
Rethinking Policies and Procedures for Placing English Language Learners in Mathematics

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Abstract

The purpose of this qualitative study is twofold: 1) to investigate the successes and challenges educators and parents encountered when placing English Language Learners (ELLs) in middle school mathematics and 2) to analyze policies and procedures implemented by a school. The participants of this study included two Greek Cypriot students, their parents, an administrator, and the students' mathematics teachers. One school in the Southwest was the site for this study. Findings indicate the following regarding the placement of ELLs in mathematics: 1) contradictions between school district policies and procedures followed by the school, 2) the use of a translator whenever testing is involved, and 3) a difference of one to two years in initial and final placements.

Rethinking Policies and Procedures for Placing English-Language Learners in Mathematics

Recently the National Council of Teachers of Mathematics (NCTM) (2000) positioned equity as the first of its six principles in its *Principles and Standards for School Mathematics* document. This principle calls for "...high expectations and strong support for all students" (p. 12). Even though issues English Language Learners (ELLs) encounter in the mathematics classroom are briefly discussed, there is little guidance in the document on what teachers, administrators, policymakers, and parents can do to better serve this student population.

Given the increase in the number of ELLs by 105% over the last ten years (National Clearinghouse for Bilingual Education [NCBE], 2000) and the current emphasis on high-stakes testing (Heubert & Hauser, 1999; see also No Child Left Behind Act), questions remain on what policies and procedures are used to place ELLs when they enter U.S. schools. Even though researchers have studied programs that are available to ELLs at the secondary level (Macias & Kelly, 1996; Minicucci & Olsen, 1992; Valdés, 2001), few studies have documented the struggles parents, students, and educators face when they challenge the school system for the appropriate placement of ELLs in mathematics. To better understand the successes and challenges parents and educators encountered when placing ELLs in advanced mathematics courses, this study addresses the following questions: 1) What role do parents (and relatives), educators, and administrators play in placing ELLs in mathematics? 2) How do policies and procedures help (or hinder) ELLs?

In this article, I argue that excellent performance by ELLs in mathematics is possible when teachers, administrators, and parents render the necessary support and are strong advocates for their students. First, using Cummins' (2001) intervention framework on empowering minority students and the NCTM position statements on the mathematics

education of ELLs, I present the literature review on relevant issues to the placement of ELLs in mathematics. Second, the methodology used to conduct this study is discussed. Third, findings on the school district's policies and procedures and the role of parents, administrator, and educators in placing ELLs are discussed. I end with conclusions, implications, and limitations of this study.

Theoretical Framework

Three bodies of literature inform the ideas presented in this study. One body involves Cummins' (2001) intervention framework on empowering minority students. This framework was chosen because it includes issues of power that exist between dominant and dominated groups in society which also reflect similar concerns in schooling contexts. The second body involves assessing and placing ELLs, including implications of Basic Interpersonal Communication Skills (BICS) and Cognitive Academic Language Proficiency (CALP) (Cummins, 1986, 1992) for testing issues. The third body are position statements from the NCTM (1998) on the mathematics education of minority students and ELLs.

Empowering Minority Students

At the center of Cummins' (2001) intervention framework for empowering minority students "...is that students from 'dominated' societal groups are 'empowered' or 'disabled' as a direct result of their interactions with educators in the schools" (p. 659). According to Cummins (2001), educators assume roles that benefit or hinder minority students. These roles are considered in relation to four characteristics of schools that affect minority student school success: cultural/linguistic incorporation, community participation, pedagogy, and assessment. Celedón-Pattichis (2002) addressed cultural/linguistic incorporation and pedagogy in a study that documented the role of an algebra teacher in helping two Greek Cypriot students in her course as well as the students' strategies for succeeding in algebra. Although the algebra teacher did not speak the students' first language, Greek, she made accommodations, such as extending the time for major exams and allowing the students to use their notes written in Greek during exams, to facilitate learning for ELLs.

The components of the intervention framework that are relevant to this study include community participation, specifically the involvement of parents and relatives, incorporation of language, and the assessment/placement of ELLs, particularly in mathematics. According to Cummins (2001), teachers can empower or disable students depending on the approach followed in implementing the four characteristics of schools.

