Demographics continue to change in the United States, with the Hispanic\textsuperscript{1} population growing at a rapid rate. It is anticipated that, by 2030, Hispanics will make up 45\% of the nation's population growth (Passel, Cohn & Lopez, 2011). Within less than 4 decades, by 2050, Hispanics are expected to make up 29\% of the US population (Passel & Cohn, 2008). As the growth of the Hispanic population has risen, the population of English language learners (ELLs) in schools has increased, with early childhood programs being impacted the most. In 2010, 75\% of Hispanics five years or older spoke Spanish as a native language at home (US Census Bureau, 2010). In fact, ELLs are the fastest-growing demographic group in US public schools today (Uro & Barrio, 2013).

In states in which bilingual education is implemented, the majority of ELLs, upon entrance in school, are enrolled in some type of bilingual education program with the majority of students being served in a transitional bilingual education (TBE) program (Garcia, 2009). TBE programs are designed to educate ELLs by using their native language to transition to English for a limited amount of time. According to Esquierdo and Arreguin-Anderson (2012), many public school personnel are primarily concerned with teaching ELLs English, but, not with extending their creative and intellectual growth; therefore, according to Bernal (2002), ELLs may have their specific intellectual needs disregarded at the expense of second

\textsuperscript{1} The term, Hispanic, is used for the purposes of this study, as it is a broader terminology that includes Latino populations.
language (English) development. If that is the case, then early identification and services appropriate to meet such intellectual needs is critical to children's whole development, not just their language. Early identification of children for intellectually challenging environments is even more critical, due to the “fast-paced intellectual development” from ages 2 to 5 (Clark, 2008, p. 102). Regular classroom instruction alone, especially without trained teachers, does not meet the needs of potentially gifted young children, since the regular classroom environment is not sufficiently complex enough to develop a complex brain (Jones, 2013; Irby, Lara-Alecio & Tong, 2013; Restak, 1986).

**Identification is key to meeting the needs of young gifted children**

Researchers and practitioners, alike, believe that identification is the key to meeting the needs of young gifted children, because, without appropriate placement in a program, there is no systematic structure to ensure services are provided. For decades, identification tools for the parsing of potentially gifted students were reserved for middle-class native English speakers (Cohen, 1988). Subsequently, the issue of underrepresentation of ELLs in gifted and talented (GT) programs has developed into a critical educational concern—especially for young children (Esquierdo & Arreguin-Anderson, 2012).

Teacher bias is an area that, therefore, has to be addressed in order to achieve goals toward equitable placement of young ELLs in gifted programs. Teachers’ view of students within a cultural group can sometimes interfere with their objectivity, when identifying ELL students for gifted programs. For example, Lara-Alecio, Irby, and Walker (2008) reported that most teachers who observe bilingual students with strong family ties or who exhibit a cooperative nature do not identify such students as gifted learners. More than 20 years ago, Marín and Marín (1991) stressed the importance of developing culturally appropriate tools that could assess Hispanic students, in particular, more accurately. Indeed, in 1996, it was found that Hispanics were four times less likely to be enrolled in a gifted program (Associated Press, 1996). Even 15 years ago, Castellano (1998) avowed that children with different linguistic and cultural backgrounds were historically not included in gifted programs. Such non-inclusion has continued, as noted by Ford (2010), who indicated that as many as 38% of Hispanic students are lacking services in gifted education programs. This can have significant implications for future academic performance, as explained by Moon and Brighton (2008), who noted that children from minority families who are not identified early for gifted education programs are less likely to be identified later. Harris, Rapp, Martinez, and Plucker (2007) recommended the establishment of an initial screening system in identifying gifted students that is multi-faceted in procedures, including identification of learning characteristics, assessment of nonverbal cognitive ability, and teacher ratings. This is especially important when observing and working with very young ELL children. There is less information on the identification of young potentially gifted children than there is on older children; however, there is general agreement in the field that identifying and serving such children earlier is critical (for example, Pfeiffer & Petscher, 2008; Sankar-DeLeeuw, 2004). In fact, to not provide children, regardless of the age, with such services is discriminatory. In addition, the lack
of appropriate identification of Hispanic ELLs and subsequent services, sends a negative message that, among Hispanics, there are no gifted individuals (Irby & Lara-Alecio, 2001). The lack of such educational provisions robs Hispanic ELLs of their right to participate in an appropriate education in public schools. Potential talent areas, frequently overlooked, may gradually deteriorate (Bernal, 2002). Therefore, educational institutions must address all the academic, intellectual, and creative needs of ELLs to ensure that their talents and intellect are identified and developed. Such a disservice at a young age may, indeed, diminish such individuals' apposite education for their academic lifetime.

