.33</td>
<td>1.92</td>
<td>2.81</td>
<td>3.97</td>
<td>1.83</td>
<td>.61</td>
<td>.43</td>
<td>.55</td>
<td>.47</td>
</tr>
<tr>
<td>SD</td>
<td>.74</td>
<td>.81</td>
<td>.74</td>
<td>.93</td>
<td>.82</td>
<td>.70</td>
<td>.83</td>
<td>.93</td>
<td>.57</td>
<td>.68</td>
<td>.45</td>
<td>.43</td>
<td>.41</td>
<td>.41</td>
</tr>
<tr>
<td>Alpha</td>
<td>.72</td>
<td>.80</td>
<td>.72</td>
<td>.51</td>
<td>.70</td>
<td>.69</td>
<td>.71</td>
<td>.56</td>
<td>.83</td>
<td>.86</td>
<td>.63</td>
<td>.43</td>
<td>.59</td>
<td>.57</td>
</tr>
</tbody>
</table>

**p ≤0.05, *p ≤0.01**
The Strengths and Difficulties Questionnaire (SDQ).

The SDQ is a community-wide screening inventory used for the detection and treatment of child behavioural problems (Goodman, 1999). The self-report version of the SDQ can be completed by children and teenagers aged 11-16 years. The SDQ has been used in studies of different populations (Goodman, Renfrew, & Mullick, 2000). In the current study we administered four of the SDQ scales, with 5 items each, generating behaviour difficulties: ‘Hyperactivity Scale’ (e.g., I am restless, I cannot stay still for long), ‘Emotional Symptoms Scale’ (e.g., I am often unhappy, down-hearted or tearful), ‘Conduct problems Scale’ (e.g., I fight a lot. I can make other people do what I want), ‘Peer Problems Scale’ (e.g., I am usually on my own. I generally play alone or keep to myself). Each item can be marked as 0, “not true”, 1, “somewhat true”, or 2, “certainly true”. Higher scores indicate more difficulties. In the Greek version of the questionnaire, population validity information comes from the self-report version given to students (Mavroveli et al., 2008). In the current study, the internal consistency of the subscales is presented in table 1. Again, information validity of the instrument as well is presented elsewhere (Poulou, in press).

Procedure

A letter explaining the aims of the research was sent to head teachers of the participating schools. Having students’, parents’ and teachers’ consent, the administration of the instruments took place, by the researcher, following a pilot test to 10 students to ensure the comprehension of their items. Students were given oral information about the research aims and written instructions about the completion of the instruments. Testing took place exclusively in class, with no time constraints imposed. The participants and their parents were assured about the confidentiality and anonymity of the information they provided.
Results

Students’ Perceptions of Teacher-Student Relationships, their Social and Emotional Skills and Emotional and Behavioural and Difficulties

Preliminary analyses were conducted to investigate differences in all the variables. Table 1 shows the descriptive statistics and correlation matrix of QTI, MESSY and SDQ measures. The measures of teacher-student relationships and students’ social and emotional skills inter-correlated significantly with one another, as did the students’ emotional and behavioural difficulties measures. Further, teacher-student relationships and students’ social and emotional skills individually correlated with students’ emotional and behavioural difficulties, in a direction that teacher’s uncertain, dissatisfied, admonishing and strict behaviour, and students’ inappropriate assertiveness were positively correlated with students’ emotional and behavioural difficulties. In contrast, teacher’s leadership, helping/friendly, understanding, student freedom behaviour, and students’ appropriate social skills were negatively correlated with students’ emotional and behavioural difficulties (all ps<.01).