When teachers function at the collaborative end of the continuum in community participation, they encourage minority parents to promote their children's academic progress in the classroom and at home. On the contrary, when community involvement is exclusionary, educators are likely to view "...collaboration with minority parents as either irrelevant or detrimental to their children's progress" and see "...teaching as *their* job" (Cummins, 2001, p. 666). Similarly, teachers who promote the students' culture and language in the classroom in a positive way follow an "additive" approach, which includes allowing the students to learn ESL and encouraging ELLs to maintain their first language. For example, in Celedón-Pattichis' (2002) study, the algebra teacher who did not speak Greek allowed the two Greek Cypriot students to use a Quicktionary (an electronic dictionary in English and Greek) to find the meaning of words. The two students knew many mathematics concepts, but they needed help in translating words from one language to another. At the opposite extreme of the continuum are

teachers who use students' language and culture in "subtractive" ways. Teachers' aim is to replace the first language with the second language. With regard to assessment, teachers can take on a role that is legitimization oriented or one of advocacy. When standardized tests are used as the only basis to legitimize students' knowledge and their potential in school, teachers tend to fall at the legitimization end of the continuum. This role tends to locate the problem within the minority student. An approach that would reverse this process would include teachers who serve as advocates for their students by critically analyzing societal power relations between dominant and dominated groups, how these power relations transfer to communities and schools, and in the disabling of students that may take place in classrooms (Cummins, 2001).

As noted above, the elements that are critical in empowering minority students include incorporating the students' language and culture, teaching that involves a two-way dialogue, making the community a part of the school, and advocating for students whenever testing issues play a significant role in their placement. Next, points to consider when assessing and placing ELLs are discussed.

Assessing and Placing English Language Learners

According to Macias and Kelly (1996), most states use home language surveys and language proficiency tests to identify students as ELLs. The tests that are commonly used include the Language Assessment Scales, the Idea Oral Language Proficiency Test, and the Language Assessment Battery. In addition, factors such as previous grades, referrals, teacher observations, informal assessments, criterion-referenced tests, and scores on achievement tests (i.e., California Achievement Test [CAT], Comprehensive Tests of Basic Skills [CTBS], and Iowa Tests of Basic Skills [ITBS]) are considered.

Valdés (2001) states that, although in theory counselors are supposed to identify students who are ELLs by using home surveys and language proficiency tests, in practice these students are not immediately placed appropriately because of the short time period between the time the students register and the time school begins. Some students may not have adequate placements until several weeks into the semester.

When making decisions to place ELLs in content areas, such as mathematics, educators should ask whether they are measuring content knowledge or language proficiency. August and Pease-Alvarez (1996) conducted a study on attributes of effective instruction for ELLs. In their study, they list five characteristics that should inform educators on assessment for language minority students. One includes that these students be assessed for content knowledge and language proficiency. Secondly, schools should make efforts to assess students' content knowledge and abilities in English as well as their native language. Assessments in the native language become particularly important when students have learned content concepts in their native language that may have been covered in lower grades than that offered in the U.S. (See TIMSS discussion below). Without assessments in the students' native language, educators can easily underestimate what students can do in the content areas. Thirdly, a variety of measures should be used to assess ELLs (i.e., portfolios, observations, interviews, checklists, anecdotal records, etc.). A fourth characteristic of sound assessment concerns teacher awareness of the purpose of the assessment: Is the test that is administered intended to measure language proficiency or content knowledge? Finally, knowing the students' backgrounds, including educational experiences and parents' literacy, should provide a comprehensive analysis of assessment.

In understanding students' educational background, educators must consider aspects of second language learning. Theories often discussed in learning a second language include those of Cummins (1986, 1992). BICS, or social language, refers to the language that is needed to communicate daily needs or language that is used for social purposes. ELLs usually develop these skills within the first two years, provided that there is access to second language speakers and a social setting that promotes natural interaction. Social language involves the use of contextual clues such as nonverbal messages in face-to-face interaction. According to Collier and Thomas (1989), social language involves more than speaking and listening. It also develops literacy skills that are useful for shopping, using local transportation, and conducting other transactions. On the other hand, CALP, or academic language, refers to the language required to perform cognitively demanding tasks across content areas at the secondary or university levels of instruction. It is this last point that has generated criticisms on the use of BICS and CALP (Edelsky, 1991). Given the definitions of both terms, there is an implication that children who use BICS do not use higher-order thinking skills.

Although there have been criticisms concerning the use of BICS and CALP (Edelsky, 1991), CALP is used to refer to the academic language that ELLs need to perform well on standardized tests, which are typically given to students for placement purposes immediately when they enter U.S. schools. Research shows that CALP can take from five to seven years to develop provided ELLs have strong literacy skills in their first language (Cummins, 1992; Thomas & Collier, 1996). This finding has important implications for placing ELLs in mathematics. When a test written in English is administered to place ELLs in mathematics, there should be a translator available so that the test scores reflect what the student truly knows about the content area (Short, 1998).