For nearly 40 years, teacher recommendations have been widely prevalent in referring students to gifted education programs. Typically, the initial step in identification is at the teacher level (Elhoweris et al., 2005). This is substantiated by the wide use of teacher rating scales as far back as 1971, with the beginnings of the Renzulli-Hartman Scale for Rating Superior Behaviour (Renzulli, Hartman & Callahan, 1971). However, according to Achenbach (1997), there are potential problems concerning teacher recommendations of gifted students, specifically due to misunderstandings related to the characteristics of such students. In general, when compounded with the lack of expertise in understanding characteristics and needs of ELLs, teachers may find identifying gifted ELLs extremely challenging, especially if they are using an identification instrument that is strongly language and culturally biased. Additionally, Kaufman and Harrison (1986), in their earlier studies, noted that teachers may exhibit bias toward culturally diverse students, and Ricovero (2000) stated that teachers may yield unreliable recommendations if they have inadequate training on such characteristics and how to identify them.

**Potential gender bias in identification**

Not only have concerns been raised about teachers being the initial point of referral for students to be identified for gifted education programs, but also, at a deeper level, there may be a bias toward girls at a young age when identifying for giftedness early (Otterman, 2010). For example, Otterman noted that disparities between boys and girls being identified for and served in gifted education are evident in early childhood programs. She indicated that more girls enter such gifted education programs, with the hypothesis being that girls perform better than do boys on standardized tests, due to their loquaciousness and social maturation at ages 4 and 5. On the other hand, Siegle and Powell (2004) did not find any gender bias in teacher identification of potentially gifted students.

Despite some weakness of teacher ratings, teachers are still regarded as being very important in the process of identifying gifted students. Both the identification assessments and the teacher training to effectively use these assessments to identify children of all cultures and genders are needed. As long as popular, mainstream lists of characteristics are perpetuated to identify students, teachers risk failing to identify those who do not fit the characteristics on a checklist. For this reason, researchers must “reexamine the predictive validity of current characteristic checklists as they relate to different types of gifted programs” (Siegle, & Powell, 2004, p. 21). Teachers must be trained to be aware of the characteristics of Hispanic, linguistically diverse students, or ELLs, so they can better identify and place such students where those students can maximize their
potential (Lara-Alecio, et al., 2008), and there must be an instrument that can be nondiscriminating toward gender.

In the literature reviewed, we found a paucity of research on ELL gifted, and even more so related to young, ELL, gifted, and gender issues in identification. Therefore, the purpose of our research was to use a specific tool for early identification of Hispanic ELLs for gifted education programs to identify teacher differences in judgments by student gender. More specifically, we sought to address the following questions:

1. Do bilingual teachers’ judgments of students’ potential giftedness differ by gender among Hispanic economically disadvantaged kindergarten ELLs using the Hispanic Bilingual Gifted Screening Instrument?

2. Do bilingual teachers’ judgments of students’ potential giftedness differ by gender among Hispanic economically disadvantaged kindergarten ELLs who are rated among the top 25%, using the Hispanic Bilingual Gifted Screening Instrument?

Context

This study is part of a randomized control trial, federally-funded study, titled, Project English and Language Literacy Acquisition (US Department of Education R305P030032), which took place in an urban school district in Texas. The project followed over 800 native Spanish-speaking children who were identified as ELLs from kindergarten to third grade and tracked their English language and literacy development, as well as teachers’ perceived potential giftedness among these students. According to 2009 Texas Education Agency (TEA) data, 32% of the students in the district were ELLs, and 85% of the student population was from an economically disadvantage status qualifying for free or reduced lunch.