Predicting Students’ Emotional and Behavioural Difficulties

SEM (ML) analysis was run in AMOS between scales of MESSY, SDQ, and QTI. Regression imputation was run for completing missing values in the data set. It must be noted that variables with low reliabilities (less than .60) did not join Amos’ models. Therefore, dimensions such as “giving students freedom”, “strict” and “understanding” were not included in the model, since their loadings were not statistical significant and small (below .05). For space purpose we will present the final model (Figure 3). The model had loadings above +/-0.04. The model produced: $X^2(21) =30.831$, $X^2p>.05$, MLmean=23.745 (MLse=.169), B-Sp=.168, RMSEA=.022 (C.I. at 90% for the RMSEA were .000 to .038), RMR=.006, CFI=.998, CMIN/DF=1.468. No modifications were suggested to that model. All the criterions showed that this model fitted the data adequately.
Figure 3. Model the effects on students’ emotional and behavioural difficulties (leadership behaviour, helping/friendly behaviour, admonishing behaviour, uncertain behaviour, dissatisfied behaviour, ma=inappropriate assertiveness, ms=appropriate social skills, emotional problems, conduct problems, hyperactivity, peer problems)
The results showed that students’ inappropriate assertiveness is influenced by teachers’ admonishing behaviour (.14), uncertain behaviour (.10) and dissatisfied behaviour (.13). In turn, inappropriate assertiveness influences emotional problems (.12), conduct problems (.32), hyperactivity (.24), and peer problems (.09). Students’ appropriate social skills are influenced by teachers’ leadership behaviour (.17), helping/friendly behaviour (.10) and uncertain behaviour (negatively, -.05). Students’ appropriate social skills further influence hyperactivity (negatively, -.11), and peer problems (negatively, -.18). It must be noted that teachers’ dissatisfied behaviour influences students’ emotional, conduct problems, hyperactivity, and peer problems (from .06 to .11). Finally, students’ emotional problems are influenced by teachers’ leadership behaviour (negatively, -.05). Table 2 more analytically presents the standardized effects of the model variables. It has to be noted that the effect size of conduct problems to inappropriate assertiveness was large, while most of the rest effect sizes were from small to medium. Also, the total effect of conduct problems to teacher’s dissatisfied behaviour was .296 (medium effect size).
Table 2
Standardized effects (Direct, Indirect, Total)

<table>
<thead>
<tr>
<th>Effects</th>
<th>admonishing</th>
<th>uncertain</th>
<th>Dissatisfied</th>
<th>Helping</th>
<th>leadership</th>
<th>Appropriate social skills</th>
<th>Inappropriate assertiveness</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dissatisfied behaviour</strong></td>
<td>Total</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Direct</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Indirect</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Appropriate social skills</strong></td>
<td>Total</td>
<td>0</td>
<td>-0.07</td>
<td>0</td>
<td>0.136</td>
<td>0.217</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Direct</td>
<td>0</td>
<td>-0.07</td>
<td>0</td>
<td>0.136</td>
<td>0.217</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Indirect</td>
<td>0</td>
<td>-0.07</td>
<td>0</td>
<td>0.136</td>
<td>0.217</td>
<td>0</td>
</tr>
<tr>
<td><strong>Inappropriate assertiveness</strong></td>
<td>Total</td>
<td>0.165</td>
<td>0.124</td>
<td>0.158</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Direct</td>
<td>0.165</td>
<td>0.124</td>
<td>0.158</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Indirect</td>
<td>0.165</td>
<td>0.124</td>
<td>0.158</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Peer problems</strong></td>
<td>Total</td>
<td>0.024</td>
<td>0.035</td>
<td>0.211</td>
<td>-0.033</td>
<td>-0.053</td>
<td>-0.243</td>
</tr>
<tr>
<td></td>
<td>Direct</td>
<td>0</td>
<td>0</td>
<td>0.188</td>
<td>0</td>
<td>0</td>
<td>-0.243</td>
</tr>
<tr>
<td></td>
<td>Indirect</td>
<td>0</td>
<td>0</td>
<td>0.188</td>
<td>0</td>
<td>0</td>
<td>-0.243</td>
</tr>
<tr>
<td><strong>Emotional problems</strong></td>
<td>Total</td>
<td>0.03</td>
<td>0.023</td>
<td>0.153</td>
<td>0</td>
<td>-0.085</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Direct</td>
<td>0</td>
<td>0</td>
<td>0.123</td>
<td>0</td>
<td>-0.085</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Indirect</td>
<td>0</td>
<td>0</td>
<td>0.123</td>
<td>0</td>
<td>-0.085</td>
<td>0</td>
</tr>
<tr>
<td><strong>hyperactivity</strong></td>
<td>Total</td>
<td>0.066</td>
<td>0.061</td>
<td>0.187</td>
<td>-0.022</td>
<td>-0.034</td>
<td>-0.159</td>
</tr>
<tr>
<td></td>
<td>Direct</td>
<td>0</td>
<td>0</td>
<td>0.124</td>
<td>0</td>
<td>0</td>
<td>-0.159</td>
</tr>
<tr>
<td></td>
<td>Indirect</td>
<td>0</td>
<td>0</td>
<td>0.124</td>
<td>0</td>
<td>0</td>
<td>-0.159</td>
</tr>
<tr>
<td><strong>Conduct problems</strong></td>
<td>Total</td>
<td>0.083</td>
<td>0.063</td>
<td>0.296</td>
<td>0</td>
<td>0</td>
<td>0.506</td>
</tr>
<tr>
<td></td>
<td>Direct</td>
<td>0</td>
<td>0</td>
<td>0.216</td>
<td>0</td>
<td>0</td>
<td>0.506</td>
</tr>
<tr>
<td></td>
<td>Indirect</td>
<td>0</td>
<td>0</td>
<td>0.216</td>
<td>0</td>
<td>0</td>
<td>0.506</td>
</tr>
</tbody>
</table>
**Discussion**

If we need to investigate and predict students’ cognitions, affect and behaviour, we have to attend to how they perceive and give meaning to classroom experiences. Based on the sociocognitive premises that highlight the role of students’ perceptions (Fraser & Walberg, 2005), we propose that in order to examine the influential factors of students’ emotional and behavioural difficulties, we mainly need to study students’ perceptions.