As aforementioned, ELLs are usually identified as such via the use of a home language survey and achievement test scores used by the school. However, educators should seek information that goes beyond a survey and a test score to ensure adequate placements. If content knowledge is to be assessed, then a translator should be provided during test administration, especially when there are word problems or directions written in English. In the next section, position statements written by the NCTM regarding the mathematics education of ELLs are presented.

Position Statements on the Mathematics Education of Minority Students

The NCTM has had a strong impact on mathematics education with its reform movements in curriculum, instruction, and assessment (1989, 1991, 1995, 2000). Until recently, however, NCTM (1998) published two position statements on the mathematics education of underrepresented groups and ELLs. In these position statements, NCTM calls attention to the following:

- All students, regardless of their language or cultural background, must study a core curriculum in mathematics based on the NCTM standards.
- Educators must identify and remove language-based barriers.
- Language minority students must be given appropriate assistance in learning mathematics.
- Counselors and teachers must support and encourage students in continuing their mathematics education.
- The importance of mathematics and the nature of the mathematics program must be communicated to both students and parents.
- The mathematics curriculum must include connections to the cultural heritage of students.

- Teaching and assessment strategies must build upon the cultural heritage and learning styles of students.

In addition, the Third International Mathematics and Science Study (TIMSS) has shaped the curriculum taught in the U.S. TIMSS findings show that the U.S. 8th-grade mathematics curricula are at a 7th-grade level in comparison to other countries (U.S. Department of Education, 1997). Although the difference in curriculum level may not seem significant, it plays an important role when placing students who come to U.S. schools from other countries.

NCTM's call for counselors and educators to support ELLs in obtaining a quality mathematics education that builds on their cultural experiences and language must be carefully considered. TIMSS' findings on how students from other countries perform in mathematics compared to the U.S. indicate that foreign students may be exposed to more difficult mathematics curriculum in earlier grades. This study is a response to this call to create awareness of some of the issues that ELLs may encounter in their mathematics education as they enter schools in the U.S. The following section focuses on the methodology used to study ELLs and their placement in middle school mathematics courses.

Methodology

Research Design

The two-year qualitative research study that this article is based on focuses on the placement of two ELLs in mathematics and an analysis of the policies and procedures used by a school district in this process. The case study design was selected because it "...becomes particularly useful where one needs to understand some special people, particular problem, or unique situation in great depth, and where one can identify cases rich in information..." (Patton, 1990, p. 54; Merriam, 1998). According to Patton (1990), the case study seeks to describe a particular situation in great detail, in context, and holistically.

Site

The school, Madison Middle School¹, is located in an urban city in the Southwest. During the 2001-2002 school year, there were 878 students enrolled. The student population consisted of 51.3% White, 5.3% Black, 33.4% Hispanic, 5.9% Native American, 2.1% Asian, and 2% other. Approximately 26% of the students were on free or reduced lunch. Of the residents who lived in the nearby school community, only 2% were considered residents who did not speak English well. (Data obtained from the school district's website.)

At Madison Middle School, the teachers teamed for the core subject areas to make the school programs user friendly to students. Students were placed in school "families" of 60 students, and teachers had an individual and a family prep period in which to address the needs of the students. Overall, the school was rated as "exceeds standards" in the state. The school offered ESL Sheltered Content as an alternative language program.

Parents at Madison Middle School participated in raising additional funds for school projects through the Parent Teacher Association (PTA). There were members who worked in the school office, classrooms, counseling office, or snackbar. The school had strong partners including businesses to reward student academics and behavior.

¹ The names of the site and the participants are pseudonyms.

Participants

The participants were selected for this study to satisfy a purposive sample (Lincoln & Guba, 1985). According to Erlandson, Harris, Skipper, and Allen (1993), a purposive sampling involves selecting "...sources that will most help to answer the basic research questions and fit the basic purpose of the study" (p. 83).

Students

The two ELLs, Marina and Nicolas, are Greek Cypriot. The students are sister and brother and come from middle class backgrounds. They arrived in the U.S. three weeks prior to enrolling in the middle school. They stayed in the U.S. for a period of 16 months then returned to their home country, Cyprus.