Teacher and student participants

We used archived data from the longitudinal research project, in which schools were randomly selected and assigned to treatment and control conditions if there were structured English immersion and/or transitional bilingual education (TBE) models on the campus. In this study, only data collected from students who were enrolled in the TBE model were included for analysis, as these students were taught by teachers who were deemed highly qualified by the TEA in the area of bilingual education. It was considered that such teachers would have a base of more knowledge related to the culture of Hispanic ELL students. The students served in TBE received instruction in both English and Spanish throughout the day. In kindergarten, there were 454 bilingual students who were rated by their bilingual teachers (n = 24) on the Hispanic Bilingual Gifted Screening Instrument (HBGSI, see section on Instrumentation below for a detailed account of this measure). Among these students, 242 (53%) were male with an average age of 5.8 years (SD = 7.7 months), and 212 were female (47%) with an average age of 5.8 years (SD = 8.43 months). All students

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These percentages are consistent with the latest 2010-2011 Texas Education Agency data reports.
participating in the study were Hispanic, their primary language was Spanish, and they were also economically disadvantaged.

**Instrumentation**

The Hispanic Bilingual Gifted Screening Instrument (HBGSI) is an individual-teacher-administered instrument with 11 HBGSI clusters and 77 items on characteristics of potential Hispanic GT students (Irby & Lara-Alecio, 1996). It is designed to be used in the first phase of identifying Hispanic bilingual gifted students’ grades K-4 (Irby, Lara-Alecio & Rodriguez, 2003a). These clusters include: (a) Social and Academic Language, (b) Cultural Sensitivity, (c) Familial, (d) Motivation for Learning, (e) Collaboration, (f) Imagery, (g) Achievement, (h) Support, (i) Creative Performance, (j) Problem-Solving, and (k) Locus of Control (Irby, Lara-Alecio & Rodriguez, 2003b). Each of the items is a statement on a five-point scale, with ‘1’ being ‘never exhibit such behaviour/characteristics’ and ‘5’ being ‘always exhibit such behaviour/characteristics’. Therefore, the maximum possible raw score a student can obtain is 385, if all answers are scored with a 5. The lowest would be 77, if all scored with a 1. All the characteristics in HBGSI are derived from a comprehensive study and review of literature that initially narrowed over 400 characteristics conducted within the group of Hispanic GT children (Irby & Lara, 1996).

Since its development in 1996, researchers have further validated and applied this instrument in various studies (Irby, Lara-Alecio & Rodriguez, 1999). For example, Irby, Hernandez, Torres, and Gonzalez (1997) concluded that the HBGSI was an effective screening instrument that differentiated between those students who were referred and who were not referred to gifted education programs. HBGSI were shown with evidence of a medium concurrent validity when compared with the Bilingual Verbal Ability Test (Fultz, 2004) and with Naglieri Nonverbal Ability Test (Esquierdo, 2006). In addition, evidence of moderate to high concurrent validity between the HBGSI and the WLPB-R Verbal Analogies subtests in English and Spanish (standardized language measure on verbal reasoning at lexical level) were reported (Contreras-Vanegas, 2011), as well as moderate inter-rater reliabilities (Contreras-Vanegas, Lara-Alecio, Tong, Irby & Pollard-Durodola, 2012).

**Administration procedure.** The HBGSI instrument is accessible on-line for teachers, administrators, and educators that would like to become familiar with this instrument at www.teachbilingual.com. In the larger research project, teachers were provided face-to-face training on how to administer the instrument, and a video was also available on how to enter student information and answer each question. All data were safely stored in the HBGSI software and were exported into a dataset in various formats. Initial inter-rater agreement was established before ratings were performed.

**Data collection and analysis**

In this study, permission was sought and approved to use archived data collected in the Spring of 2004 in the larger research project. To answer research question 1, independent sample t-tests were performed between the ratings among female and male students on each of the 11 clusters, and on the
total score. Given the multiple comparisons, the significance level was established at $\alpha = .05$, and Benjamini-Hochberg correction (Benjamini & Hochberg, 1995) was applied to calculate the corrected significance level, so as to control for Type I error. To answer research question 2, independent sample t-tests were performed between the ratings among the top 25% female and male students on each of the 11 clusters, and on the total score with Benjamini-Hochberg correction (Benjamini & Hochberg, 1995).

**Results**

In this section, results are presented in the order of the research questions.