This study extends prior research by investigating the contribution of individual students’ skills and teacher-student relationships. It was found that teachers’ behavioural dimensions such as admonishing, uncertain and dissatisfied behaviour relate to students’ inappropriate assertiveness, teachers’ behavioural dimensions such as leadership and helping/friendly behavior relate to students’ possession of appropriate social skills, while teachers’ uncertain behaviour relates to students’ possession of appropriate social skills in a negative direction. These findings are in line with a number of studies on teacher-student relationships (den Brok et al., 2004; Goh & Fraser, 1998; Marshburn et al., 2008; Birch & Ladd, 1998; Howes & Hamilton, 1993; Loukas et al., 2009). Students demonstrate emotional and behavioural difficulties when teacher-student relationships are characterized by teachers’ dissatisfied behaviour, and when they lack appropriate social skills or in other words exhibit inappropriate assertiveness. Students’ possession of social skills appeared to have a prominent role in the manifestation of emotional and behavioural difficulties, while teacher-students’ relationships have also an indirect effect to students’ behaviour, through the association with students’ social and emotional skills. Present study, in agreement with much past research, replicated the advantages of positive teacher-student relationships in preventing discipline problems (Fraser & Walberg, 2005). The most robust finding in our study however, was that the possession of students’ social and emotional skills is considered crucial by students, for their psychological adjustment at schools, in support to SEL axioms. This latter finding suggests that teachers need to equip students with social competencies and skills that help them to deal effectively with life situations.

In theoretical terms, this holistic approach contributes to unpacking the potential predictors or underlying mechanisms of students’ behaviour. This
framework extends the theoretical rationale which systems communication perspective has on academic achievement, to the area of emotional and behavioural difficulties. At the same time, this theoretical process broadens its focus to include the research evidence provided by the SEL approach (Poulou, in press).

In practical terms, we move towards defining those within teacher, or child characteristics that are managed by teachers and can accordingly be modified to achieve desired goals. This is an optimistic view. These data can be used to inform teachers and professional staff to identify behaviours, and conditions that warrant intervention and provide additional training and support to classroom teachers, as needed. In accordance to Chory-Assad & Paulsel (2004) suggestions, we underscore the importance of teacher training in classroom management strategies, as certain communication tactics may prove destructive to the student-teacher relationships and the classroom atmosphere.

In suggesting such a theoretical framework however, we recognize limitations. First, we cannot assume causal relationships or mediating effects among the potential predictors of emotional and behavioural difficulties. Second, the results were uniquely based on students’ perceptions, who participated in the study on a voluntary basis. While valuable, students’ perceptions do not provide information about the actual behaviours or intentions of the teachers, or students’ attitudes with regard to their teacher. Future research could include qualitative information, such as interview or observation data with students of different ages or cultural backgrounds, and students’ behaviours other than those considered in the present study, to further elaborate these findings. Although there is support that aggregated judgments of teachers’ behaviour are more valid than individual judgments (den Brok et al., 2006), future work could investigate students’ personal opinions compared to the perceptions of the class, in an attempt to interpret students’ emotional and behavioural difficulties. Nevertheless, it is actually the case that self-perceptions have a strong influence on behaviour, irrespective of their accuracy (Bandura, 1997), and that students’ perceptions are an important aspect of their psychological adjustment. Future research could contribute to a better understanding of the interplay among various dimensions of classroom environment. This current paper consists of an
attempt to conceptualize an interpretation framework of students’ emotional and behavioural difficulties, by taking into consideration teacher and student parameters, as a few of the multiple classroom ecological influences.

References


---

**Maria Poulou** Assistant Professor. University of Patras

**Contact Address:** Kritis 33, Athens 12351, Greece
mariapoulou@yahoo.com
The Autistic Brain: Exploring the Strength of a Different Kind of Mind

Carmen Agustín-Pavón

1) University Jaume I, Spain

Date of publication: February 24th, 2015


To link this review: http://dx.doi.org/10.4471/ijep.2015.05

PLEASE SCROLL DOWN FOR ARTICLE

The terms and conditions of use are related to the Open Journal System and to Creative Commons Attribution License (CC-BY).
Review


Temple Grandin is one of the most well known persons with autism. Most people met her first when the neurologist Oliver Sacks portrayed her in his famous book “An anthropologist on Mars”. But Dr Grandin –BA in Psychology, PhD in Animal Science, professor at Colorado State University, and an accomplished engineer in the livestock industry- had written by that time a considerable number of scientific papers and books.