Marina and Nicolas can be identified as students who are recent arrivals and who have had formal schooling in their native country and have developed strong literacy skills in their first language, Greek (Olsen & Jaramillo, 1999). The students also had very strong mathematics skills. For example, during one of the visits to Cyprus, I noticed that Marina was learning how to do formal geometric proofs such as proving that the sum of the angles of a triangle is equal to 180 degrees. She was only a 7th grader at the time. Typically, this content is taught in formal geometry courses that students take in the U.S. at the 9th or 10th-grade level.

In addition, Marina and Nicolas had taken English about a year before coming to the U.S. They took English two hours a week, a requirement of all Greek Cypriot students in the educational system. Their mother helped them practice the English language a few weeks before their arrival in the U.S. Both students, however, felt that they had a limited understanding of English. They also felt anxious about enrolling in a new school and about adapting to a new environment. Furthermore, their concern was whether they would be welcomed by faculty and students at the new school.

Parents

Marina and Nicolas' parents are both professionals. They came to the U.S. because their father was taking a sabbatical. He is a professor of computer science, and the mother obtained her bachelor's in English literature and a master's in general education. The mother had taught English and ESL for 13 years in Cyprus. Although the mother knew the educational system in Cyprus, she needed guidance in understanding the U.S. schooling system, which I provided during their stay in the U.S.

Teachers

Mr. N, Marina's pre-algebra teacher, and Mr. R, Nicolas' mathematics teacher, had been teaching over 10 years. Mr. N and Mr. R had limited experience in working with ELLs. They had both attended few sessions of professional development offered through the school district on ELLs, but both teachers felt that the sessions did not provide information that helped mainstream content area teachers how to best serve ELLs.

Data Collection

As soon as the students arrived in the U.S., I asked the parents permission to conduct a research study with Marina and Nicolas. I obtained signed consents according to school district and university policies. Because placement issues usually occur in the beginning of the

semester, I wanted to ensure that I collected data before, during, and after enrollment in the school. Thus, the data collection took place in three phases. The first phase involved a survey. Before the students enrolled in school, I used a survey to obtain information about the students' educational background and to provide a context for their experiences with mathematics and exposure, if any, to the English language. The second phase consisted of the following sources of data collection: participant and non-participant observations, formal and informal interviews, documents, fieldnotes, and a reflective journal. These data were collected during and after the time the students enrolled in the school. The third phase was a follow-up on the progress of the two students in Cyprus schools through e-mail and phone conversations. After the students left the U.S., I maintained communication with them and the parents about their transition to Cyprus schools and to the mathematics curriculum.

Participant and Non-participant Observations

Participant observations were conducted when I home tutored the students in mathematics almost on a daily basis for at least one hour. In addition, I attended events such as a field trip, a science fair, and parent meetings. These tutoring sessions and events gave me insight as to what these students and parents were experiencing on a daily basis. This involvement was part of reciprocity in conducting the research, and it provided a way to establish prolonged engagement and persistent observation (Erlandson et al., 1993; Lincoln & Guba, 1985). Non-participant observations occurred two to three times a week for two hours each day during Marina's and Nicolas' mathematics classes. I took fieldnotes during the lesson and expanded these immediately after each lesson (Patton, 1990). These observations focused initially on what the teachers were doing to place the students in mathematics and, after adequate placements had been made, on the mathematics curriculum the students were learning and on strategies the teacher and the ELLs used in the classroom (Celedón-Pattichis, 2002).

Formal and Informal Interviews

Informal interviews with teachers usually occurred before and after a lesson to obtain information on the status of students' placement in advanced mathematics courses and on students' progress. The meetings with the parents and administrator were also included as part of the informal interviews. After the tutoring sessions, I also conducted informal interviews with the students and parents to obtain an update on the students' placement. In addition, formal interviews with teachers were conducted twice during the academic year to obtain perspectives on placement issues and policies implemented by the school district.

Documents

Documents such as student's individual work, textbooks, and school policies on placing and testing students were used as they became relevant in answering the research questions.

Reflexive Journal

The purpose of maintaining a journal was to record personal reflections about the observations, interviews, the documents, and the participants' experiences in placing these ELLs. I made my recordings immediately after each observation, interview, or event (i.e., field trip, science fair, and meeting). These recordings allowed me to address issues that might have been unexpected or to modify and/or identify new categories and themes during the generation of data. I used various sources of data to triangulate the data (Erlandson et al., 1993; Lincoln &

Guba, 1985; Patton, 1990). The students' surveys, observations (fieldnotes), interviews, documents, and the reflective journal allowed me to include perspectives from all the participants. Overall, the two-year study this article is based on drew from over 600 hours of data collection. The next section describes the data analysis.