**Question 1: Do bilingual teachers’ judgments of students’ potential giftedness differ by gender among Hispanic low-SES kindergarten ELLs using the Hispanic Bilingual Gifted Screening Instrument?**

Descriptive and inferential statistics on bilingual teachers’ ratings among young female and male Hispanic bilingual students by HGBSI clusters and total score is presented in Table 1. No statistically significant difference was identified from the independent sample t-tests between young male and female bilingual students based on their teachers’ observations ($p < .05$) on all of the clusters or the total score. The significance level after correction due to multiple comparisons was lowered from .05 to .004, therefore, the gender difference on the Cluster of Familial was no longer statistically significant. The means and standard deviations are very similar between male and females.

### Table 1.

*Bilingual Teachers’ Ratings Among Female and Male Hispanic Bilingual Teachers by Clusters and Total Score*

<table>
<thead>
<tr>
<th>Cluster Name</th>
<th>Male (n = 242)</th>
<th>Female (n = 212)</th>
<th>p-value</th>
<th>Corrected significance level</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>Std</td>
<td>Mean</td>
<td>Std</td>
</tr>
<tr>
<td>Social &amp; Academic Language</td>
<td>14.63</td>
<td>4.62</td>
<td>15.16</td>
<td>4.36</td>
</tr>
<tr>
<td>Cultural Sensitivity</td>
<td>10.30</td>
<td>4.25</td>
<td>10.79</td>
<td>4.09</td>
</tr>
<tr>
<td>Familial</td>
<td>25.20</td>
<td>7.60</td>
<td>26.54</td>
<td>7.01</td>
</tr>
<tr>
<td>Motivation for Learning</td>
<td>14.99</td>
<td>4.50</td>
<td>15.82</td>
<td>6.16</td>
</tr>
<tr>
<td>Collaboration</td>
<td>43.21</td>
<td>13.77</td>
<td>44.21</td>
<td>13.00</td>
</tr>
<tr>
<td>Imagery</td>
<td>8.97</td>
<td>4.08</td>
<td>8.82</td>
<td>3.83</td>
</tr>
<tr>
<td>Achievement</td>
<td>46.76</td>
<td>16.51</td>
<td>45.74</td>
<td>15.97</td>
</tr>
<tr>
<td>Support</td>
<td>16.94</td>
<td>4.69</td>
<td>17.19</td>
<td>4.75</td>
</tr>
<tr>
<td>Creative performance</td>
<td>13.42</td>
<td>5.28</td>
<td>13.89</td>
<td>5.86</td>
</tr>
<tr>
<td>Problem Solving</td>
<td>30.47</td>
<td>9.79</td>
<td>29.72</td>
<td>9.68</td>
</tr>
<tr>
<td>Locus of control</td>
<td>28.00</td>
<td>10.56</td>
<td>27.95</td>
<td>7.63</td>
</tr>
<tr>
<td>Total score</td>
<td>252.89</td>
<td>74.62</td>
<td>255.83</td>
<td>71.97</td>
</tr>
</tbody>
</table>

Note. Corrected significance level is based on Benjamini-Hochberg correction.
Question 2. Do bilingual teachers’ judgments of students’ potential giftedness differ by gender among Hispanic low-SES kindergarten ELLs who are rated among the top 25% using the Hispanic Bilingual Gifted Screening Instrument?

In addition to a comparison between teachers’ ratings on female and male students, we conducted further comparison analysis among the top 25% (n = 113) rated students, because they are more likely to be referred to gifted education programs by being placed into a talent pool for further assessment for identification. Descriptive and inferential statistics by clusters and total score are presented in Table 2. Among these 25% students, 60 (53%) were male and 53 (47%) were female, with the same gender distribution as is in the entire sample of this study. After the Benjamini-Hochberg correction was applied, the significance levels were lowered from .05 to .008 in the Cluster of Imagery, to .004 in the Cluster of Achievement, and to .013 in the Cluster of Locus of Control, therefore, the p-values were all larger than the respective corrected significance level, suggesting no statistically significant difference between male and female bilingual students based on their teachers’ rating on any of the clusters or total score. Again, the means and standard deviations are very similar between the gender groups.

Table 2.