In her last book, “The autistic brain”, Dr Grandin offers an up to date review of the latest developments in autism research, providing a context to her own clinical case. She is interested in the biological roots of autism and in particular in its genetic underpinning. She shows data obtained from scans of her own brain, and compares those data with the neurotypical brain. She explains how the structure of the autistic brain is different from the average, meaning that there are certain things that an autistic person will never do like the neurotypicals. For example, to complete and organise the materials for her books she needs the help of others –in this case, a science writer-, because her deficits in short-term memory preclude her from concentrating in such a task.

Grandin recommends to educators and families of children with autism to try to understand the deficits of autistic children and avoid asking them to achieve goals that they could never achieve. However, Grandin complains that the study of autism is almost always focused in understanding the deficits. What can really make the difference for a person with autism is to turn his or her differences into strengths. It would be very fruitful exploring the advantages that autistic people have in certain tasks as compared with neurotypicals –i.e. higher attention to detail, visual thinking- and encourage the development of such abilities. In this respect, she fondly remembers her science teacher at high school, who never gave up in looking for her aptitudes, and encouraged her to pursue a career in Science. No wonder that, when she proposes a number of jobs suitable for autistic people, she lists every kind of job, from plumbing to architecture.
Grandin also complains about the danger of labels. We learn how the autism diagnosis has dangled through the different versions of the DSM\textsuperscript{1}, so that one individual labelled as Asperger in 1980 will be labelled in the autistic spectrum today. We discover how the cases of children labelled autistic increased after a typo in the \textit{DMS-IV}, which read “a severe and pervasive impairment of reciprocal social interaction or verbal and nonverbal skills” instead of “and”, such that a person had to meet just one criterion instead of two to be diagnosed as autistic.

In her own case, she was born at the time when Leo Kanner’s works about autism were just starting to be known in the medical community\textsuperscript{2}. She guesses that her life would have been a lot different had she been labelled autistic as a young child. Thus, she encourages us to look at people with autism as individuals, rather than as a pool of people under the shade of a diagnosis.

However, most of the pieces of advice that Temple Grandin offers in her book do not apply to the most severe cases autism: those people who is not able to communicate, let alone to have an independent life like hers. Yet she is confident that we might find in the future a way in which communication with them will be easier. For example, new tablet computers offer great help to teach children with autism.

In summary, reading “The autistic brain” by Temple Grandin provides a unique opportunity for those interested in education and disability: not only she is a scientist, but also she is a person with autism writing about autism. Her perspective is thus invaluable to learn about those important matters from the inside.

Notes
\textsuperscript{1} Diagnostic and Statistical Manual of Mental Disorders
\textsuperscript{2} Leo Kanner and Hans Asperger defined independently the autistic syndrome in 1943. Kanner proposed that a main cause of autism was due to attachment problems, of which often a “refrigerator mother” was to blame. This false hypothesis probably caused a lot of pain in an unknown number of mothers.
References


Dr Carmen Agustín-Pavón
Predepartamental Unit of Medicine
University Jaume I
deagusti@uji.es
Instructions for authors, subscriptions and further details:

http://ijep.hipatiapress.com

List of 2014 Reviewers

Date of publication: February 24th, 2015

To cite this article: IJEP Editors. (2015). List of Reviewers. International Journal of Educational Psychology, 3(1), 112. doi: 10.4471/ijep.2014.06

To link this article: http://dx.doi.org/10.4471/ijep.2014.06

PLEASE SCROLL DOWN FOR ARTICLE

The terms and conditions of use are related to the Open Journal System and to Creative Commons Attribution License (CC-BY).
List of 2014 Reviewers

We thank the individuals who were reviewers for the *International Journal of Educational Psychology* over the year 2014. We deeply appreciate their contributions to the quality of this journal.

Rocío García Carrión
Sandra Racionero-Plaza
Editors

Antonio Aguilera
José Barba
Ana Burgués
Marcos Castro
Silvia Molina
Javier Díez Palomar
Günter Faber
Mariana Fuentes
Dennis Fung
Juan García
Diego Gómez Baya
Linda Hogg
Gurkirat Kaur
Ayesha Khurshid
Sanjeev Kumar
Darko Loncaric
Isabel López Cobo
Marko Luftnegger

Guzhong Ma
Emma Motrico
Maria Padrós
Mar Prados Gallardo
Cristina Pulido
Henar Rodríguez
Roseli Rodrigues de Mello
Mencía Ruiz
Marta Soler
Muppudathi Subramanian
Itxaso Tellado
Mireia Tintoré
Sally Zengaro