Data Analysis

The survey, observations, interviews, documents, and reflective journal were coded for major concepts such as policies, procedures, curriculum, assessment, and language. These codes were selected because they dealt specifically with placement issues of ELLs. Beginning with the interviews, I searched for themes that arose from meetings with the administrator and were validated by fieldnotes and/or documents (Miles & Huberman, 1984). For example, if the administrator or teachers mentioned that students were required to take a test for placement in advanced courses, I analyzed school district policies to validate those themes. In addition, data were coded using a constant comparison analysis (Glaser & Strauss, as cited in Lincoln & Guba, 1985, p. 339). These data analyses involved unitizing, categorizing, chunking, and coding by choosing words, phrases, or sentences that specifically addressed the research questions. As categories were coded inductively, I documented recurring themes or patterns across data from all participants. These themes were compared across classifications, and categories were collapsed, merged, or redefined. The findings that emerged from the data analysis are presented in the next section.

Findings: Policies and Procedures

One purpose of the study was to analyze policies and procedures implemented by a school. The themes that emerged on school district policies regarding the assessment and placement of all students included three areas: student placement, test administration, and interpreting results. The following policies were found on the school district's Web site. These policies informed educators what to expect in the three areas, but there was little guidance on what to do specifically for ELLs.

Policies on Student Placement

- 1) "It is the responsibility of the principal and/or designee to determine the appropriate classroom placement of students."
- 2) "Recommendations and suggestions from teachers, parents, and support staff will be considered in determining the appropriate classroom placement of students."

Considering the first school district policy, the principal had assigned the Dean of Students to make all placements at Madison Middle School. Although the second policy calls for input from the parents on the placement of their children, they felt that their concerns were not being heard. The parents and the relatives, three out of four who were professors, had requested to have the students placed in advanced mathematics courses during five meetings with the Dean of Students, but she insisted that these students would not be placed in those courses (such as algebra offered to 7th or 8th graders) because the placement tests had been administered to students in April of the previous school year. Essentially, the Dean of Students assumed that the only work these ELLs could do was the regular mathematics course offered through the Connected Mathematics Project, which is a standards-based mathematics curriculum that requires much reading and writing. Another justification used to place students in the regular mathematics course was that the students' English proficiency was not adequate for

the more advanced mathematics courses. As August and Pease-Alvarez (1996) indicate, though, educators should seriously consider the students' educational background as well as the parents' literacy and feedback on their child's potential in the content areas.

Although the two policies on student placement were meant to be complementary, at this school, they contradicted each other. The Dean of Students initially decided to place students in regular mathematics courses although the parents' recommendation was to place them in advanced courses. As is discussed in the following section, test administration policies also had similar contradictions.

Test Administration

- 1) "Students and parents should be notified prior to test administration and informed of the purposes of the test and intended use of results."
- 2) "...Test administration responsibilities include establishing a positive, comfortable, non-threatening environment which supports the best performance of each student."

The first policy indicates that schools inform parents about the purpose of the exam and how the outcomes of the test will be used. The parents had requested that they be notified whenever Marina and Nicolas would be tested. Even though the parents made this request at the first meeting, the Dean of Students did not inform the parents that Nicolas would be tested and that those results would determine his mathematics placement. The parents found out that Nicolas was being tested during the first two weeks of school when Nicolas told them about the testing.

According to NCTM's (1998) position statement, informing parents and students about the nature of the mathematics program is essential. It was not until the fourth meeting that the parents and relatives learned from other teachers what programs were available to students at Madison Middle School. For example, middle school students could enroll in advanced courses such as geometry and obtain high school credit at a nearby high school. However, this option was never mentioned to these parents.

The second policy affirms the need to establish a comfortable setting during testing. Knowing the importance of this policy, I requested that a translator be provided each time a test was administered to establish a positive, comfortable, non-threatening environment. When the parents offered to serve as translators, the Dean of Students expressed concerns that the parents would help Nicolas during the test. Fortunately, Nicolas' language arts teacher who spoke Greek was willing to translate directions and tasks involved in the mathematics test from English to Greek (i.e., reading instructions, illustrating what multiple choice meant, bubbling, and reading word problems). According to Minicucci and Olsen (1992), not all teachers are willing to help or teach ELLs because they fear "...being 'trapped' into teaching these students on an ongoing basis" (p. 11). However, the language arts teacher volunteered to help Nicolas and enrolled him in her class.