<table>
<thead>
<tr>
<th>Cluster Name</th>
<th>Male (n = 60)</th>
<th>Female (n = 53)</th>
<th>p-value</th>
<th>Corrected significance level</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean   Std</td>
<td>Mean   Std</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social &amp; Academic Language</td>
<td>19.27  1.42</td>
<td>19.38  1.36</td>
<td>0.67</td>
<td></td>
</tr>
<tr>
<td>Cultural Sensitivity</td>
<td>14.18  1.74</td>
<td>14.45  1.29</td>
<td>0.36</td>
<td></td>
</tr>
<tr>
<td>Familial</td>
<td>32.80  3.43</td>
<td>33.13  2.94</td>
<td>0.58</td>
<td></td>
</tr>
<tr>
<td>Motivation for Learning</td>
<td>19.67  0.95</td>
<td>19.66  0.88</td>
<td>0.97</td>
<td></td>
</tr>
<tr>
<td>Collaboration</td>
<td>59.63  4.87</td>
<td>58.89  6.21</td>
<td>0.48</td>
<td></td>
</tr>
<tr>
<td>Imagery</td>
<td>13.57  1.88</td>
<td>12.87  2.15</td>
<td>0.07</td>
<td>0.008</td>
</tr>
<tr>
<td>Achievement</td>
<td>68.27  5.69</td>
<td>65.49  6.91</td>
<td>0.02</td>
<td>0.004</td>
</tr>
<tr>
<td>Support</td>
<td>22.18  2.54</td>
<td>22.06  3.39</td>
<td>0.82</td>
<td></td>
</tr>
<tr>
<td>Creative performance</td>
<td>19.32  4.39</td>
<td>20.32  4.21</td>
<td>0.22</td>
<td></td>
</tr>
<tr>
<td>Problem Solving</td>
<td>42.45  5.76</td>
<td>41.60  6.12</td>
<td>0.45</td>
<td></td>
</tr>
<tr>
<td>Locus of control</td>
<td>37.42  4.16</td>
<td>36.17  3.58</td>
<td>0.09</td>
<td>0.013</td>
</tr>
<tr>
<td>Total score</td>
<td>348.75 22.82</td>
<td>344.02 25.31</td>
<td>0.30</td>
<td></td>
</tr>
</tbody>
</table>

Note. Corrected significance level based on Benjamini-Hochberg correction.

Discussion

The purpose of our research was to use a specific tool for early identification of Hispanic ELLs for gifted education programs, to identify teacher differences in judgments of young students by their gender. Results identified no statistically significant difference on teachers’ rating between young male and female ELL students based on the HBGSII; further, no gender difference was evident among the top 25% of young ELL students who are more likely to be placed in a gifted
education program. Based on the few studies found related to gender and young gifted ELLs, instead of a bias toward girls, as was reported in the literature (Otterman, 2010), male and female students in our study were equally represented in the top rated group according to their teachers’ rating on HBGSI, and, therefore, such students experienced an equal opportunity to be referred for further testing into gifted education programs at an early age. Such a finding is consistent with Siegle and Powell’s (2004) study in which they did not observe any gender bias in teacher identification of potentially gifted students.

The underrepresentation of young Hispanic ELLs in gifted education programs (Esquierdo & Arreguin-Anderson, 2012) and the complex identification process that favors the English speaking population calls for culturally appropriate screening instruments that are multi-faceted and not solely based on the English language (Harris, Rapp, Martinez & Plucker, 2007; Marin & Marin, 1991) and mainstream culture, because one does not need to be fluent in English or be a part of mainstream culture to be intelligent (Castellano & Diaz, 2002) or creative. Further, given the fact that teacher referral/recommendation is widely practiced as the first step for further gifted education testing (Elhoweris et al., 2005), it is critical for teachers to be trained on the educational needs of ELLs, and to be sensitive to the characteristics of gifted students that are related to their culture. Teachers were trained on the characteristics assessed in the HGBSI in our study. Our findings demonstrate that HGBSI is a valid and reliable teacher rating scale that does not discriminate students’ gender among Hispanic economically disadvantaged ELLs, suggesting that the HGBSI is an appropriate instrument for the first step in identifying potentially, gifted Hispanic bilingual male and female students at an early age.

The HBGS I has proven to be a strong screening tool that can be used in the initial identification of Hispanic economically disadvantaged ELLs (Fultz, Lara-Alecio, Irby & Tong, 2013). It attempts to equalize both Hispanic male and female students’ opportunities to enter gifted education programs. We stress that more culturally appropriate instruments, such as the HBGSI, are much needed to assist in identifying potentially gifted young ELL students, so as to accommodate the needs of this fast-growing population in the United States, to reverse the under-representation of such students in gifted education programs, and to provide them with the curriculum that allows them to develop to their maximum potential.

References