Even though policies on test administration existed, the parents felt that there was miscommunication regarding the testing procedures used to place Nicolas. The second policy on creating a comfortable testing situation for each student was finally recognized when I insisted that a translator be present. The policies on interpreting results are analyzed next.

Policy on Interpreting Results

- 1) "School personnel should provide an opportunity for students and their parents or guardian(s) to receive information explaining the meaning of test results."

- 2) "Principals are responsible to ensure that test scores alone *not* be used for consequential decisions on a student's education; for example, in placement or referral."

After Nicolas went through a series of mathematics tests written in English during the first few weeks of school with a translator who was present during test administration, the parents were notified that he had scored in the top 2% nationwide on a standardized test that was administered. This score qualified him for placement in the algebra course and an honors mathematics seminar that was offered once a week in the school. What is important to note is that this placement was two years above his initial placement by the Dean of Students. This finding is in agreement with the TIMSS regarding the higher levels of mathematics curriculum offered in other countries (U.S. Department of Education, 1997). Contrary to the second school district's policy on interpreting results, unfortunately only test scores were used to determine Nicolas' placement and to legitimize his potential in mathematics.

The policies on interpreting results indicate that while the administrator informed the parents about the test results and how these would affect Nicolas' placement, her decision to base Nicolas' placement on test scores only is contradictory. I now turn to the findings on the crucial role the parents, administrator, and teachers played in Marina's and Nicolas' placements in mathematics.

Findings: Role of Parents, Administrator, and Teachers

A second purpose of the study was to investigate the successes and challenges educators and parents encountered when placing ELLs in middle school mathematics. The following were the roles the parents, the administrator, and the teachers took in placing Marina and Nicolas.

Parents' Role

The parents were new to the public school system in the U.S. They were not aware of what procedures were followed to place students in courses. Because I knew how U.S. schools operate, I accompanied the parents when these students were enrolled. During the first week of classes, the parents and relatives met with the Dean of Students to ensure appropriate placement of Nicolas and Marina in mathematics courses.

Coming from a country that places emphasis on mathematics and science, the parents felt that their children's placement in these courses was a priority. During the placement process, the parents requested support letters from teachers and administrators in Cyprus. In addition, the parents shared the mathematics textbook used in Cyprus during the previous school year so that teachers in the U.S. would understand what curriculum had been covered. The parents also had records of students' grades and important test scores as well as samples of their children's work. Above all, the parents challenged the school on the procedures followed to make the placements of their children.

The parents took an active role in placing their children in advanced courses. They were ready to provide whatever documentation was needed to show that their children needed better placements than those initially made for them. I turn to the administrator's role as she was a key person in placing these students.

Administrator's Role

As was aforementioned, the Dean of Students viewed her role in the school as one of placing students in different courses. This was one of her assignments. The assumption, however, was that because these students' English proficiency was weak, they should be placed in "easier to handle" mathematics courses. There was also much resistance from the Dean of Students in placing Marina and Nicolas in higher-level mathematics courses: "They (the students) will not be enrolled in advanced mathematics classes, period." The Dean of Students made this statement when all four of us (the parents, my husband, and I) had a meeting with her. Furthermore, there was much miscommunication with parents on administering tests to Nicolas. In Cummins' (2001) terms, the Dean of Students wanted to legitimize knowledge through test scores only, a view that contradicts school district policy.

The decision of the dean of students to place Marina and Nicolas in regular mathematics courses points to the fact that assumptions are made on what kinds of courses ELLs can handle. This administrator emphasized that the placements for algebra courses had been made in April during the previous school year and that placements made for the fall semester would require more work. For ELLs, there is an assumption that higher-level mathematics cannot be achieved without mastering the English language, as is the case in California after the passage of Proposition 227. Most ELLs are placed in "newcomer" classes where English is taught for one year, often denying them access to the rest of the curriculum, including mathematics.

This view needs to be challenged for two reasons. One involves the findings from the TIMSS that the U.S. is at least one grade level behind in mathematics curriculum compared to other countries (U.S. Department of Education, 1997). What this means is that students in other countries are often exposed to higher levels of mathematics at earlier grade levels. Second, when ELLs enter U.S. schools, they usually come with two strengths—their mathematics skills and their first language knowledge base (assuming they have had uninterrupted formal schooling in the home country). In this case, teachers may need to continue developing the academic language and the content knowledge by providing opportunities for students to practice communication skills that involve explanation of reasoning, for example, through journal writing.

Given the assumptions administrators often make about ELLs, it is important to challenge the way these students are placed. Parents and teachers can certainly play a major role in advocating for their students. In the next section two approaches teachers utilized to place Marina and Nicolas are analyzed.

Teachers' Role

Two cases on the role of teachers study involving the placement of ELLs in mathematics emerged from this. The procedures each teacher implemented have strong implications for ELLs and their placement in mathematics.

One of the case studies involved Marina's teacher, Mr. N. He says the following about his role as a mathematics teacher:

I consider my role as a teacher to be an advocate for the students. If I have to protect the student, I will do it even if it means getting into trouble at times. That means having to break the rules or whatever policies are in place in the school. I've been here long enough and people have come to respect the decisions I make for my students. (teacher interview, October, 2000)

When Mr. N knew he would have a new student, Marina, in his 8th grade pre-algebra class, he was eager to find out more about her background. The student's record indicated that

her first language was Greek. After the parents and relatives who were familiar with the U.S. schooling system requested to have Marina placed in an algebra class, Mr. N contacted the algebra teacher and initiated the placement process on his own. The negotiation involved analyzing a mathematics textbook that Marina had used the previous year in her home country. After carefully reviewing the mathematics textbook Marina had used in Cyprus, Mr. N realized that most mathematics concepts covered in the textbook were similar to what they would cover in pre-algebra during the school year. He decided to place Marina in the algebra class with the condition that she maintain a high average (B or better). He also assured her that if she did not perform well, she could return to his class.

Mr. N's main goal was to ensure that Marina was given the opportunity to try a subject matter that would be more challenging than his pre-algebra class. According to Moses and Cobb (2001), many students are not given the opportunity to take algebra, which tends to be a "gatekeeper" for many language minority students. Mr. N understood that the course content for this student would be too simple based on his observation of what mathematics the student had done previously in Cyprus. In Cummins's (2001) terms, Mr. N was an advocate for Marina because her knowledge was not legitimized by an IQ test or some other standardized test. Rather, the pre-algebra teacher negotiated the placement process with the algebra teacher. Thus, the student was relieved of added stress related to assessments during the beginning of the school year, allowing her to focus her efforts on the courses and adapting to a new schooling system. The negotiation process Mr. N used to place Marina resulted in one grade level above her initial placement by the Dean of Students. Marina did not have to repeat an entire year of mathematics concepts.

On the other hand, Nicola's teacher, Mr. R, viewed his role in placing students in mathematics in the following way:

I want to ensure that we do what's best for the students, not what the parents want for them, but what the students want. However, they must be able to perform in the exams if they want the appropriate placement. They have to prove themselves. (teacher interview, October 2000)

Mr. R, who taught 7th grade regular mathematics using a standards-based curriculum, found out he would have a new student, Nicolas. The parents and relatives, as with Marina, requested that he be placed in advanced mathematics courses. Mr. R decided that the student should be tested to find out the student's mathematics potential. Based on a timed test on basic mathematics skills, the teacher decided that Nicolas was not strong enough in mathematics because he made some mistakes in his responses. After the parents met with the Dean of Students about five times and talked about placing Nicolas in advanced courses, the Dean of Students set up the exams to be administered for placement in algebra. When Nicolas completed all the exams during the first few weeks of school, he was relieved, but he was also nervous about how his performance on these exams would affect his placement in mathematics.

Mr. R thought it was necessary to follow district policies of testing students to place them in more advanced mathematics courses. According to Cummins (2001), this teacher wanted to legitimize Nicolas's knowledge by having him "prove" that he could perform well. It was not until after Nicolas scored in the top 2% in a national standardized test that he proved to the Dean of Students and the teacher that he could now take advanced mathematics courses. This finding has critical implications for ELLs who come to this country in hopes of bettering their educational opportunities. There is a tendency to place ELLs in regular track mathematics courses, where they may not be as challenged as in college preparatory courses (Oakes, 1985, 1990). With the

new placement, Nicolas enrolled in algebra as a 7th grader and an honors seminar that met once a week for an hour and covered topics such as algebraic proofs and geometric concepts with an emphasis on reasoning and communication skills.

The process used by each of the teachers indicates that they can make a significant difference in the placement of their students. Advocating for ELLs by negotiating the process with another teacher or by providing a translator can help students advance in their taking higher level courses.

Conclusions and Implications

The two case studies of middle school ELLs were presented as well as their parents, relatives, and educators' successes and challenges in placing them in appropriate mathematics courses. Cummins' (2001) intervention framework for empowering minority students was discussed, and the two different procedures the mathematics teachers implemented to place Marina and Nicolas were critically analyzed using this framework. Although the case studies of Marina and Nicolas are not typical ones because they had the support from their parents and relatives who spoke English and could advocate for them, there are findings that are worth noting.

First, there were contradictions between the policies of the school district and what was practiced in the schools in terms of placing students. These contradictions were noted in the procedures that the two mathematics teachers implemented in placing Marina and Nicolas. Marina's teacher negotiated the placement process, while Nicolas' teacher used test scores to place him in advanced mathematics. Reviewing the textbook that Marina used in Cyprus helped the teacher in negotiating the placement process with the algebra teacher. However, there are implications for ELLs who do not have mathematics textbooks that are used in their home country. In this case, educators should consider contacting consulates (i.e., Mexican Consulate and others) to check if educational materials are available so that comparisons to the U.S. mathematics curriculum can be made. Because the two students were placed in advanced mathematics courses that were one or two grade levels above their initial placements, they were able to perform well in the algebra course and to continue their mathematics learning when they returned to Cyprus.

Second, in rethinking policies and procedures, we must include the voices of parents, teachers, and students. In addition, we must offer ELLs the opportunity to enroll in advanced mathematics courses. Giving ELLs the option to try an advanced mathematics course and reassuring them that they can return if they do not perform well may allow more students to progress in mathematics and enroll in college preparatory courses. This finding is relevant especially for students who enter U.S. schools with strong mathematics backgrounds and first language literacy.

Finally, parents, teachers, and administrators need to advocate for ELLs in their initial placements because these placements tend to follow students for the rest of their academic lives. As Valdés (2001) has shown, frequently older students are trapped in cycles of ESL classes that may not help them develop academic English or content area concepts needed to advance from one grade level to another. Parents, teachers, and administrators should demand that the school provide a translator if the mathematics test is administered in English, especially if the results are used to determine a student's placement in advanced courses. Counselors and

others involved in placing ELLs should base their decisions on students' mathematics potential rather than using only students' English proficiency.

This study included students of middle class backgrounds and parents with high educational levels, a limitation to consider in any kind of research. However, what is most significant is the fact that although the parents, relatives, and the students had the cultural and linguistic capital as well as knowledge of how U.S. schools functioned, they still struggled in obtaining an adequate placement for Marina and Nicolas. A strong implication is that the struggle will be even greater in challenging the school system for ELLs and parents who may not have the cultural and linguistic capital and knowledge of how U.S. schools operate. Although these parents may want to advocate for their children, they do not always know how to navigate through school policy and norms. They will need teachers and administrators who are willing to advocate for them, as did Mr. N in Marina's case.

Parents who hold teachers and administrators to the highest level of respect also tend to view them as the sole authority. For this reason, they trust that their children's placement is the best one and may not challenge the decisions made by counselors or others involved in the process. As research has shown, working-class parents as well as parents from certain cultural groups have historically had an uphill battle in advocating for their children's best interests in schools (Lareau & Horvat, 1999; Reay, 1998).

In order to provide a more equitable mathematics education for ELLs, educators must ensure that adequate placements are made by focusing on the student's mathematics potential rather than student's English language proficiency. In addition, educators should provide opportunities for students to enroll in advanced mathematics courses by intervening in the placement process whenever necessary and by advocating for ELLs at all times.

Significance of the Study

Studying the successes and challenges that educators and parents encounter when placing ELLs in mathematics can provide insight as to what procedures help or hinder this student population. In addition, examining existing school district policies and procedures for placing ELLs in advanced courses can engage educators in dialogue about modifications that may be needed to best serve ELLs.

Limitations

As with any case study involving children from middle class backgrounds, the reader should interpret the findings carefully so that generalizations are not made, but rather patterns (and comparisons) are observed from other case studies conducted in this area. The findings are transferable only to the point the readers see adequate to their own context (Erlandson, Harris, Skipper, & Allen, 1993). However, there is the advantage of the researcher's familiarity with the situation, background, and context.

Suggestions for Further Research

The results of these case studies open opportunities to conduct research in three areas. One involves investigating what happens to ELLs' placement in mathematics when the students

come from lower socioeconomic status and have strong mathematics and first language literacy skills. Another area would be to examine what criteria counselors use to place ELLs in mathematics. Finally, further attention should be given to the effects that interventions such as providing a translator or negotiating the placement process with another teacher have on ELLs' taking advanced mathematics courses.

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